

disano ●
illuminazione

LED HIGH PERFORMANCE

Thanks to their extraordinary features combining compact sizes, **high efficiency and long life**, leds are widely used in many professional applications, such as traffic lights, automotive field, back-lightening systems for video-telephony displays, general lightening, road and effect lightening. In the field of traditional lightning, leds are successfully used for orientation and decorative lighting. Recently, thanks to a rapid performance improvement it is also possible to realize solutions for functional inside and outside lighting.

Leds also have other important features:

- They don't release heat.
- They produce a white and clean light.
- Unlike energy saving lamps, when they are turned off, they immediately produce light, you don't have to wait not even one minute for their maximum efficiency.

Moreover the LED-technology offers the following advantages:

Environmental-friendly:

in order to produce LEDs, no heavy metals are used and the total control of the light flow guarantees a very efficient system, without any waste.

Ergonomic: as the light flow can be oriented exclusively where it is needed, without light or energy losses.



LED (tj= 85 °C)	
W	K - ølm 700mA - CRI
690	4000K - 128556lm - CRI 70
	5700K - 105415lm - CRI 90
	K - ølm 1200mA - CRI
1223	4000K - 206316lm - CRI 70
	5700K - 169170lm - CRI 90

NOMINAL LUMINOUS FLUX AND POWER

In some cases Disano uses and reports the values provided by manufacturers regarding the LED's **nominal luminous flux** (Ta=25°C) with a tolerance of $\pm 10\%$ compared to the reported value. The **W** column indicates the **nominal power** of the LED module. The values indicated in the relevant column regarding the LED module refer to a specific temperature: For the LED CHIP the reference is "tj", and for the COB LED the reference is "tp".

LUMEN OUTPUT (tq= 25 °C)	
W tot	K - ølm - CRI
31	4000K - 3463lm - CRI 70
	3000K - 3221lm - CRI 70
41	4000K - 5193lm - CRI 70
	3000K - 4829lm - CRI 70

OUTPUT LUMINOUS FLUX AND POWER

The **luminous flux emitted** by the light source stated by **Disano** in its catalogues may show a tolerance of $\pm 10\%$ with reference to the reported values. The **W tot** column (except for the emergency versions, of which values are to be provided upon request) indicates the total wattage absorbed by the entire system (LED + driver) and will not exceed 10% of the reported value. The values reported in the relevant column refer to the luminaire's ambient temperature "tq".



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ECHO



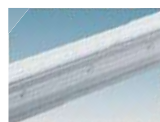
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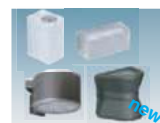
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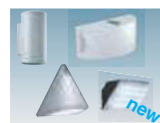
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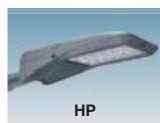
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LED light fixture



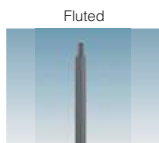
LED light fixture



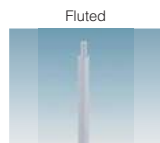
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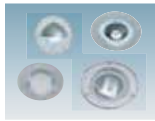
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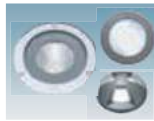
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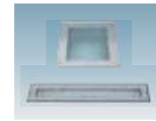
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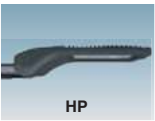


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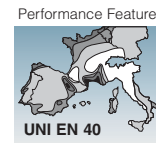
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LIGHTING MANAGEMENT SYSTEMS

...from 1957...

Disano illuminazione S.p.A., founded in 1957, located in rozzano (milan), Has a total production area of 15,000 sqm. The factory is located in Dorno (PV) and covers a floor surface of 100,196 sqm. This area includes the logistics department and the automatic warehouse (16,396 sqm), with an overall capacity of 22,500 pallets.

"DISANO" is a leading manufacturer of lighting fixtures, covering all the main market areas:

- Commercial service sector (ceiling fixtures, recessed fixtures for false ceilings, integrated modular systems)
- Industrial applications (watertight fixtures and high bays)
- Outdoor applications (lawn fixtures, urban decoration compositions, floodlights for lighting large areas, and street lanterns).



Disano Group

FOSNOVA S.r.l., located in Rozzano (Milan), near the Disano S.p.A. plant, boasts decade long expertise in architectural lighting design. Currently, Fosnova's production specializes mostly in fixtures utilising the most recently developed light sources. The Fosnova product range offers a variety of solutions to indoor lighting problems, including: downlights and spotlights, interior floodlights, free standing, wall and ceiling mounted fixtures, fluorescent light modular systems, electrified tracks.

France-based **DISANO FRANCE** s.a., established in 1993, equipped with a warehouse and customer support offices, is responsible for distributing the Group's products in the French territory.

Spain-based **ILUMINACION DISANO** s.a., established in 1992, is now located in new headquarters situated in Roda de Barà (Tarragona), and is responsible for distributing the Group's products in the Spanish territory. Additionally, Iluminación Disano has a productive area of approximately 11,850 sqm totally covered, equipped with advanced systems and highly automated. Iluminación Disano's logistics operate on a fully automated area, with an overall capacity of 6360 pallets. Lastly, the site is home to an office area, including sales, technical and customer support offices.

DISANO is also present in **PORTUGAL, IRELAND, BELGIUM, LUXEMBOURG, CZECH REPUBLIC, SLOVAKIA, POLAND, SLOVENIA, CROATIA, BOSNIA AND HERZEGOVINA, MONTENEGRO, SERBIA, MIDDLE EAST, RUSSIA, AFRICA and LATIN AMERICA** with its own technical support and sales offices.

Quality certification

The Disano Group considers service to the market and continuity in relations with customers as key elements in company policy in which it has continuously invested in Italy and Europe. Improvements in manufacturing technology, excellent innovation, rigorous controls throughout the entire corporate process system, high product quality control standards, as well as the development of advanced computer systems for lighting design calculations. The photometric measurements certified by the CSQ mark are entirely conducted in our research laboratories, in compliance with the European Lighting Design Committee's guidelines.

For DISANO Illuminazione, **Quality System Certification (CSQ-IQNET)** in compliance with **UNI EN ISO 9001:2015** standard (design, production and sale of lighting fixtures and accessories) is a further step towards improvement of the company processes aimed at achieving customer satisfaction.

An Environmental Policy is the framework of the values and principles that guide a company's commitment in environmental protection; to this end, it implements an Environmental Management System compliant with the requirements of **UNI EN ISO 14001**. Disano illuminazione is making efforts to pursue the constant improvement of its environmental performance in order to reduce and prevent pollution by identifying the environmental issues and impacts (both direct and indirect) associated with its business.



Production



On a surface area of 66.645 sqm, production is highly automated and ensures high quality standard in terms of reliability and long product life.

PLASTIC MATERIALS AND METALS

The unit is equipped with injection moulding machines (up to 2500 tons each), extrusion

machines, equipment to make sheet metals and profiles also used for electrified tracks.

MACHINING OF SHEET METALS AND OPTICAL SYSTEMS

Computer controlled, high-precision manufacturing tools include mechanical and hydraulic presses; all systems are specially designed for controlled quality production and competitive pricing.



PAINTING PLANT

All Disano lighting products have double coated surfaces. The double coating process is fundamental to ensure that fixtures exposed to aggressive outdoor agents are able to withstand such conditions as high pollution rates, salty environments or extreme weather conditions. Our surface coating

department is able to meet the highest quality and environmentally friendly standards. Each luminaire undergoes special preparation and our plant is equipped with an air purifier capable of meeting latest



anti-pollution standards.

The coating cycle is made up of the following stages:

- before being coated, each piece undergoes chemical treatments to allow a firm fixation of the coating onto the surface.

- **STANDARD POWDER COATING:** the standard powder coating consists of a pre-treatment of the metal surface and of a successive single layer of polyester powder coating

- **MARINE POWDER COATING:** the powder coating of fixtures meant to be installed in marine environments include the metal surface pre-treatment, a first epoxy primer coating and the successive polyester powder coating (totally 2 layers).

- **POWDER COATING FOR AGGRESSIVE ENVIRONMENTS** (resistant to acetic salt fogs): the powder coating for aggressive environments consists of a metal surface pre-treatment, a first layer of zinc primer, a second layer of epoxy primer and a successive layer of polyester powder coating (totally 3 layers).

- **STANDARD LIQUID COATING:** the standard liquid coating cycle consists of a metal surface pre-treatment, a first epoxy cataphoresis coating and a final layer of bi-component acrylic liquid coating (totally 2 layers).

- **MARINE LIQUID COATING:** the standard liquid coating cycle consists of a metal surface pre-treatment, a first epoxy cataphoresis coating, a successive layer of bi-component acrylic liquid primer and a final layer of bi-component acrylic liquid coating (totally 3 layers).

MANUFACTURING/PRODUCTION OFFICES

The offices in charge of production and shipping are located close to the factory. Arranged on several levels, they cover a surface area of approximately 2,660 sqm. The covered car park extends on a floor surface of 1,450 sqm.

Laboratories

Underwriters Laboratories

The Disano illuminazione laboratories perform photometric analysis with third-party reviewers of UL International Italia and are authorized to conduct the following tests:

UNI EN 13032-1:2012

Measurement and presentation of photometric data of lamps and luminaire, Part: 1 Measurement and file format.

UNI EN 13032-4:2015

Measurement and presentation of photometric data of lamps and luminaires, Part: 4 LED lamps, modules and luminaires.

IES LM-79-08

Approved method: Electrical and photometric measurement of solid-state lighting products (sec. 9.0, 10.0, 11.0, 12.0, 12.2, 12.5, 14.0).



RESEARCH & DEVELOPMENT: FROM THE EXCELLENCE OF OUR LABS TO THE QUALITY AND SAFETY OF OUR LUMINAIRES.

Disano has always privileged investments to equip its laboratories with cutting-edge technologies to promote the ongoing improvement of the production processes and the design of new lighting fittings. The Research and Development sector occupies a central position in the activities engaged in by Disano. In particular, this sector focuses on:

- the design of new lighting fittings
- the search for new lighting solutions,
- experimenting new light sources and materials.

The experimental work on new materials and the experimental testing of the innovations introduced enable the Disano Group to achieve a qualitative standard that ensures an absolute guarantee and a technological level that is always very advanced.

PRODUCT SAFETY LABORATORIES (third-party supervision by IMQ-UL)

At the Disano illuminazione laboratories, which use the same instrumentation employed in the most accredited certifying bodies, all products undergo several tests to measure their efficiency and resistance to use and to weather. Disano illuminazione performs tests under the supervision of two of the most important certifying bodies in Italy: IMQ S.p.A and UL Italia. The company's laboratories, in accordance with the WMT/CTF-Level 2 testing procedure, are authorized to issue the ENEC certification to ensure compliance with the following global lighting standards:

- IEC/EN 60598-1 - Luminaires
- IEC/EN 60598-2-1 - Fixed general purpose lights
- IEC/EN 60598-2-3 - Road and street lights
- IEC/EN 60598-2-5 - Floodlights
- IEC/EN 60598-2-6 - Lights with built-in transformers

IEC/EN 60598-2-13 - Ground recessed lights

IEC/EN 60598-2-22 - Emergency lights

PRODUCT ELECTROMAGNETIC COMPATIBILITY LABORATORIES (third-party supervision by IMQ-UL)

Moreover, Disano illuminazione laboratories perform electromagnetic compatibility tests on its lighting products in compliance with the following global lighting standards:

IEC/EN 61547 - General lighting EMC immunity with special reference to surges, bursts, voltage dips and short interruptions and electrostatic discharges

IEC/EN 55015 - Limits and methods of measurement

IEC/EN 61000-3-2 - Analysis of harmonic current emissions

IEC 61000-3-3 - Flickering measurement

The company's laboratories also carry out the following tests: chemical tests, physical tests and electrical tests on semi-finished products selected for production, tests on randomly selected samples from semi-finished products, functional tests on randomly selected samples from finished products, accelerated exposure tests of coatings to measure resistance to ultraviolet radiation. In this way, Disano illuminazione can ensure the quality of all of the components used, in compliance with internationally accepted procedures before each finished product is placed on the market.

MEASUREMENTS (third-party supervision by UL)

The adoption of computer aided design technology enables the reflector's optimum configuration to be studied in relation to the distribution of the desired light beam and the determination of the correct ratio between the parabola and the position of the lamp. The experimental tests of the lighting parameters are then performed on the first sample of the parabola using a mirror goniophotometer. The goniophotometer consists of various components, the core feature comprises the photometric tunnel, where the samples are positioned. The following parameters are measured: luminous flux for each spatial angle, temperature, the electric parameters for the power supply are tested and managed using a process computer that enables measurements to be made in accordance with the international standards prescribed by the CIE regulations. The light sources used for the measurements are prepared beforehand in the lamp ageing laboratory that is an integral part of the laboratory facility. A measurement is taken before starting the final production to define the lighting unit's correct photometric curve. The lighting unit's photometric data is recorded and processed by the computer. Samples of finished products are subjected to the lighting quality control process.

Distribution service



DISTRIBUTION SERVICE

Italy: a large 144,000 m³ warehouse for a total of 22,500 pallets has the purpose of optimising the delivery and shipping service to the customers' local warehouses, for a faster response to the end market.

Spain: a fully automated warehouse with an overall capacity of approximately 6360 pallets.

France: Semi-Automated warehouse for the entire French Market.

SEMI-FINISHED PRODUCT WAREHOUSE

The warehouse covers a surface area of approximately 12,000 sqm. With an overall capacity of 13,650 pallets, and is entirely automated for semi-finished products.

POLE WAREHOUSE

The warehouse where poles are stored develops on a floor surface of approximately 2,100 sqm and is operated in a semi-automatic way.

Customer services

The disano group offers designers, installers and distributors a series of free services that are able to completely satisfy technical, lighting design and commercial needs.

CATALOGUE

The paper catalogues produced by the Disano Group are a consolidated tradition that is repeated every year, not only in Italian, but also in Spanish, French and English.

CONSULTING CENTRE

From the Lighting Technology Consulting Centre, you can request any type of support for the correct use of light fixtures. In fact, the Disano Group guarantees total flexibility in implementing projects using non standard fixtures. The Group's aim is to keep an open-door policy with its customers, and to be at their service at all times.

OUR PROMOTERS

Promoters are present in every region and are at the complete disposal of wholesalers, installers and designers to immediately solve any technical, commercial or lighting design problem and to promote the Disano product nationwide.

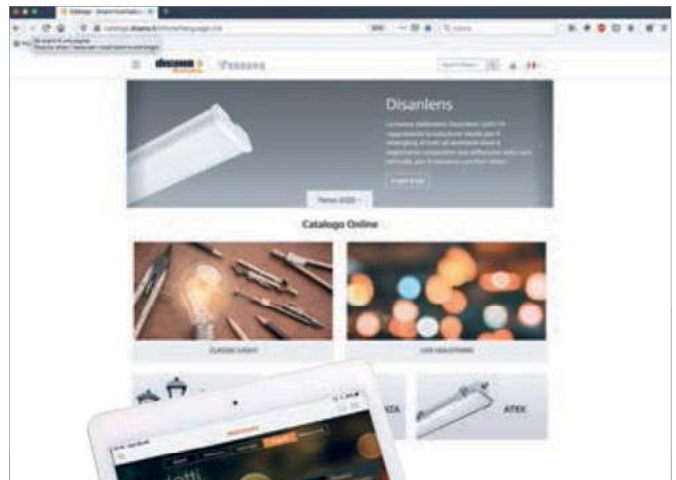
They also supply estimates and develop lighting design projects, ensuring continuous support.

MARKETING

The Marketing Department has been set up to assist wholesalers by implementing marketing and promotional support actions at the point of sale, advertising their trademarks to make them become reference point for end users.

LIGHTING MAGAZINE

Has been made a regular information editorial about light. The latter aims to make the culture of light, targeted communication and continuous information to designers and architects, and describe their projects and thoughts.



A narrative of light on the Web

The Disano Group has created an innovative **WEBSITE**, periodically updated, which provides detailed data and information about the company, its products, representative projects, designs, new products.

Want to browse Disano and Fosnova catalogues easily and quickly, view technical specifications at a glance or retrieve design information with just a few clicks? Now you can thanks to our application for **iPAD AND iPHONE** available in four languages (Italian, English, French and Spanish)!

A close-up of a Disano product against a dark background and the words 'Turn On': this is the homepage that users see when they log into our virtual world. May the journey begin!

What is LED?

LED is the acronym for **LIGHT EMITTING DIODE**, a component that emits monochromatic light with the flow of electric current. LEDs are providing lighting designers with a whole new range of exiting tools to help them achieve the best results and develop creative lighting solutions with amazing effects that were once technically impossible to achieve. A high-quality LED with an RA 90 index rated at 3200K - 6500K has also appeared on the market over the last year. The brightness, homogeneity, and colour rendering of LED lights have been improved to the extent that they are now being used for a wide range of lighting applications. **LED** modules consist of a certain number of light emitting diodes mounted on a printed circuit board (rigid and flexible) with active or passive current regulating devices. Optics or light guiding devices can also be added depending on the field of application to obtain different beams and light. The variety of colours, the compact size and the flexibility of the modules ensure a broad range of creative possibilities in many applications.

Photobiological safety

- Crystal layers treated by chemical vapour deposition (wafer)
- A number of layers are then selected based on their luminosity and colour temperature (chip)
- The chip is mounted on a support to dissipate heat and add current continuity to the system (package)
- Lens support
- Protection against external stress
- The rear side of the package emits heat, the front emits light

LEDs: how do they work?

LEDs are semiconductor devices which convert electricity into visible light. When powered (direct polarization), the electrons move through the semiconductor, and some of them fall in a lower energy band. Throughout the process, the energy "saved" is emitted as light. Technological research has allowed to achieve 180 lm/WW for each high voltage LED. The current level of development shows that LED technology has not yet reached its full potential.

Technical specifications

We often read about photobiological safety in lighting design. This very important factor is determined by the amount of radiations emitted by all the sources with a wave length ranging between 200 nm and 3000 nm. Excessive radiation exposure can be harmful for human health. The EN62471 standard classifies light sources into risk groups.



Risk Group 0 (RG0): luminaires are exempt from photobiological risks in compliance with standard EN 62471.



Risk Group 0 (RG0 Ethr): luminaires are exempt from photobiological risks in compliance with standard EN 62471. If necessary, contact our customer service for the observation distance.



Risk Group 1 (low risk group): luminaires do not pose any risks due to normal behavioural limitations of a person when exposed to a light source.



Risk Group 2 (intermediate risk group): luminaires do not pose any risks due to people's aversion response to very bright light sources or due to thermal discomfort.



Environmental advantages

- Extremely long working life (50.000 h)
- Growing efficiency
- Instant switch-on mode
- Dimming option with no colour temperature variations
- Filter-free direct coloured light emission
- Complete colour spectrum
- Dynamic colour control mode (DMX, DALI)
- Can be switched on also at low temperature rates (-35°C)
- Photobiological safety



Advantages for users

- A wide range of different colours together with compact and flexible modules enable many creative and innovative design solutions
- Reduced maintenance costs
- Lower energy consumption, longer working life and reduced maintenance facilitate the creation of interesting applications



General advantages

- Mercury-free
- No IR or UV components can be found in the visible light spectrum
- Reduced use of renewable and non-renewable energy sources
- Environment enhancement
- No light pollution
- Less power installed in each lighting point

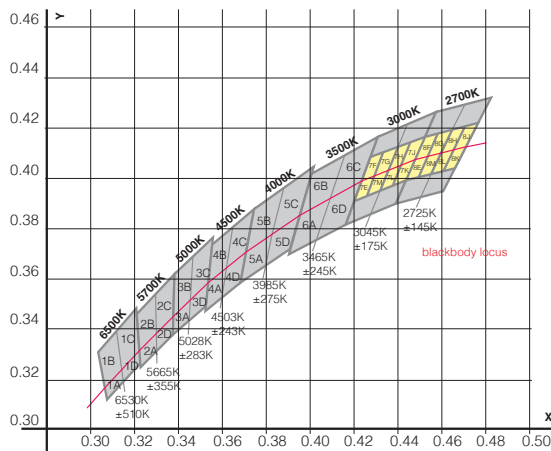


Design-related advantages

- Wide choice of design solutions
- Bright, saturated colours
- Vibration resistant lights
- Unidirectional light emission (light is shed only upon the desired object or area)

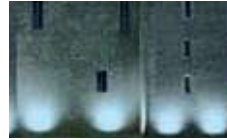
White LED

Several distinctions are made during the production process of the LED lights selected. The chromatic areas called 'bin' are horizontal contours along the BBL line. **Colour uniformity depends on the manufacturer's know-how and quality standards.** A larger selection means higher quality, but also higher costs.



Graphic representation of BINNING: choice of LEDs to use in relation to their colour temperature. Source: Lumileds, 2011.

Cold white



5000K ÷ 7000K - CRI 70

Typical colour temperature: 5600K
Outdoor applications (e.g., parks, gardens)

Natural white



3700K ÷ 4300K - CRI 75

Typical colour temperature: 4100K
Combinations with existing light sources (e.g., shopping centres)

Warm white



2800K ÷ 3400K - CRI 80

Typical colour temperature: 3200K
For indoor applications, to enhance colours

Amber

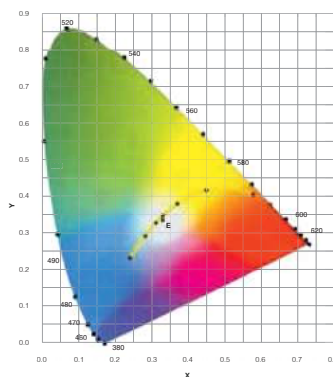


2200K

Typical colour temperature: 2200K
Outdoor applications (e.g., parks, gardens, historical centres)

MacAdam Ellipses

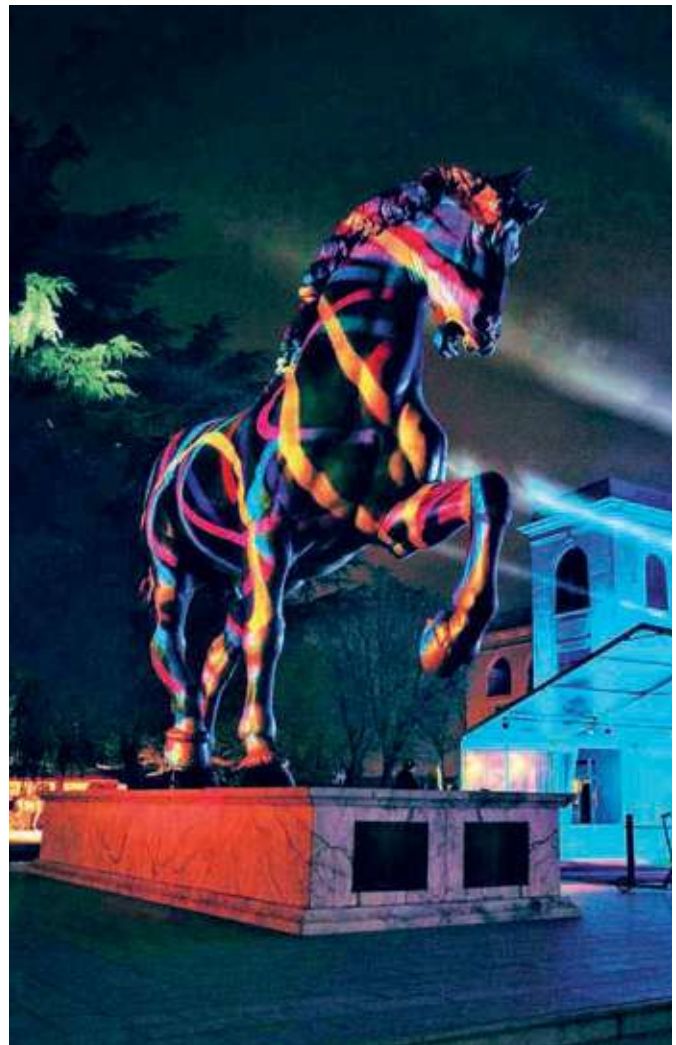
Refer to the area on a chromaticity diagram that contains all the colours which are indistinguishable, to the average human eye, from the colour at the centre of an ellipse. The contour of the ellipse represents the just-noticeable difference of chromaticity. MacAdam shows the difference between two light sources through ellipses, which are described as having 'steps' that indicate the standard deviation of colour. In applications where light sources are visible, this phenomenon should be taken into account because a 3-step ellipse has a lower colour variation than a 5-step.



Source:
Standard Chromaticity
Region Plotted
on the 1931 CIE Curve.

Coloured LEDs

The CIE chromatic diagram is based on the physiological peculiarity of the human eye to assess colours by breaking them down into three fundamental chromatic components (three-colour process): red, blue and green, positioned at the top of the diagram curve. The CIE chromatic diagram can be obtained by calculating x and y for each pure colour. The spectrum colours (or pure colours) can be found on the contour curve, while the colours inside the diagram are real colours. It should be noted that the colour white (and other colours in the central area - achromatic colours or shades of grey) are not pure colours, and can not be associated to a specific wavelength.



LED and traditional lamps

LEDs have a nominal light output of 150 Lumens and can bring remarkable energy savings compared to conventional sources: Discharge lamps with high colour rendering ($Ra > 60$). They can save up to 30-40% in energy costs. When comparing a LED lighting system with a conventional system we need to take into account the fixture's actual Lm/W ratio rather than the source's initial lumens. The Lm/W ratio of any lighting fixture depends on different factors, such as power loss or power variations due to temperature. In discharge lamps these variations cut by half the initial luminous efficiency (expressed in lumen per watt) of sodium or metal halide sources. The products designed by Disano, instead, minimize losses and operate efficiently even with traditional technology

The wavelength of light (colour) is adjusted using semiconductor materials and different production processes.

Unlike lamps emitting a continuous spectrum, **LED lights emit monochromatic light of one particular colour to guarantee the emission.**

Light sources (colour temperature)	K
Blue sky	12-20.000
Summer daylight (sunshine and sky)	6500
"Daylight" fluorescent tube	6300
White light LEDs	5600
Sunlight (midday, summer, mid-latitude)	5400
"Cool white" fluorescent tube	3400
"Warm white" LED	3250
100W halogen lamp	3000
"Warm white" fluorescent tube	2950
Amber	2200
Sodium lamp	2100
Sunlight (dawn, dusk)	2000
Candle light	1850-1900

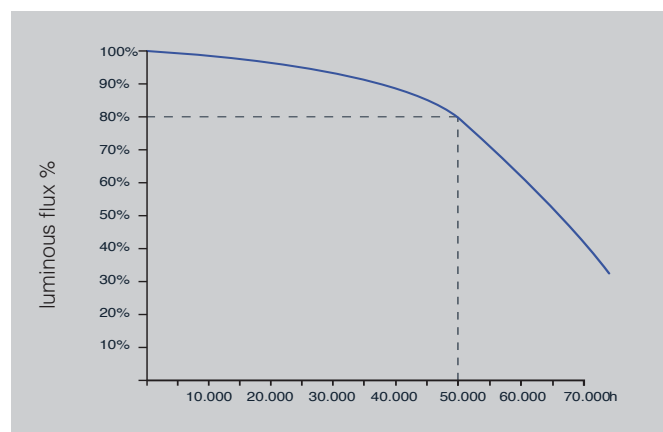
Light sources (colour rendering)	CRI
Sodium lamp	0-25
White light mercury lamp	45
"Warm white" fluorescent tube	55-73
"Cool white" fluorescent tube	65-86
LED	80
Metal halide lamps	85-93
100W incandescent lamp	100

Life expectancy

Firstly, it should be noted that LEDs, unlike traditional sources, will not turn off suddenly when their working life ends, but will slowly fade their initial luminous flux until they turn off completely. In fact, LEDs do not break (except for manufacturing damages) but decay gradually and constantly. The decrease of LED flux, normally after 50,000 hrs, is defined by the working life and is represented by the L80 mark (see charts), which means that the flux is kept up to 80% after 50,000 hrs. The "B" letter followed by a number ranging between 10 and 50 indicates the quality of the fixture and defines the LED percentage that doesn't keep the declared characteristics when it reaches 50,000 working hours.

EXAMPLE: LED declared L80/B10 = 50,000 hrs

This means that when the LED reaches 50,000 hours of operation, 90% (B10) of the LED will have a luminous flux corresponding to 80% of the initial flux (L80)



The influence of heat

The working life of LEDs largely depends on their inner temperature. Any statement about the working life of a LED light is considered reliable after assessing the influence of temperature. Excessive temperature affects the correct functioning of LED lights and reduces their working life.

The values concerning lamp life are regarded as reliable after determining the effect of heat on LED sources. In fact, overheated LEDs are more likely to be affected by malfunction and have a shorter life cycle. Therefore, for LEDs to operate properly, guarantee long life (e.g. 50,000 hrs) and a natural degradation of the luminous flux (e.g. L70), they must be designed to evenly dissipate the heat they produce. The nominal performance of LEDs is respected only if their working temperature is not exceeded (T_j)

Disano is a competent and responsible company that takes these factors into account and measures real values.

Thermal Resistance (C°/W): it indicates the difficulty of LED lights to expel heat, which causes the light sources to deteriorate. TR should be very low to guarantee energy efficiency and durability (LM70). A range of products characterized by even lower values will be launched shortly to guarantee improved light levels and longer working life (at present, a minimum of 50,000 hours in certain conditions).

Luminous flux and power

OUTPUT LUMINOUS FLUX AND POWER

The **luminous flux emitted** by the light source stated by **Disano** in its catalogues may show a tolerance of $\pm 10\%$ with reference to the reported values.

The **W tot** column (except for the emergency versions, of which values are to be provided upon request) indicates the total wattage absorbed by the entire system (LED + driver) and will not exceed 10% of the reported value.

The values reported in the relevant column refer to the luminaire's ambient temperature "**tq**".

tq = temperature of the environment surrounding the luminaire with reference to a specific performance.

NOMINAL LUMINOUS FLUX AND POWER

In some cases Disano uses and reports the values provided by manufacturers regarding the LED's **nominal luminous flux** ($T_a = 25^\circ C$) with a tolerance of $\pm 10\%$ compared to the reported value.

The **W** column indicates the **nominal power** of the LED module.

The values indicated in the relevant column regarding the LED module refer to a specific temperature.

For the LED CHIP the reference is "**tj**", and for the COB LED the reference is "**tp**".

tj = temperature of LED's internal junction point.

tp = temperature of the LED module's outer surface

Power supply

Based on the type of LED, they can be powered:

- with a 24V supply- signalling/semi-power/power LED
- with a 1050mA power supply – power LED
- The latter can be powered with a higher current to increase its luminous flux and power. In this case it is fundamental to ensure that LEDs have excellent air circulation and a good heat sink to dissipate heat.
- the LED power supply has the purpose to maintain and control the exact current circulating through the circuit; excessive current would damage the LEDs in a few seconds while a weak current would impair performance. -To guarantee constant current, all LEDs of a circuit must be connected in series; if they are connected in parallel (like the one usually used for halogen bulbs) this will deteriorate LEDs very quickly. Power supplies have an isolated output and the maximum input voltage never reaches dangerous levels.

Example:

Power supply	n.LED	W	ølm
350mA	8	21	2610
	16	41	5301
	24	61	7781
530mA	8	32	3609
	16	84	7238
	24	97	10721
700mA	8	42	4700
	16	84	9401
	24	126	14007

LED regulation

The opportunity to check each channel to which LED lights of the same colour are connected enables to obtain a range of colours based on different shades of red, green and blue. Colour emission is regulated using specific dimmer switches. In other words, **these accessories switch the LED lights on and off with a constant frequency and at variable switch-on intervals** (the slowness of the human eye ensures that the on-off mode is integrated and regulated, giving the impression of regulation).



Temperature controller

Our products are equipped with an automatic temperature control device. In the event of an unexpected temperature rise caused by anomalous weather conditions, the system will reduce the drive current or turn off the system as the LED gets warmer, guaranteeing proper operation. Moreover they are equipped with an overvoltage protection device as required by EN 61547.

In short:

- fixtures that are powered at up to 530mA have a smart current limiting device;
- fixtures that are powered at 700mA have an On/Off device.

DRIVERS for dimming LED lights

Owing to the large number of different methods, it is up to the manufacturer of the driver to specify the type of control signal. Even though commonly accepted control standards do not exist, the most popular are:

1-10 V **1-10V (subcode -12):** a 1-10 voltage rate is applied to the driver to produce variable light levels, which are proportionate to the light emitted by a LED lamp.



DALI (subcode -0041): digital transmission protocol for sending light levels information to the LED drivers.

Up to 64 DALI fixtures can be controlled with a high degree of flexibility via a 2-wire control line individually, jointly or in up to 16 groups. The lighting is switched on and dimmed via a control line.

BENEFITS:

- Simple planning: no need to assign lighting groups at the planning stage. Instead, they can be set later with the aid of a controller. Control line planning can be separated from power supply planning.
- Simple installation: the control line is protected against polarity reversal and can be routed together with the power supply, for example in a 5-core sheathed cable. The control line must be simply rated for line voltage. There is no need for a special cable.
- Flexible lighting groups for later changes: with DALI, the lighting groups are not hard-wired. The individual luminaires are grouped by simply assigning them to groups with the aid of a controller. These groupings can be changed at any time.
- Synchronous changes of lighting scenes: even if different luminaires are started at different dimmer values or different types of lamp are combined with one another, DALI changes from one lighting scene to another in synchronous mode.

IGBT

IGBT: lamps are turned on and off by a rapid touch; light intensity is regulated by keeping pressure on the pushbuttons.

PUSH DALI

With **PushDALI (subcode -0045)** it is possible to create lighting systems that can be easily switched ON/OFF and dimmed at low costs using conventional mains voltage push-buttons for lighting control. The different switching and dimming functions depend on the fixture's operating status at a given moment and on how long the button is pressed. A short pressure of the button turns the connected drivers ON or OFF; a longer pressure of the button will dim the connected drivers (i.e. the fixture's light level increases or decreases).

BENEFITS:

- Low-cost dimming and switching
- User-friendly operation from multiple lighting control points
- Theoretically unlimited number of driver (we recommend a maximum of 25 driver per button)
- Selectable fade times depending on the driver used
- Dimming levels tailored to human eye sensitivity
- A solution that can be used in combination with ambient light sensors (if any)
- Lighting control signal that corresponds to the mains voltage
- Powerless switching via a lighting control interface

No glare for excellent optical performance



Maximum light stability for visual wellbeing



The primary objective of any interior lighting system is to achieve the best visual comfort adjusted to the needs of the space where light is used. In work spaces, for instance, thanks to new light sources and control systems, the lighting system can establish a relation with natural daylight and therefore create a visually comfortable space during the entire course of the work day, avoiding waste and protecting the health of workers.

Do you want to avoid headaches or eye strain?



Choose fixtures with glare control (**UGR<19 or UGR<16**) for safe and comfortable lighting levels.

Our mind perceives light oscillations at up to 200 Hz.

A long-term exposure to high frequencies (between 70 and 160 Hz) can cause discomfort, headaches, visual fatigue and impaired visual performance.

Classification of UGR values by applications

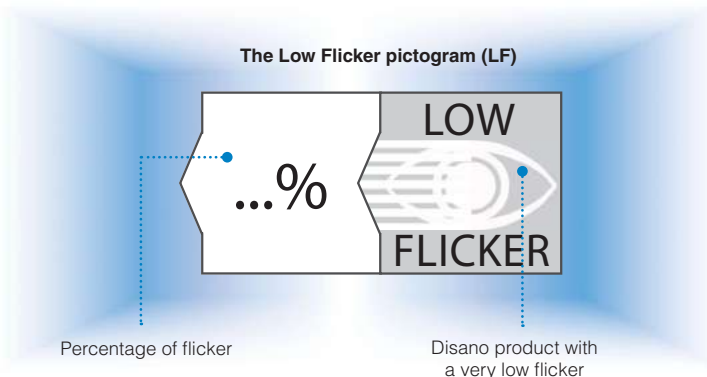
No or imperceptible glare	UGR≤13
Very demanding applications (technical drawings)	UGR≤16
Offices and schools (reading, business meetings, computer work)	UGR≤19
Industrial applications, craftsmen	UGR≤22
Transit areas	UGR≤25
High glare	UGR>28

The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system.

The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30**; **the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

Low Flicker

On a chosen selection of fixtures, Disano illuminazione uses **ripple-free** LED switching drivers capable of minimizing flicker. For all Disano spotlights you may find the following mark/pictogram:



The level of flicker that can be perceived or that is acceptable to human eye may vary. In the presence of a high level of flicker, especially based on perception, optical flicker can generate distress among users and cause a lighting system to be unacceptable from the quality point of view. At present there is no test or verification that can help identify low-flicker optical products. Disano illuminazione, after years of research in the lighting sector, has identified optimal flicker limits for products that operate at frequencies of ≥ 400 Hz. With these optimal limits Disano illuminazione can now offer products with proper quality values and be certified with the Low Flicker Mark, allowing easy identification. **The mark is identified with the "Low Flicker" logo that includes a maximum flicker value of 8% at frequencies of ≥ 400 Hz.**

Flicker is a common issue with LED lamps. It can occur at frequencies below 60 Hz and depends on several factors, such as the ripple emitted by drivers. The notion of flicker-free is very different from that of ripple-free. Ripple is most commonly used by driver manufacturers. Furthermore, "flicker-free" does not mean "without" but rather "very low".

Ripple Free



Ripple free: Quality LED drivers come with a sophisticated multistage circuit to power LED with an ideal current source (one line), without overloads (**Figure 1**). By "ripple" we mean the dimension of the output waveform of a LED driver. Despite the oscillation occurs at frequencies that cannot be perceived by naked eye, evidence shows that the human brain can perceive light oscillations up to 200 Hz (in LED drivers with ripple, this frequency is 100 Hz). Possible problems include headaches, eye strain, distorted vision and, in some cases, even epileptic seizures. Figure 2 shows the greatest impact on LED life at high temperatures: the LED appears to be overpowered in zone "A" and underpowered in zone "B".

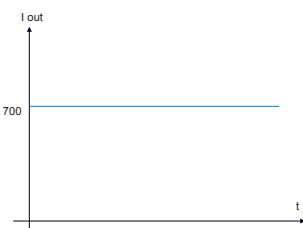


Figure 1. LED powered with ideal current

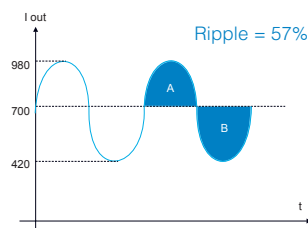


Figure 2. A: LED overpowered, B: LED underpowered

Figure 2: in the absence of a suitable heat sink, the excess temperature of area "A" is not balanced by zone "B", with the result that the LED junction temperature will be higher than the temperature of a RIPPLE-FREE product.

Flicker and video coverage

Light with no glare

Lighting must meet the needs of international events in terms of efficiency and high-definition TV broadcasting, which require high levels of luminance, light uniformity, excellent colour rendering and greater attention the visual comfort of spectators and athletes with a light without glare.



Need more stable images and videos?

Luminous flux oscillations have clear impacts on monitors where images may appear fuzzy or blurry. Therefore, light stability is a key requirement for obtaining high quality videos. It is important to consider that light oscillations provoke effects during video broadcasting, where images appear crossed by numerous black lines, making watching impossible. In addition to this, high current oscillations have a negative effect on LEDs, on the driver life and on the efficiency of the entire lighting system.

Guidelines for TV broadcasts with LED lighting systems

During a broadcast it is not uncommon to perceive an annoying flicker especially during slow motion. This flicker is distracting and should be eliminated where possible. The circumstances that produce the flicker vary upon the frequency modulation, voltage and camera frame rate. The table below provides a general rule of flicker factor values produced by various lighting systems.

A flicker factor of less than 5% will generally not cause problems for slow motion replays at up to 150 frames per second. A lighting system with a flicker factor of less than 5% will eliminate the perceived flicker at most frame rates per second used within the sports television industry. The acceptable level of flicker factor (FF) is indicated in the Illuminance Category Tables.

Flicker Factor Reference Table	
Type of Illuminance System	FF value (guide only)
Daylight	0 %
LED Luminaires - % of flicker depend upon the type of LED power supply	<3 %
Discharge lamps with high frequency ballasts	<4 %
Discharge lamps with 3-phase magnetic ballasts for uniform light	8-20 %
Discharge lamps with single-phase magnetic ballasts	30-50 %



To guarantee optimal LED fixture performance during the expected service life, Disano provides its luminaires with an advanced surge protector that can withstand surges of up to 8 kV, based on product. The surge protector is compliant with EN 61547 and has the aim to protect the LED module and related driver.

It operates in two modes:

- **differential mode:** surge between power conductors, between the phase conductor to the neutral conductor. Substantially, between phase (L) and neutral (N) no substantial surges are present because voltage peaks are suppressed by other equipment connected to the power line; as a consequence a lower surge protector is sufficient. Depending on the type of product, Disano provides a protection from surges of up to 6 kV.
- **common mode:** surge between power conductors, L/N, to the ground or the body of the luminaire if it is classified in class II (i.e. it is installed on a metal pole). Overvoltage in the common mode are generated by lightning strikes and may reach very high levels. Depending on the type of product, Disano provides a protection from surges of up to 8 kV (10kV upon request).

Every year, public/road and amenity lighting managers are called to face the numerous damages caused by lightning and overcurrents. To protect lighting installations from *surge*, i.e. the rapid increase in voltage between parts of opposite polarities and/or the ground, Disano has equipped its luminaires with an EN 61547 compliant **surge protector**, capable of protecting the LED module and their related driver from voltage spikes.

Benefits of the LED lighting

Thanks to their efficiency, LED sources are well suited to illuminate roads and industrial and commercial buildings. In comparison, LEDs consume up to 70 % less energy than traditional lamps and their service life (up to 100,000 hours long) help save on energy and maintenance costs. Moreover, LED systems can be easily monitored via lighting control systems and sensors that control lights based on different needs.

Surge protective device

Street lighting installations and generally all lighting fixtures mounted outdoors are directly exposed to three types of overvoltage which may be caused by:

- the line powering the system/luminaires
- the environment due to the accumulation of electrostatic discharges (ESD)
- lightning strikes falling near the lighting system

LEDs and their related drivers are designed exclusively for low voltage values, making them particularly sensitive to overvoltage. The economic benefits deriving from the use of LED lighting systems could be lost in case of system failure and the consequent maintenance or replacement of the LED modules; it is therefore necessary to equip luminaires with the right surge protective device.

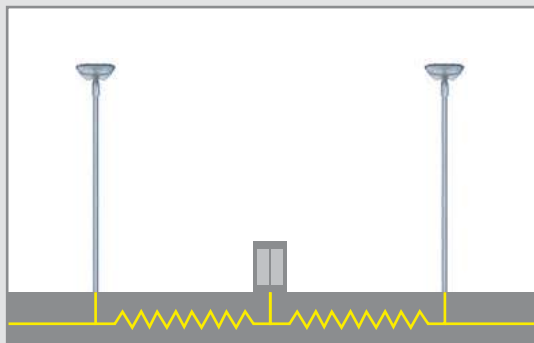
The effects of surges

Surges of reduced magnitude do not necessarily cause the immediate failure of the LED modules or of the drivers that have not been adequately protected. However, if such surges occur very often, they can cause the early wear of the LED and consequently shorten its service life. High power surges caused by lightning, instead may translate into a sudden failure of the LED modules or of the drivers. Overvoltage can cause high current to flow in drivers and in the LED modules, resulting into the following effects:

- partial or total failure of the LED modules or of the drivers
- faster deterioration of the LED modules, shortening their service life
- failure of the command interface

What is a surge

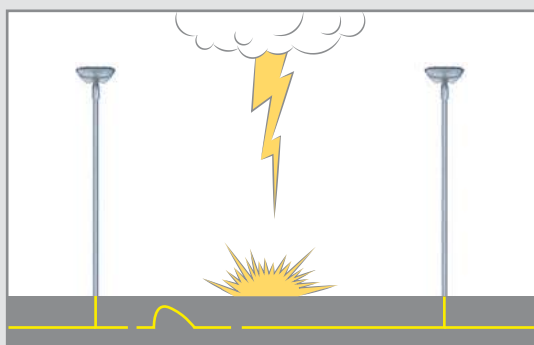
A surge is a rapid increase in voltage on a power line between parts of opposite polarities and/or the ground. Some power surges may exceed the isolation or immunity threshold of electronic components causing it to fail. A power surge may be caused by one of the following conditions:



Switching processes/changing the load on the power line

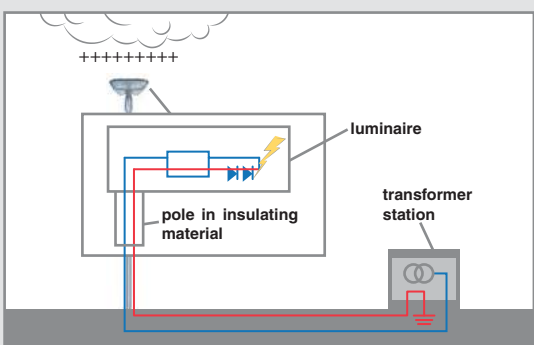
Differential mode: between power conductors, and between the phase conductor and the neutral pole conductor. This mode mainly concerns the primary circuits of the LED driver causing it to fail by short circuit. But if the phenomenon accumulates high energy, it could also affect the LED modules before it dissipates.

Common mode: between power conductors, L/N, to the ground phase or to the body of the luminaire if it is classified in class II (i.e. it is installed on a metal pole). This does not damage the driver's internal circuits but it will be transferred to the secondary circuit, directly affecting the LED modules.



Lightning falling near the installation

These surges are originated when lightning strikes near the lighting installation. The high voltage discharged by the lightning propagates to the ground diminishing its strength as it goes further away from the point where it fell. The metal pole takes on the same potential of the surrounding ground, electrically affecting the LED module and the related driver



Accumulation of electrostatic discharges

Since the fixture's power system is connected to the ground (TT and TN distribution systems require the connection of the neutral conductor to the ground in the transformer station), a differential in potential is created between the luminaire's body and the LED driver's internal circuits connected to the neutral of the power line. The voltage value that is created is so high that it generate a discharge onto the neutral-ground conductors in the following order: metal body – heat sink – LED module – LED driver – neutral conductor. In this case, the failure affects mostly the LED module.



Advanced Prog & Basic Prog

Disano outdoor lighting products are divided into two ranges that provide the end user with different types of technology:

Advanced Prog (CLD PROG wiring): luminaires made to meet specific technological needs and designed, as standard, to integrate special functions to ensure high energy-savings, customization options and versatility of use in many applications (e.g. installation with dimmers or emergency supply). *These functions are already available on standard products and must be enabled on request (except for versions with LED COB).* These products do not require any modification to the entire system because the lamp only needs to be connected to mains power supply no pilot cable and/or control bus required.

Basic Prog (CLD BASIC wiring): luminaires developed to grant great flexibility of use thanks to the possibility to vary luminous flux intensity by changing the LED drive current.

Amenity and street lighting fixtures are equipped with the latest generation of programmable drivers that allow controlling different aspects and functions of a lighting system:

OPERATING MODE	DESCRIPTION	 ADVANCED PROG	 BASIC PROG
Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture	✓	✓
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)	✓	
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.	✓	
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC	✓	
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life	✓	
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)	✓	
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on	✓	
Setup via APP	The NFC technology allows users to set the different operating modes via an APP	✓	

Operating mode

LUMINOUS FLUX SETUP

With this function luminaires can adjust their **luminous flux to optimise design requirements** by varying LED drive current. A reduced luminous flux caused by a reduced current allows the LED to operate in better thermal conditions due to the reduction in power consumption.

NOTE: an increase of the luminous flux must always be assessed by our technical staff.

MONITORING

The driver records the **operating conditions throughout the entire service life** (operating hours, operating temperature, overvoltage). In the event of a product malfunction, the system will quickly and easily detect the problem.

CLO (COSTANT LIGHT OUTPUT)

The LED's luminous flux is **kept constant throughout the luminaire's entire lifetime**. The Constant Light Output (CLO) function compensates for the natural decay of the luminous flux by progressively increasing LED driver current. This results in a slow and constant increase in the luminaire's power consumption.

MAINS VOLTAGE REGULATION

This function allows the luminaire to be **dimmed when the mains voltage varies between 170 and 250 V AC**. It allows using LED luminaires with a dimmer that varies the mains voltage. It is used to dim the lights of older systems fitting traditional lamps. With the use of a software programme it is possible to set the maximum and minimum brightness levels that the luminaire must ensure when the mains voltage varies.

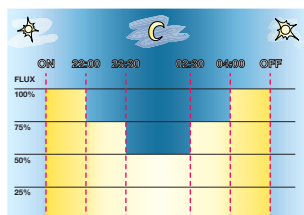
SETUP VIA APP

Luminous flux, Virtual Midnight, power regulation and CLO values can be reprogrammed in accordance with the product's specifications and certificates only after agreeing them with our offices.

VIRTUAL MIDNIGHT

To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system.

In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.

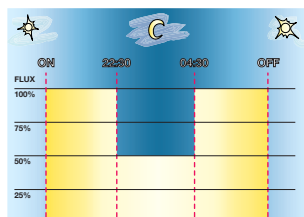


Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

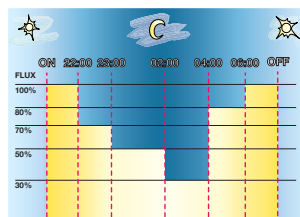
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.

Example of virtual midnight in 2 steps



Settings upon request	
Time	Flux
on ÷ 22:30	100%
22:30 ÷ 04:30	50%
04:30 ÷ off	100%

Example of virtual midnight in 5 steps



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:00	70%
23:00 ÷ 02:00	50%
02:00 ÷ 04:00	30%
04:00 ÷ 06:00	80%
06:00 ÷ off	100%

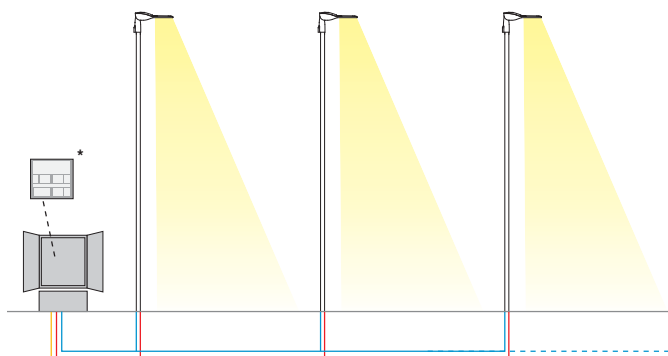
BROADCAST PROG

The Broadcast Prog function, **through a regular sequence of voltage interruptions**, allows modifying the driver programming of all the luminaires installed on the same power line by means of a **predefined sequence of ON/OFF cycles** that interrupt the phase without the need of additional cables. The Broadcast Prog function requires the use of an external device to be mounted in the luminaires' electrical supply panel. In addition to the **energy savings** that can be obtained with the "Virtual Midnight" function, there is the **possibility to vary the profile** of the entire system without having to use complex management systems

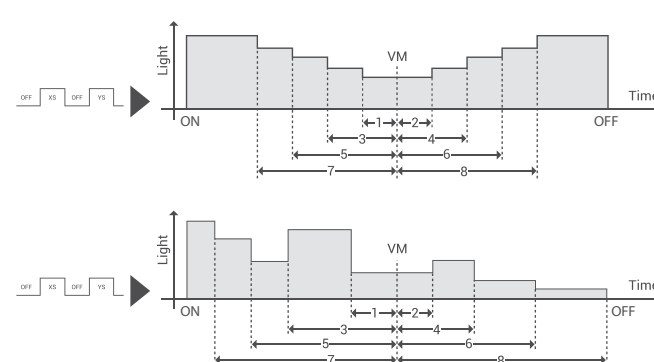
The external device to be used in the supply panel allows the automatic reconfiguration of the entire line. With the use of additional accessories, it is also possible to control and monitor the system remotely.

With this technology it is possible:

- enable/disable the "Virtual Midnight" function
- reconfigure the luminaire's drivers, modifying each one of the 8 steps (4 pre- and 4 post-virtual midnight) in terms of time and luminous flux regulation.



* device with integrated Broadcast Prog technology



configuration examples

Smart Solutions

DISANO illuminazione is capable of offering solutions that meet the needs of modern smart cities that use IoT technologies. This range is based on integrated wireless solutions that use different network protocols (BLE, Zigbee, 5G) and Zhaga and Nema standards for remote control, reporting, detection, and the possibility of CMS integration.

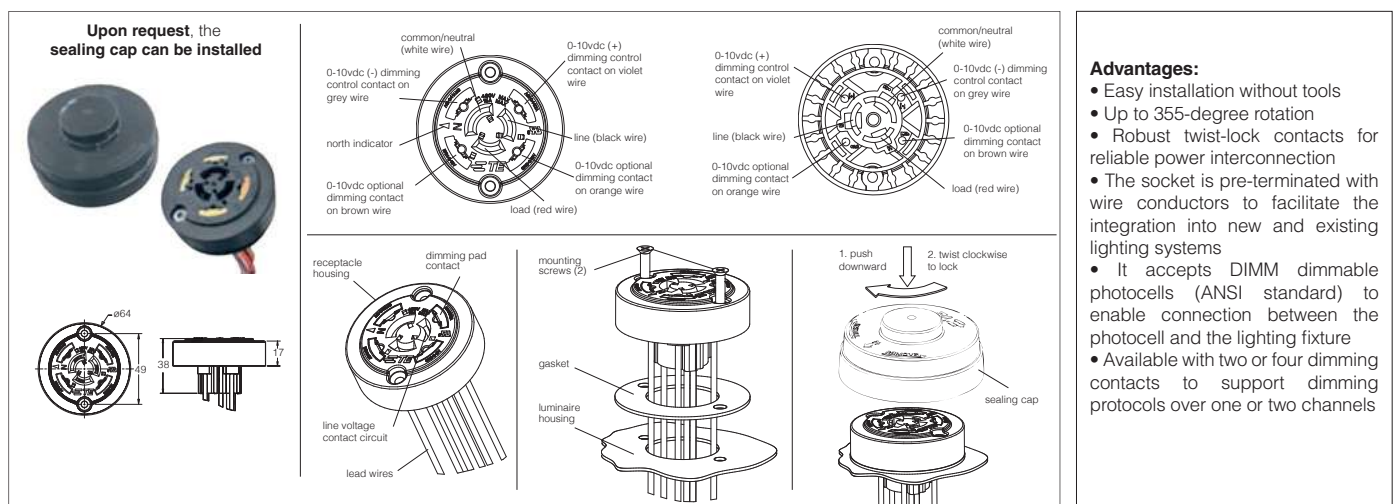
You can find the details of these products in the following pages and/or in the section of our catalogue dedicated to "Lighting Management Systems".

To monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket

Disano's luminaires with **subcode -40** come with the **Nema Socket** to enable the electrical and mechanical connection between the sensor and the light fixture. The socket is made in plastic material and is complete with a gasket to ensure perfect IP protection; moreover, thanks to its removable structure, it can be installed directly onto the luminaire's body (without accessing any internal parts) and **without using tools**, hence facilitating future maintenance; **upon request**, the sealing cap can be installed. The Nema Socket can be adapted to **5/7 poles**: 3 for the electrical connection, and the remaining 2/4 to carry 1-10V or DALI signals; it is also perfectly suited to integrate all "smart" devices for remote lighting control.

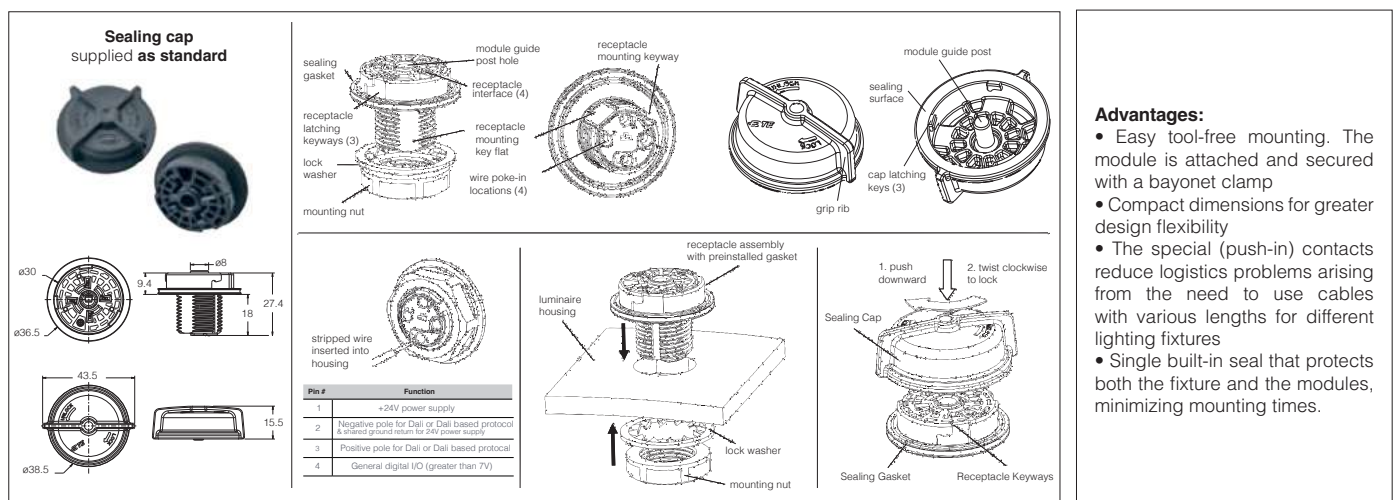
Applications: the **Nema Socket** is ideal for use in public or private street lights, car parks, cycle and pedestrian lanes, corridors within hospitals, schools and industrial plants and urban amenities and generally in any area where you need a "smart" control of lighting fixtures.



Zhaga Socket

Disano's fixtures with **subcode -0054** are compatible with the **Zhaga Socket** that ensures an electric and mechanical connection between the sensor and the luminaire, simplifying the complex architecture of street lighting installations and removing the need for accessory modules and cabling. The **Zhaga Socket** consists of a standard interface between the receptacle on the fixture and its basic components and cover that, together, form the housing of the control module. The built-in low friction seals, that can be coupled together, protect both the fixture and the module. UV-resistant and strong materials complete the features of this reliable connector.

Applications: the **Zhaga Socket** is ideal for use in public or private street lights, car parks, cycle and pedestrian lanes, corridors within hospitals, schools and industrial plants and urban amenities and generally in any area where you need a "smart" control of lighting fixtures.





What is a smart city? A smart city is a city where there is a better quality of life and where public spaces can help citizens achieve their full potential and move more freely, while saving time and respecting the surrounding environment. The intelligence of a «Smart City» is an intelligence that is distributed, shared horizontal and social that promotes the participation of citizens and the organization of the city towards a greater optimization of resources and results. Energy consumption, public resource use and time are all optimized. With the Web and the new technologies, access to services is easier and public spaces can be organized

to favour mobility, save time and turn our cities smarter.

Remote management systems make objects more intelligent and recognizable, so that they can communicate data and provide access to aggregated information. Thanks to a more efficient use of the Web, everything within a city (urban fittings, public buildings, monuments, etc.) can play an active role and become collectors and distributors of information about traffic, energy consumption, services and assistance to citizens, cultural and touristic attractions and much more.

The fixture can be equipped with a **control system which provides lighting managers with the ability to improve the performance of urban and street lighting** installations while saving costs by lowering energy usage, optimizing operation and reducing CO2 emissions. The system incorporates the latest technologies in power electronics, communications and IoT. This makes possible, among other features, an on/off scheduled switching, a dynamic programming of lighting levels, map-based visualizations, automatic alarm reports, real-time fixture monitoring and maintenance scheduling of every single luminaire of multiple installations at once. The system has a friendly and secure web-based user interface which can be operated anywhere and anytime from any web-connected device such as computers, smartphones and tablets providing real time and accurate control of the lighting infrastructure.



System Highlights

- Flexible solution
 - Valid for new installations as well as for lighting renovation
 - Autonomous system but integrable with other city services platforms
 - Valid worldwide
 - Compatible with most Smart City services platforms
- Values and revenues
 - Better lighting performance
 - Money savings
 - Energy costs reduction
 - Operation costs reduction
- Users
 - Municipalities and County Councils
 - Smart City platforms operators
 - Managers of large infrastructure
- Applications
 - Street and residential lighting (streets, roads)
 - Urban & architectural lighting (monuments, public spaces)
 - Large infrastructure lighting (airports, ports)
 - Large areas and sport lighting (car parks, stadiums)
 - Urban events lighting (celebrations, demonstrations)

System Architecture & Components

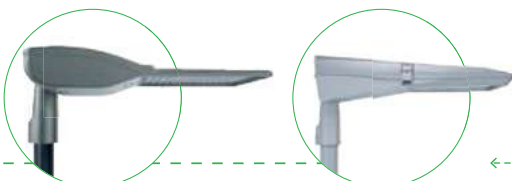
- System architecture
 - Smart power electronics: LED drivers
 - Wireless network hardware
 - RF Nodes and GSM Gateways
 - Cloud-based data acquisition and network management
 - Management software suite (Network & data management)
 - Web-based multi-device user friendly interface
- Technical aspects
 - Fully programmable electrical parameters and functionalities
 - Connectivity of sensors
 - Self-diagnosis, notification of alarms
 - Mains voltage and frequency monitoring
 - High efficiency
- Lighting network nodes
 - Multi-hop wireless mesh network
 - IP-based protocol, broad coverage
 - Automatic neighbour discovery, self-organization, ad hoc configuration
 - Extensibility, interoperability, open standards
 - Robust link, reliable and high-performance network
 - Additional sensor data acquisition (optional)
- Gateway
 - Mesh network concentrator
 - 2G/3G/LTE network gateway
 - Time and date precise synch
- Central host and database
 - Local or cloud hosting available
 - End-to-end secured system
 - Smart City and other horizontal management platforms integrability
 - Multi-level data interchange capabilities, app interfaces
 - Business Intelligence and data analytics
- Management Software Suite
 - Lighting configuration, management and maintenance
 - Easy installation, test capabilities
 - Data network management and configuration
 - Reports, statistics and data visualization tools
- Fast commissioning
 - Ease of installation
 - Assembling outside fitting
 - Remote configuration
 - Reliable, outdoor-proof
- Accuracy
 - GPS accurate location
 - Point-to-point management
 - Real-time operation

Smart City Lighting

- Flexible and avant-garde lighting
 - Programmable lighting
 - Dynamic lighting
 - Reactive to events
 - Makes possible a human centric lighting
 - Increases citizen satisfaction
 - Helps to improve safety on streets
 - Compatible with most existing Smart City & urban services management platforms and easily adaptable thanks to its open architecture
- Environmental sustainability
 - Energy savings
 - Reduction of CO2 footprint
 - Lower lighting pollution
- Data-enabled lighting
 - IoT technology enables scalable, site-based or cloud-based street lights connectivity through a robust, self-healing, wireless mesh network

User Friendly Web-based Interface

- Main functionalities
 - Easy lighting levels & timing configuration
 - Creation of customized lighting schedules
 - Energy consumption monitoring
 - Power supply monitoring
 - Alarms and events reporting
 - Operation time recording
 - Geolocation and mapping of luminaires (multiple map choice)
 - Easy allocation of luminaires by town, street, coordinates, type
 - Maintenance planning
 - Multiple users administration
- Optimum lighting maintenance
 - Possibility of preventive maintenance
 - Optimization of reactive maintenance
- Privacy and security commitment
 - Encrypted communications
 - Safe communications exchange through highest encryption levels
 - Database access security
 - Secure hosting
 - Cloud protection and data confidentiality
 - Safe access with authentication
 - Highest protection against unauthorized access



Power line carrier remote control systems

A special control system can be inserted inside the lighting fixture or into the lamp pole to monitor the product's operating parameters (Ordered with **sub-code -0078**). This control system is electrically connected to the fixture through a 1-10Vdc or PWM output of the fixture's transformer. This type of remote control system is called "point-to-point". A "point-to-point" system is a set of electrical equipment used to monitor, programme and control individual LED lighting fixtures. This system is based on the power line carrier (PLC) technology that enables a digital two-way communication between the module installed in the fixture and the control system. The control system is located inside the control panel. The digital data are adjusted to the mains voltage, so no BUS or extra conductors are needed.

Thanks to this "point-to-point" system, it is possible, for example, to monitor and save the fixture's electrical parameters and, based on these settings, generate failures or trigger alarms, turn off/on or adjust the fixture's brightness. This is done through either manual or pre-set commands. The communication between the control centre (PC) and the "point-to-point" system occurs through a control panel using normal communication channels (GSM-GPRS-network LAN etc.). The

commands sent from the control centre are conveyed by the control module located inside the panel through the power line carriers which dispatch the commands to the individual fixtures and vice versa. The management module can control up to 990 lights and can reach a distance of 1.5 km. Beyond this distance, an extra module can be inserted into the fixture to serve as a signal repeater. The control module has a series of pre-set light configurations for light dimming. However, each controller inserted into a fixture saves several information regarding the cycle that should be used for that specific fixture. This cycle, which consists of up to 5 steps, is started every day at pre-set hours, and serves the purpose to define the application time and the action to be performed. The "point-to-point" module is independent from the cycle management of its corresponding fixture, and will work even if the communication from the control module is lost.

These controls, settings and data are all managed through a software programme that regularly downloads all the information required to manage the systems and check for any failures.

Technical characteristics of control module

(to be inserted inside the control panel)

Power: 230Vac 50/60Hz (about 21mA at 230V, 44mA Max).
 Container: degree of protection IP20, bar connection DIN 9 modules.
 Clock calendar: maximum error of +/- 4min/year in the 0-70°C range.
 Memory: nearly 20k for a system with a maximum number of controlled points (990).
 Operating temperature: ambient temperature -20°C +55°C.
 Without power supply: no loss of data, 3 days of clock life.
 Input sections: configured as 2 in 24Vdc.

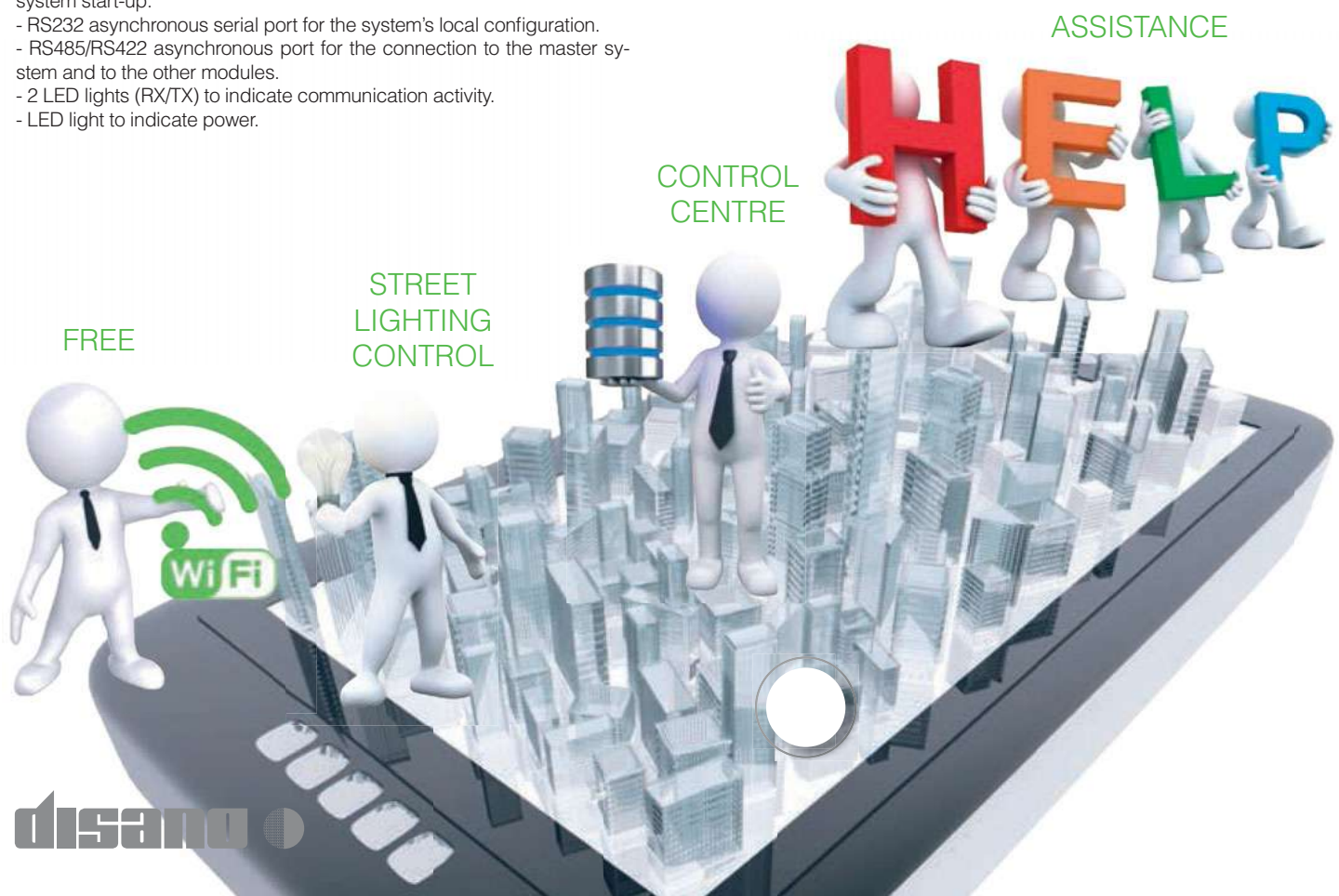
Standard supply:

- clock calendar from PC control centre.
- all the settings made by the modules are saved.
- sampling: up to 3 for each night, of which one is fixed after 7 min. from system start-up.
- RS232 asynchronous serial port for the system's local configuration.
- RS485/RS422 asynchronous port for the connection to the master system and to the other modules.
- 2 LED lights (RX/TX) to indicate communication activity.
- LED light to indicate power.

Technical characteristics of step-to-step controller

(to be inserted inside the fixture)

Power: 150 - 254Vac 50/60Hz self-powered.
 Container: plastic with IP20 or IP66 degree of protection.
 Connections: IP66 version with cables FROR-Npi 2x2.5 mm² L=20cm
 Version IP20 with clamps; installed in series between power supply and fixture housing.
 Internal consumption: min. 0.7 VA
 Operating temperature: ambient temperature -20°C +65°C.
 Communication: ASK power line carrier
 Baud rate: 1000
 Regulatory framework: EN50065-1, EN50178
 Class of insulation: Class 2
 Output: 1-10 Vdc; PWM; DALI



Regulations regarding street lighting and light quality

To improve lighting output, save energy: the constantly growing amount of information regarding the possibilities and opportunities offered by the use of LED sources in street lighting led DISANO to provide clarifications in this short text where it explains why Disano fixtures are suitable for these kinds of installations, while complying with street lighting standards (EN13201 and UNI11248) and Regional regulations required to fight lighting pollution and save energy costs.

The luminance levels used for street lighting fall within the levels ranging between 0.01cd/m² and 3.00cd/m².

0,01 cd/m ²	3,00 cd/m ²
Star-studded sky	Street lighting Daylight or indoor lighting

Numerous studies and trials have tested drivers' reaction times both in the presence of fixed obstacles and on streets illuminated with different light sources. On streets with luminance levels ranging between 0.01 – 3.00, tests proved that reaction time is remarkably slower when white light bulbs are used. This means that, in order to have the same reaction time, it is necessary to have higher luminance levels when sodium lamps are used and lower levels if metal iodide or LED lamps are used. Moreover, with low luminance levels and light sources emitting predominantly blue/green lights, there are 7% fewer accidents per km compared to predominantly yellow/red lights. (Source: Anie) The UNI11248 standard introduces new safety parameters. One of these parameters concerns the quality of light. The UNI standard

states that when sources with a colour rendering below 30 are used, the lighting category of the reference road must be increased. In other words, it is necessary to increase the amount of light so that the lighting system is compliant with requirements.

Sources with a colour rendering above 60, instead, must reduce the reference road category and therefore the required luminance levels. This involves that a road's lighting system varies depending on the colour rendering of the lighting sources being installed: if sources have high colour renderings then the average luminance levels imposed by the Standard will be lower, therefore reducing the installed power

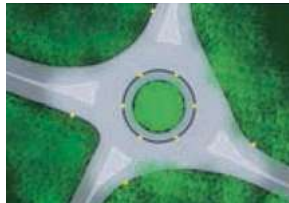
Light pollution

LEDs, just like any other light source, require optics or lenses to orient the light beam and prevent it from directing light upwards, and meeting anti light pollution requirements. Disano has designed a series of reflectors and optics that can effectively prevent light pollution. These reflectors orient the light beam in such a way as to obtain photometric distributions, which can be installed not only in road lighting systems, but in many other applications, even improving performance if compared with the optics of traditional lamps. Each single LED is controlled and equipped with a reflector that models the light beam, optimizing performance and obtaining sharp light distribution. Optics guarantee performance rates ranging from 80% to 95%, which are much higher than the values compared to the reflectors of discharge lamps.

Installation examples for LED street lighting

Illumination of roundabouts

Installation of products along the inner perimeter of the roundabout and along the nearby streets.

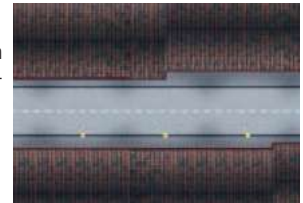


Installation examples

Mounting height (m)	Road width (m)	Distance between poles	Average luminance in lux	Minimum luminance in lux
8	7	6	30lux	50

Local urban roads

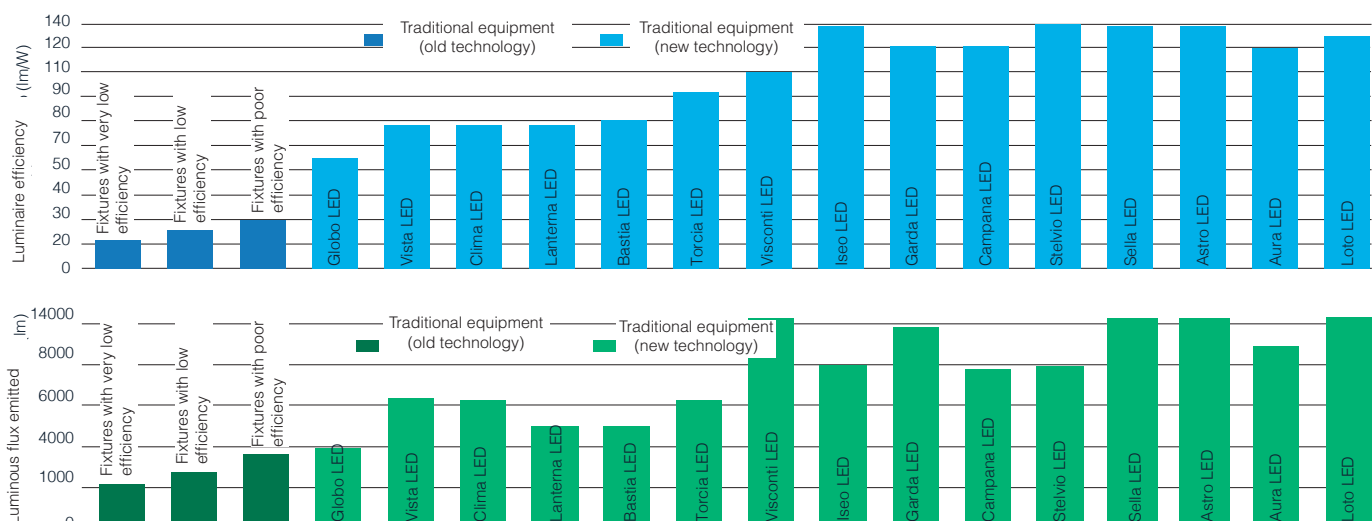
With vehicle traffic and maximum speed limit of 50Km/h, excellent luminance uniformity.



District urban roads

Mounting height (m)	Road width (m)	Distance between poles	Average luminance (cd/m ²)	Average uniformity	Longitudinal uniformity
6	6	23	0,80	0,5	0,7

LED technology and traditional devices: efficiency and luminous flux compared





MINICOMFORT



COMFORT



COMFORTLIGHT



LED PANEL



Minicomfort	p. 4
Comfort	p. 10
Comfortlight	p. 11
LED Panel	p. 12

CRETA



RODI



COMFORTSQUARE



IBIS



Creta	p. 16
Rodi	p. 18
Comfortsquare	p. 24
Ibis	p. 28

HERON



SUPERCOMFORT



GABBIANO



COMPACT



Heron	p. 30
Supercomfort	p. 32
Gabbiano	p. 33
Compact Dark	p. 34
Compact	p. 36

COMFORT PANEL



ERMETICA



HEALTH



DISANLENS

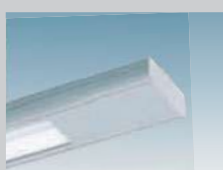


Comfort Panel	p. 39
Ermetica	p. 40
Health	p. 41
Disanlens	p. 42

CHANNEL



COMETA



OBLÒ 2.0 - GLOBO 2.0



COMPACT



Channel	p. 46
Cometa	p. 48
Oblò 2.0	p. 50
Globo 2.0	p. 52
Compact	p. 53

RIQUADRO - CUBO - ORMA



RIGO - CILINDRO



SAFETY

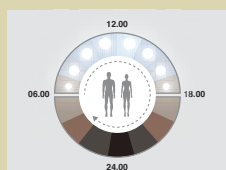


SAFETY FLAG



Riquadro / Cubo / Orma	p. 54
Cilindro / Rigo	p. 55
Safety	p. 56
Safety Flag	p. 57

HCL



COMFORTSQUARE



COMFORT PANEL



COMPACT DARK



HCL	p. 58
Comfortsquare	p. 60
Comfort Panel	p. 62
Compact Dark	p. 64



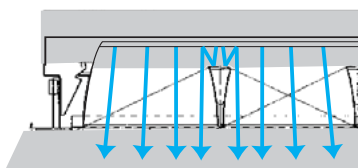
GENERAL CHARACTERISTICS

Housing: in galvanised steel sheet panels, pre-coated with a polyester resin.

Dark light louvre: double parabolic louvres, in high-gloss 99.99 aluminium, anti-glare and anti-iridescence, very low luminance, PVD treatment to improve luminous efficiency.

Equipment: supplied without brackets: for non-surface mounted versions, use bracket acc. 326. Driver can work also with **DC198-264V** so that the ceiling lamp can be used as an emergency fixture with centralized power supply

LED: power factor: 0,95.
Luminous flux maintenance 70%: 80.000h (L70B20).
Colour temperature: 4000 K
(Upon request: 3000K)



Optical with flow recovery

OTHER CHARACTERISTICS

**Easy connection**

Equipped with hinged door and quick clamping mechanism.

**Protective film**

Supplied with a protective film to prevent the fixtures from accumulating dirt and to keep the optics clear and ensure perfect performance.



DIMM Standard version **CLD D-D (DALI)** wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

OTHER INFORMATION



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare.** The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



Presence detector: lights turn on when they detect movement and turn off when they are no longer needed. This offers further savings. Order with subcode -0092.



DIMM Version **DIMM 1-10V** wiring with **subcode -12.**



PUSH Version **CLD D-D (PUSH)** wiring with **subcode -0045:** it is possible to create lighting systems that can be easily switched ON/OFF and dimmed at low costs using conventional mains voltage push-buttons for lighting control.



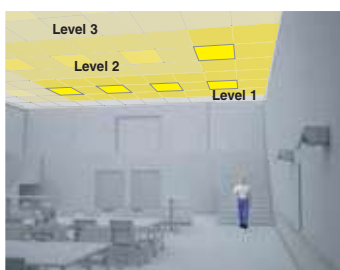
Version **CLD EC** wiring with **subcode -0050:** permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.

Upon request "Smart sensor":

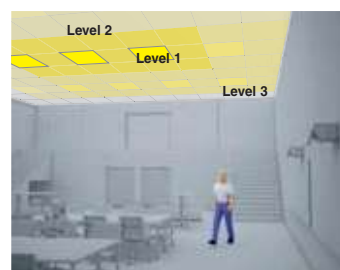
Smart sensor is an energy efficiency controller for LED panels and dimmer fittings. It uses 1-10V DC dimming technology to control all connected lighting fixtures. Smart sensor also features occupancy sensing and daylight harvesting components and programming units to ensure energy efficiency and lower power consumption.

At the heart of the system is the sensor node, which is integrated into each luminaire during assembly. Each sensor node contains a motion sensor, infrared transmitter, infrared receiver, ambient light sensor and intelligent microprocessor.

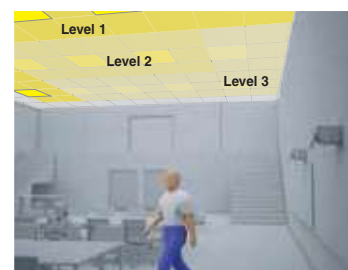
Smart sensor integrated. Remote control to purchase separately.

**How it works. 01**

When a sensor node detects occupancy of a space, it turns on its luminaire to a predetermined light level (e.g. 100%). It simultaneously communicates this occupancy to its neighbouring luminaires using a level 1 proximity-limited infrared signal.

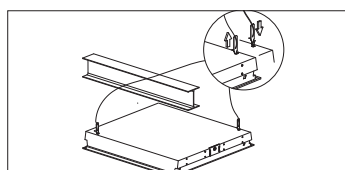
**02**

On receipt of the **level 1** signal, the neighbouring sensor node switches its own luminaire to a predetermined light level, which is appropriate to the occupant standing in that space (e.g. 80% brightness), and simultaneously relays a **level 2** signal to its own neighbours.

**03**

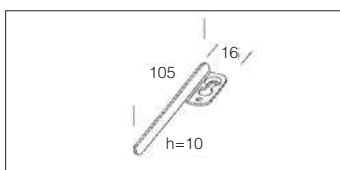
This communication propagates rapidly throughout the floor with each sensor node receiving a signal indicating how close a occupant is to it, adjusting its light level accordingly (**level 3**)

ACCESSORIES

**acc. 320 safety cord**

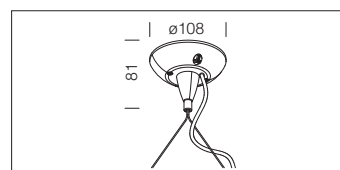
998004-00

Steel safety cord.

**acc. 326 adjustable bracket**

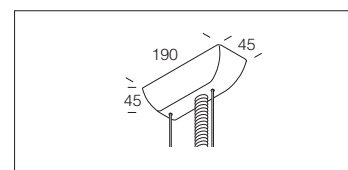
galvanized 998059-00

In zinc plated steel. 4-pc set to be used when art. 841 is not contact mounted.

**acc. 2519 powered suspension**

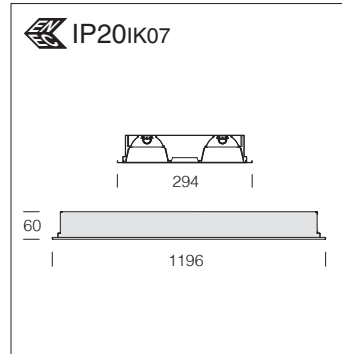
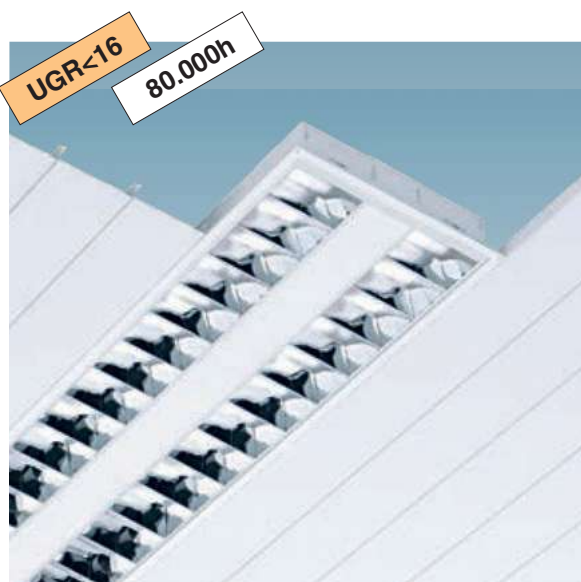
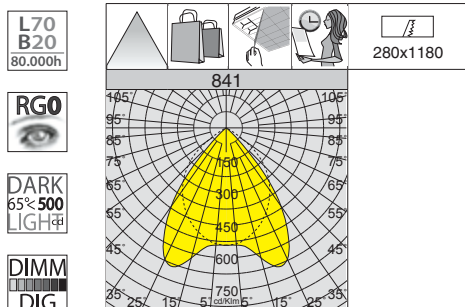
white 993909-2122

Suspension supplied with steel wire, 1.75 m long with millimetric adjustment and power cable. Max load 20 kg. **5 poles.**

**acc. 2608 powered suspension**

white 994617-00

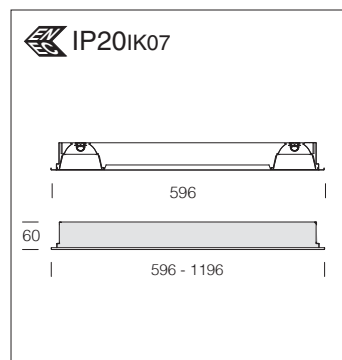
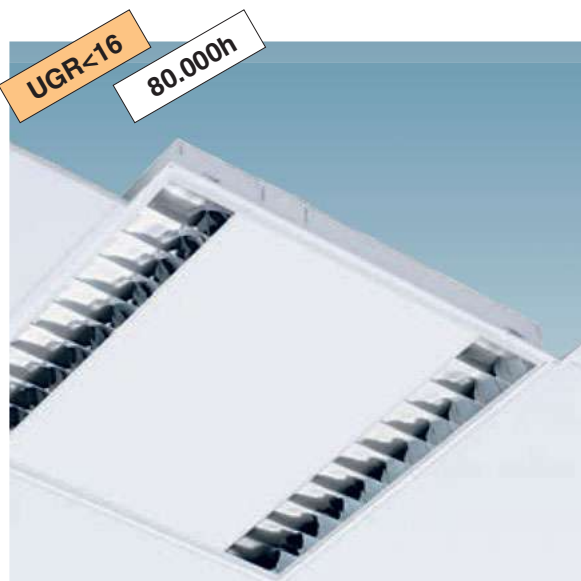
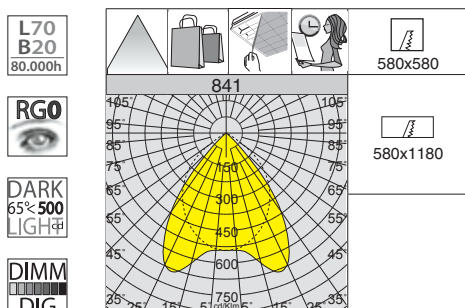
Nylon cover and steel brackets. With steel wire Ø1,5mm; L=1,5m - 30Kg, and millimetric adjustment.



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.
- **CLD D-D (PUSH)** wiring with sub-code -0045.

841 Minicomfort							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED 2x	white	2.50	1196	153533-00	153533-0041	37	4000K - 4093lm - CRI≥80

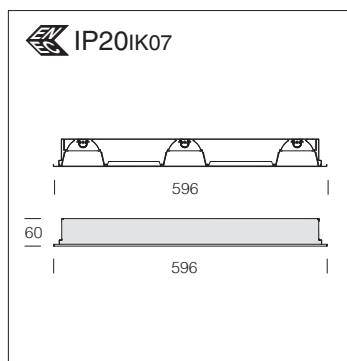


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841 Minicomfort							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED 2x	white	2,50	596	153536-00	153536-0041	19	4000K - 2046lm - CRI≥80

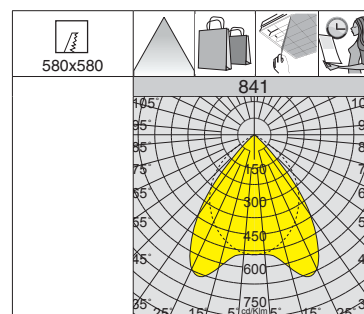
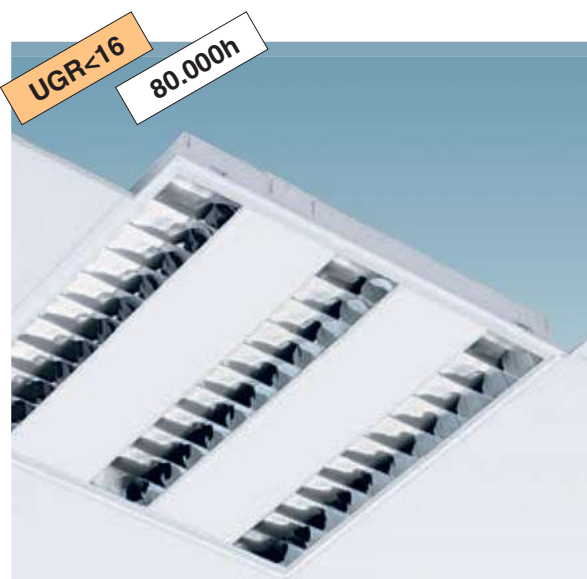
841 Minicomfort							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED 2+2	white	5.00	1196	153537-00	153537-0041	37	4000K - 4093lm - CRI≥80



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.

- **CLD D-D (PUSH)** wiring with sub-code -0045.



L70
B20
80.000h

RG0

DARK
65%
500
LIGHT

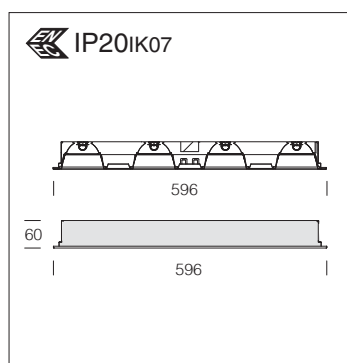
DIMM
DIG

EM
EC

LOW
FLICKER

UGR
<16

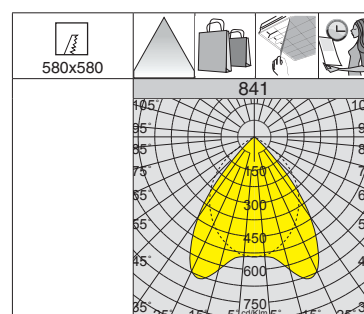
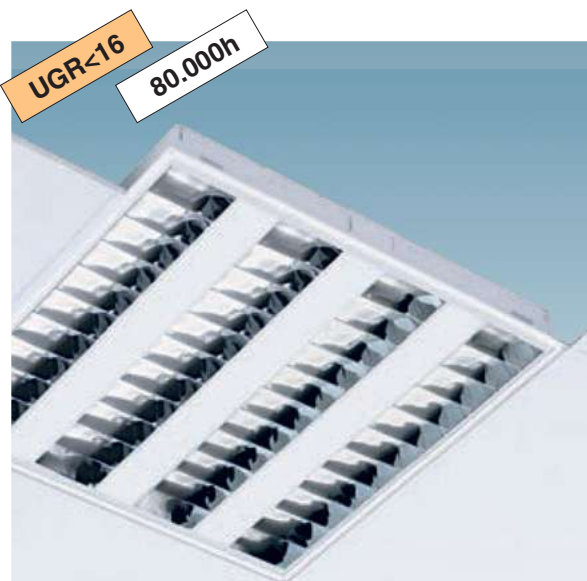
841 Minicomfort						
wattage	colour	weight	L	CLD	CLD D-D (DALI)	W tot
LED 3x	white	3.30	596	code	code	28
				153534-00	153534-0041	
				153538-00	153538-0041	
LUMEN OUTPUT (tq= 25 °C)						
K - ølm - CRI						
4000K - 3069lm - CRI≥80						
4000K - 2925lm - CRI 90						



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.

- **CLD D-D (PUSH)** wiring with sub-code -0045.



L70
B20
80.000h

RG0

DARK
65%
500
LIGHT

DIMM
DIG

EM
EC

LOW
FLICKER

UGR
<16

841 Minicomfort						
wattage	colour	weight	L	CLD	CLD D-D (DALI)	W tot
LED 4x	white	3.50	596	code	code	37
				153535-00	153535-0041	
				153539-00	153539-0041	
LUMEN OUTPUT (tq= 25 °C)						
K - ølm - CRI						
4000K - 4093lm - CRI≥80						
4000K - 3901lm - CRI 90						

L70
B20
80.000h

RG0

DARK
65% 500
LIGHT

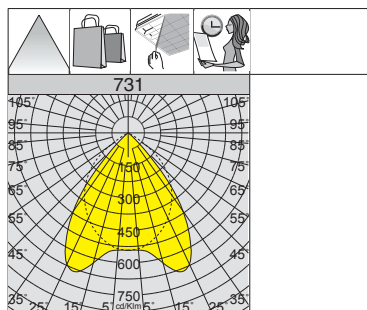
DIMM
DIG

EM
EC

LOW
FLICKER



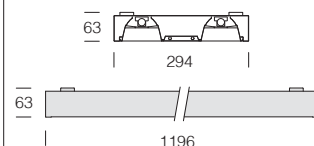
UGR
<16



UGR<16
80.000h



IP20IK07



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.
- **CLD D-D (PUSH)** wiring with sub-code -0045.

731 Minicomfort							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED 2x	white	2.50	1196	143533-00	143533-0041	37	4000K - 4093lm - CRI≥80

L70
B20
80.000h

RG0

DARK
65% 500
LIGHT

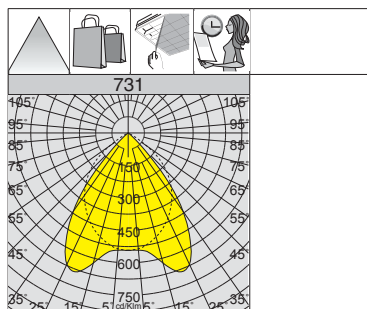
DIMM
DIG

EM
EC

LOW
FLICKER



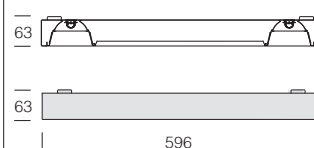
UGR
<16



UGR<16
80.000h



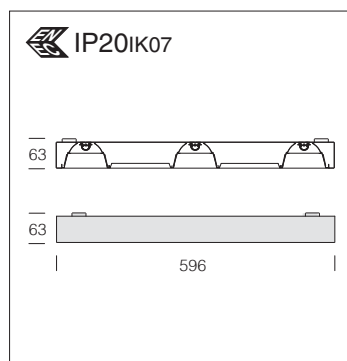
IP20IK07



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.
- **CLD D-D (PUSH)** wiring with sub-code -0045.

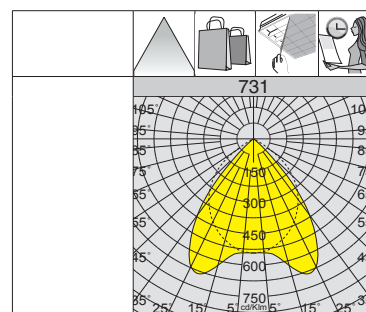
731 Minicomfort							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED 2x	white	3.50	596	143536-00	143536-0041	19	4000K - 2046lm - CRI≥80



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.

- **CLD D-D (PUSH)** wiring with sub-code -0045.



L70
B20
80.000h

RG0

DARK
65°<500
LIGH

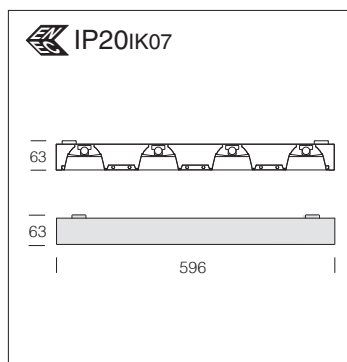
DIMM
DIG

EM
EC

LOW
FLICKER

UGR
<16

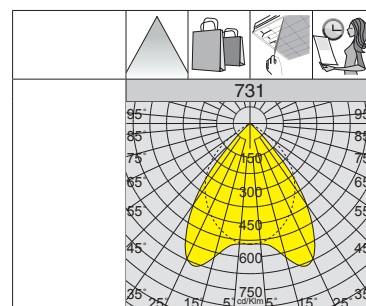
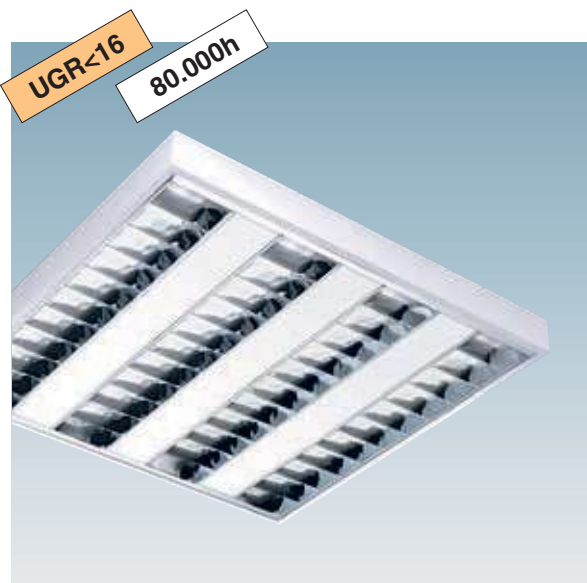
731 Minicomfort						
wattage	colour	weight	L	CLD	CLD D-D (DALI)	W tot
LED 3x	white	3.50	596	code	code	28
				143534-00	143534-0041	
				143538-00	143538-0041	
LUMEN OUTPUT (tq= 25 °C)						
						K - ølm - CRI
						4000K - 3069lm - CRI≥80
						4000K - 2925lm - CRI 90



Upon request versions with:

- emergency wiring with centralized power supply **CLD EC** with sub-code -0050.

- **CLD D-D (PUSH)** wiring with sub-code -0045.



L70
B20
80.000h

RG0

DARK
65°<500
LIGH

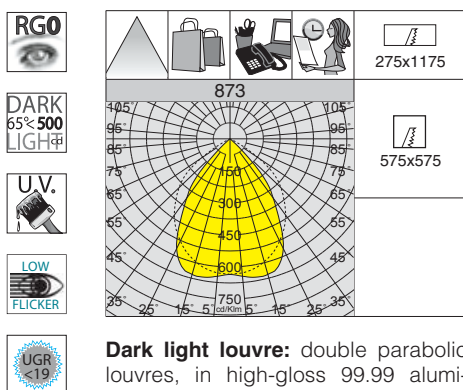
DIMM
DIG

EM
EC

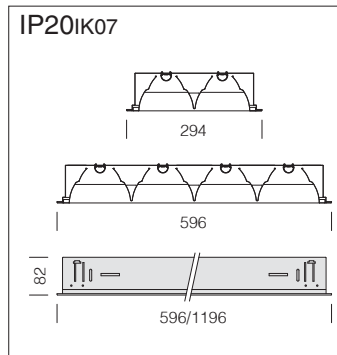
LOW
FLICKER

UGR
<16

731 Minicomfort						
wattage	colour	weight	L	CLD	CLD D-D (DALI)	W tot
LED 4x	white	3.50	596	code	code	37
				143535-00	143535-0041	
LED 4x	white	3.50	596	143539-00	143539-0041	
LUMEN OUTPUT (tq= 25 °C)						
						K - ølm - CRI
						4000K - 4093lm - CRI≥80
						4000K - 3901lm - CRI 90



Dark light louvre: double parabolic louvres, in high-gloss 99.99 aluminium, anti-glare and anti-iridescence, very low luminance, PVD treatment to improve luminous efficiency.



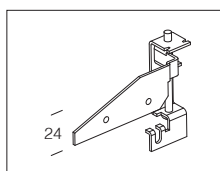
GENERAL CHARACTERISTICS

Housing: in steel sheet.

Equipment: Snap fastening optics, which remain attached by safety cords. Supplied without brackets for contact mounting on the cross T structure. When not contact mounted, use brackets, acc. 901.

LED: power factor ≥ 0.9
Luminous flux maintenance 70%
80.000h (L70B20).
Photobiological safety class:
Exempt group.

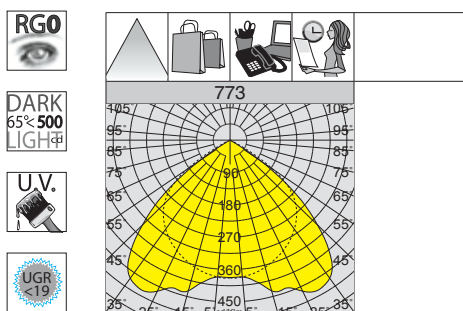
873 Comfort						
		CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot K - ølm - CRI
LED 2x	white	4.10	1196	151050-00	151050-07	37 4000K - 3674lm - CRI \geq 80
LED 4x		3.50	596	151052-00	151052-07	



acc. 901 adjustable bracket

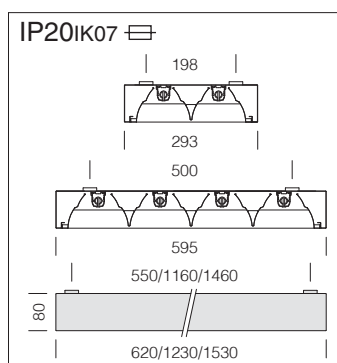
galvanized 998026-00

In zinc plated steel. 4-pc set to be used when the fixture is not contact mounted.



773 Comfort complete with LED TUBES

- Life: **40.000h**
- No maintenance costs
- Instant start-up



GENERAL CHARACTERISTICS

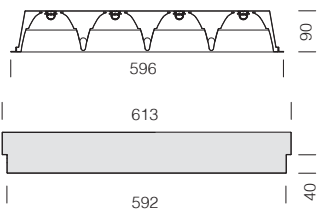
Housing: in steel sheet.

Equipment: Snap fastening optics, which remain attached by safety cords and protection fuse.

LED: power factor ≥ 0.9
Luminous flux maintenance 70%
40.000h (L70B50).
• Glass tube with G13 connector.
• Eco-friendly: no U.V. and I.R. emission.

773 Comfort - with LED TUBES						
		CLD-F		CLD E	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot K - ølm - CRI
LED 2x	white	4.60	1230	141070-00	141070-07	32 4000K - 2479lm - CRI 80
LED 2x		5.50	1530	141071-00	141071-07	
LED 4x		4.40	620	141072-00	141072-07	

IP20IK07



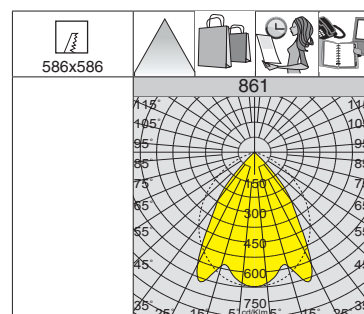
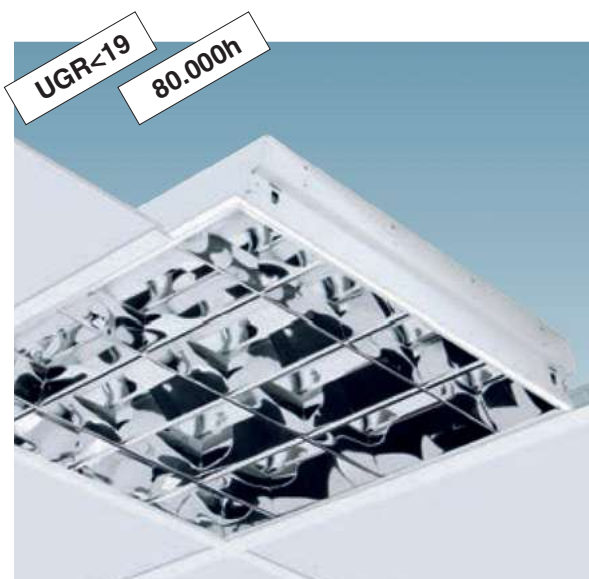
GENERAL CHARACTERISTICS

Housing: in galvanised steel sheet panels, pre-coated with polyester resin.

Equipment: hinged door and quick clamping mechanism. With protective film on fixture and baffle louver.

Mounting: recessed for contact mounting on the cross T structure max. 38mm.

LED: Power factor: 0,95.
Luminous flux maintenance 70% 80.000h (L70B20).
Colour temperature: 4000K (upon request: 3000K or 6500K).

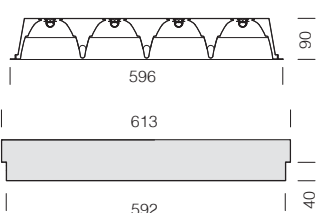


Dark light louver: dark light double parabolic louvers, lengthwise and crosswise in high-gloss, plated aluminium, anti-glare and anti-iridescence, very low luminance 65° 99.85.



861 Comfortlight						
CLD				LUMEN OUTPUT (tq= 25 °C)		
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED 4x	white	3.50	596	150459-00	37	4000K - 3990lm - CRI≥80

IP20IK07



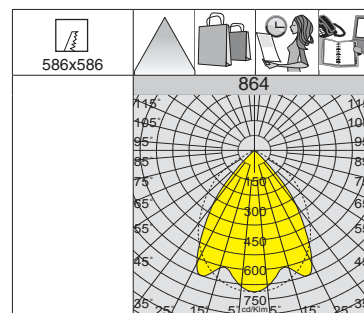
GENERAL CHARACTERISTICS

Housing: in galvanised steel sheet panels, pre-coated with polyester resin.

Equipment: hinged door and quick clamping mechanism. With protective film on fixture and baffle louver.

Mounting: recessed for contact mounting on the cross T structure max. 38mm.

LED: Power factor: 0,95.
Luminous flux maintenance 70% 80.000h (L70B20).
Colour temperature: 4000K (upon request: 3000K or 6500K).

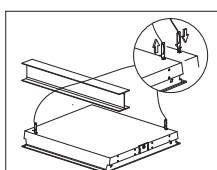


Dark light louver: dark light double parabolic louvers, lengthwise and crosswise in high-gloss, plated aluminium, anti-glare and anti-iridescence, very low luminance 65° 99.85.



864 Comfortlight						
CLD				LUMEN OUTPUT (tq= 25 °C)		
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED 4x	white	3.50	596	150460-00	37	4000K - 3620lm - CRI≥80

acc. 320 safety cord
998004-00
Steel safety cord.



GENERAL CHARACTERISTICS

Housing and frame: housing in galvanised steel sheet, and frame in aluminium.

Inner slab: in PMMA.

Diffuser: in prismatic engineering plastic with high thermal transmittance.

UGR glare index: UGR<19 (in any situation). - EN 12464.

Rapid wiring connection: the fixture does not need to be opened, it can be easily embedded into a ceiling, and almost no need for maintenance.

LED: Power factor: 0,95
Luminous flux maintenance 80%: 50.000h (L80B20).
Photobiological safety class: exempt group



Product with a very low flicker; uniform light for greater eye protection.

OTHER CHARACTERISTICS



Construction quality is an important factor for the product's aesthetics and performance, turning into a key element to ensure reliability over time. In the case of Disano's **LED Panel**, the slab is made in top-notch material, **PMMA** (poly methyl methacrylate), a polymer that keeps its characteristics unaltered in time and prevents the lens from yellowing. Disano has produced **LED Panel** with materials that ensure long lasting operation to save its original technical characteristics: 80% lumen maintenance for **50000h** (L80B20), perfect colour rendering (**CRI≥80 or CRI>90**), no glare (**UGR<19**) and certified low flicker level.

OTHER INFORMATION

DIMM Standard version **CLD D-D (DALI)** wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Version **CLD D-D (PUSH)** wiring with **subcode -0045:** it is possible to create lighting systems that can be easily switched ON/OFF and dimmed at low costs using conventional mains voltage push-buttons for lighting control.

CEILING MOUNTED INSTALLATION WITH FRAME FOR LED PANEL ART. 840 - 842 - 844

**acc. 595 frame 600x600 h45**

white	998031-00
-------	-----------

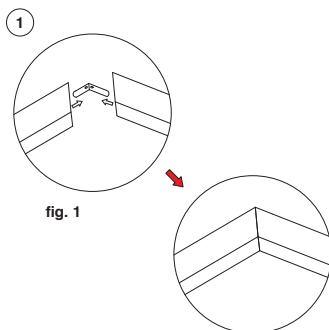
Frame in white-coated aluminium; to be used for ceiling installation of LED Panel art. 840 - 842 - 844.

**acc. 595 frame 1200x300 h45**

white	998032-00
-------	-----------

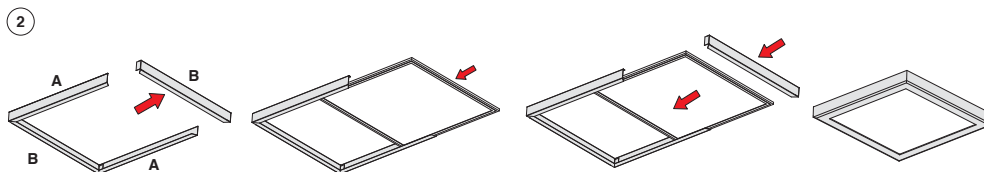
Frame in white-coated aluminium; to be used for ceiling installation of LED Panel R art. 840 - 842.

1) Assembly the frame according to the following illustration (**fig.1**)

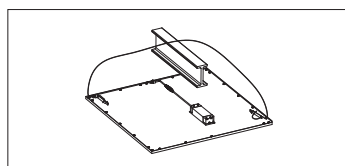


2) Installation

- Drill 4 holes at marking position with expansion screws and self-tapping screws (not screw too tight).
- Install the frame on the roof.
- Move and fix the ceiling frame (lift to right, or right to left) through hardy hole.
- Tighten self-tapping screws.
- Open the frame **B** on one side, insert the panel into the frame, then seal the frame with tightening screws.

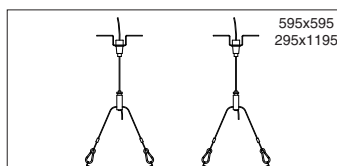


ACCESSORIES

**acc. 320 safety cord**

998004-00

Steel safety cord.

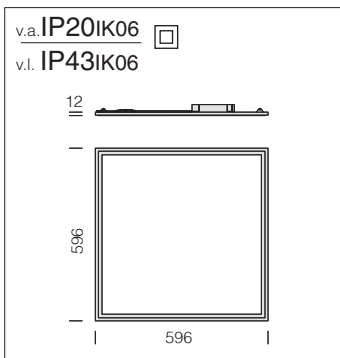


595x595
295x1195

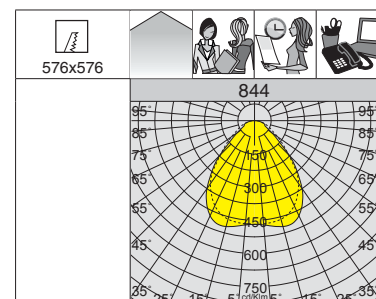
acc. 2520 simple suspension

994631-00

Suspension supplied with steel wire, and millimetric adjustment. Bag containing 2 pieces.



Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.



L80
B20
50.000h

RG0

DIMM
DIG

3000K

4000K

LOW
FLICKER

UGR
<19

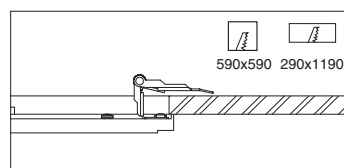
844 LED Panel HE

		CLD		CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	code		K - ølm - CRI
LED	white	3.00	150225-00	150225-0041	27	4000K - 3420lm - CRI≥80

acc. 907 springs

998038-00

Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.

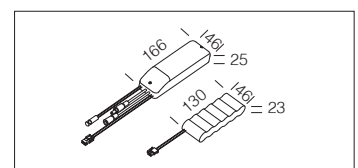


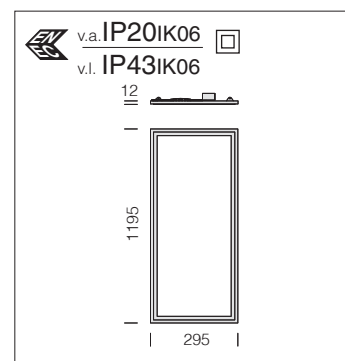
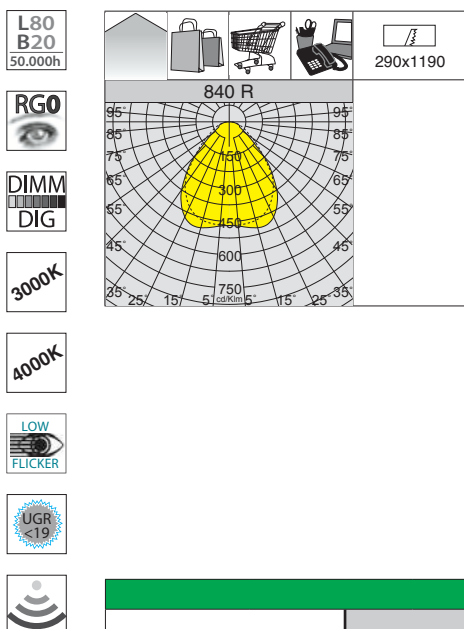
acc. 600 EM power kit

1h 986604-00

3h 986604-31

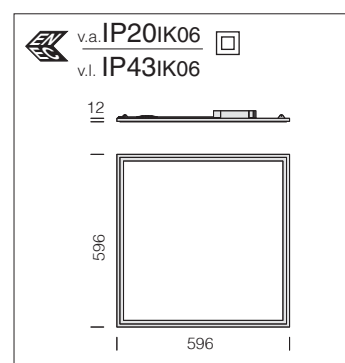
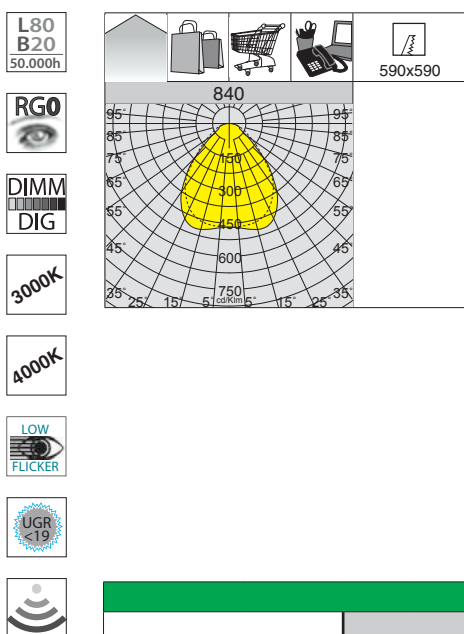
EM (emergency) lamp power kit complete with connectors.





Upon request version with:
• **CLD D-D (PUSH)** wiring with sub-code -0045.

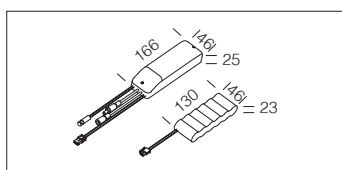
840 LED Panel R						
wattage	colour	weight	CLD	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	white	4.00	150209-00	150209-0041	33	4000K - 3318lm - CRI>90
			150209-39			3000K - 3086lm - CRI>90



Upon request version with:
• **CLD D-D (PUSH)** wiring with sub-code -0045.

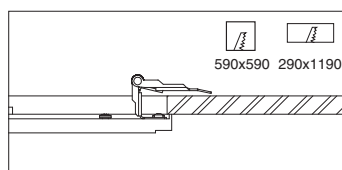
* art. 150211-00: no UGR<19

840 LED Panel						
wattage	colour	weight	CLD	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	white	3.00	150208-00	150208-0041	33	4000K - 3318lm - CRI>90
			150208-39			3000K - 3086lm - CRI>90
LED*	white	3.00	150211-00		47	4000K - 4250lm - CRI>90



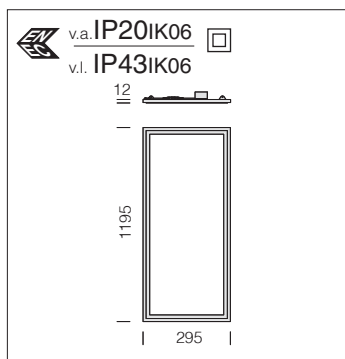
acc. 600 EM power kit	
1h	986604-00
3h	986604-31

EM (emergency) lamp power kit complete with connectors.

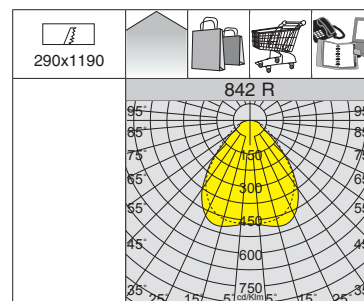


acc. 907 springs	
	998038-00

Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.



Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.



L80
B20
50,000h

RG0

DIMM
DIG

3000K

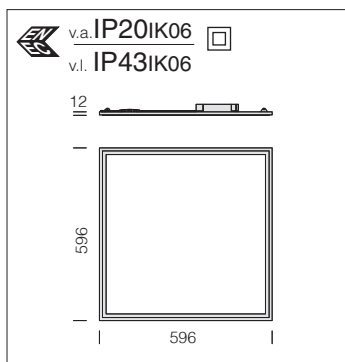
4000K

LOW
FLICKER

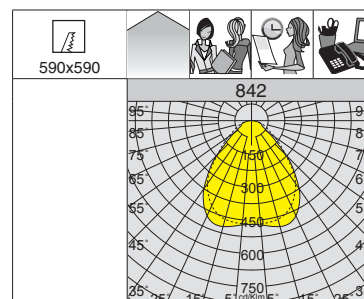
UGR
<19



842 LED Panel R						
wattage	colour	weight	CLD code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	white	4.00	150206-00	150206-0041	33	4000K - 3600lm - CRI≥80
			150206-39			3000K - 3348lm - CRI≥80



Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.



L80
B20
50,000h

RG0

DIMM
DIG

3000K

4000K

LOW
FLICKER

UGR
<19

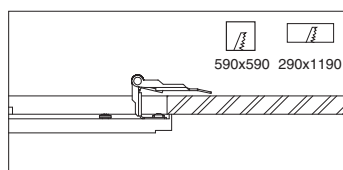


842 LED Panel						
wattage	colour	weight	CLD code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	white	3.00	150205-00	150205-0041	33	4000K - 3600lm - CRI≥80
			150205-39			3000K - 3348lm - CRI≥80

acc. 907 springs

998038-00

Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.

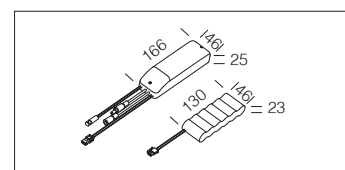


acc. 600 EM power kit

1h 986604-00

3h 986604-31

EM (emergency) lamp power kit complete with connectors.



GENERAL CHARACTERISTICS

Creta is the new recessed LED **backlighting** ceiling fixture that opens up a whole different way of thinking about artificial lighting; it offers a very bright and diffused lighting, while keeping energy consumptions extremely low and setting itself as the ideal solution for general and functional lighting applications

Housing and frame: housing in galvanised steel sheet, and frame in aluminium, contact mounting on the cross T structure.

Optics: secondary lenses in PMMA with high transparency and non-yellowing properties.

UGR glare index: UGR<17 (in any situation) - EN 12464.

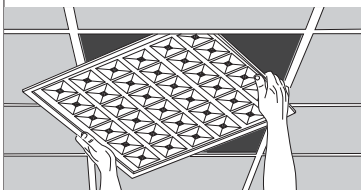
Wiring: rapid wiring connection, the fixture does not need to be opened.

LED: Luminous flux maintenance 80%; 50.000h (L80B20).
Power factor ≥ 0.95 .
Photobiological safety class: exempt group.

OTHER CHARACTERISTICS



Fixture with a thin design and lenticular optics, ideal in environments that require a controlled lighting distribution and maximum visual comfort (UGR<17).



Rapid wiring connection, the fixture does not need to be opened, it can be easily embedded into a ceiling, and almost no need for maintenance.



Fixture complete with external driver. It can be easily installed in false ceilings.

OTHER INFORMATION



The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30**; **the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

ECONOMIC BENEFITS

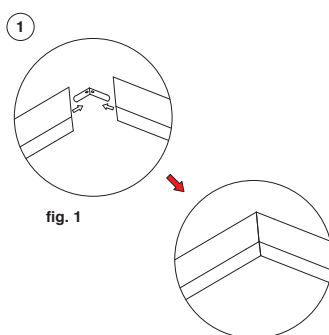


The economic benefits of the new technologies alone are not able to ensure efficiency without the combination of other important advantages. The most significant one concerns the quality of light. New lighting fixtures will make you live and work better. The picture shows how lighting quality is the result of a set of elements connected to visual perception. These elements include visual performance, associated with the level of lighting, glare limitation, visual comfort, which is determined by the correct distribution of light and by a good colour rendering and ambient lighting, which depends on the colour of the light source and on light beam direction. In other words, a good lighting system is one that ensures the right amount of light, without producing glare and where colours can be admired almost as if they were viewed under natural light.

CEILING MOUNTED INSTALLATION WITH ACC. 595 FRAME FOR CRETA LED



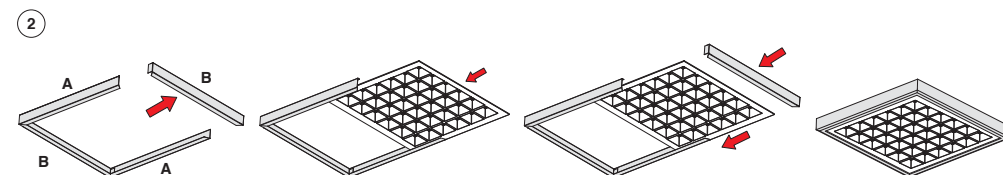
acc. 595 frame 600x600 h70	
white	998035-00
Frame in white-coated aluminium; to be used for ceiling installation of Creta LED.	



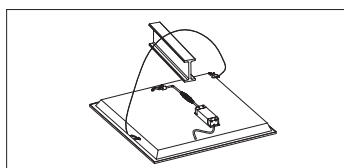
1) Assembly the frame according to the following illustration (**fig.1**)

2) Installation

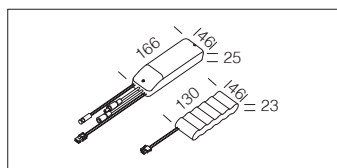
- Drill 4 holes at marking position with expansion screws and self-tapping screws (not screw too tight).
- Install the frame on the roof.
- Move and fix the ceiling frame (lift to right, or right to left) through hardy hole.
- Tighten self-tapping screws.
- Open the frame **B** on one side, insert the panel into the frame, then seal the frame with tightening screws.



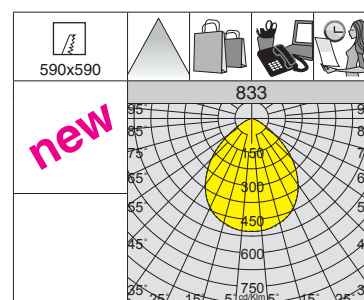
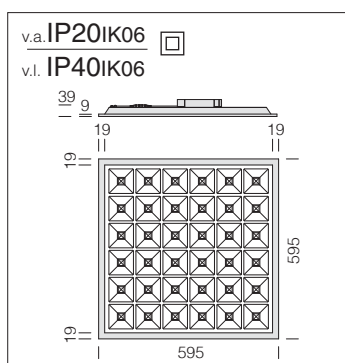
ACCESSORIES



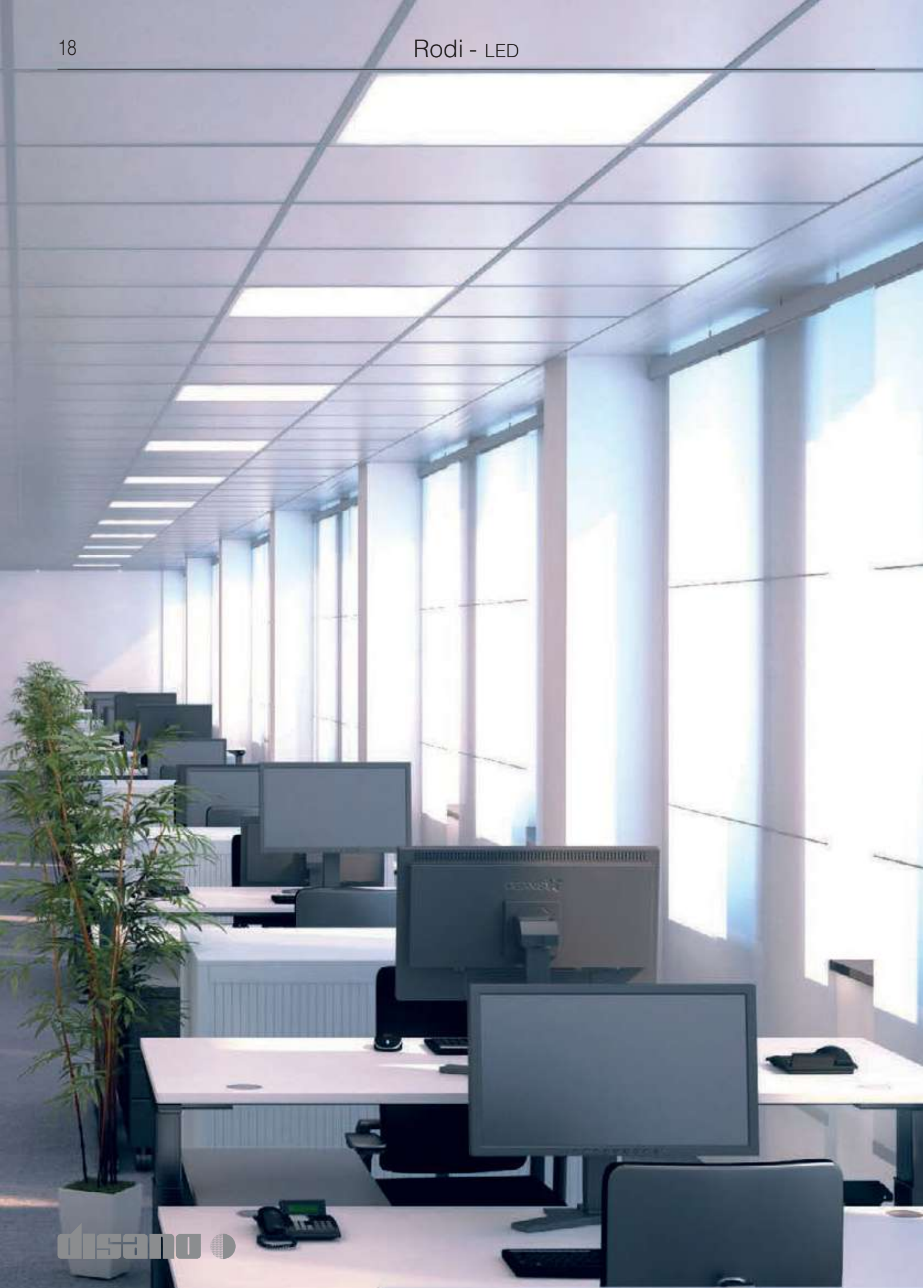
acc. 320 safety cord	
	998004-00
Steel safety cord.	



acc. 600 EM power kit	
1h	986604-00
3h	986604-31
EM (emergency) lamp power kit complete with connectors.	



833 Creta - UGR<17						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - olm - CRI
LED	white	2.00	595	150240-00	34	4000K - 3440lm - CRI 80



GENERAL CHARACTERISTICS

Rodi: recessed LED ceiling fixture with a very slender design and high-efficiency 3000K/4000K LED sources.

Housing and frame: housing in galvanised steel sheet, and frame in aluminium, contact mounting on the cross T structure.

Wiring: rapid wiring connection, the fixture does not need to be opened.

LED: Luminous flux maintenance 80%; 50.000h (L80B20).

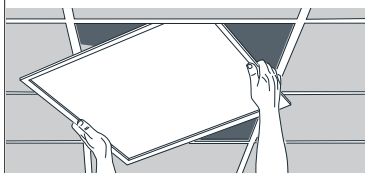
Power factor ≥ 0.95 .

Photobiological safety class: exempt group.



Rodi offers a very bright and diffused lighting, while keeping energy consumptions extremely low and setting itself as the ideal solution for general and functional lighting applications

OTHER CHARACTERISTICS



Rapid wiring connection, the fixture does not need to be opened, it can be easily embedded into a ceiling, and almost no need for maintenance.



Fixture complete with external driver. It can be easily installed in false ceilings.

DIMM Standard version **CLD D-D (DALI)** wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare.** The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

ECONOMIC BENEFITS



The economic benefits of the new technologies alone are not able to ensure efficiency without the combination of other important advantages. The most significant one concerns the quality of light. New lighting fixtures will make you live and work better. The picture shows how lighting quality is the result of a set of elements connected to visual perception. These elements include visual performance, associated with the level of lighting, glare limitation, visual comfort, which is determined by the correct distribution of light and by a good colour rendering and ambient lighting, which depends on the colour of the light source and on light beam direction. In other words, a good lighting system is one that ensures the right amount of light, without producing glare and where colours can be admired almost as if they were viewed under natural light.

CEILING MOUNTED INSTALLATION WITH ACC. 595 FRAME FOR RODI LED

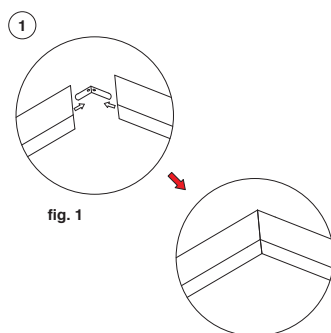


acc. 595 frame 600x600 h70	
white	998035-00
Frame in white-coated aluminium; to be used for ceiling installation of Rodi LED.	



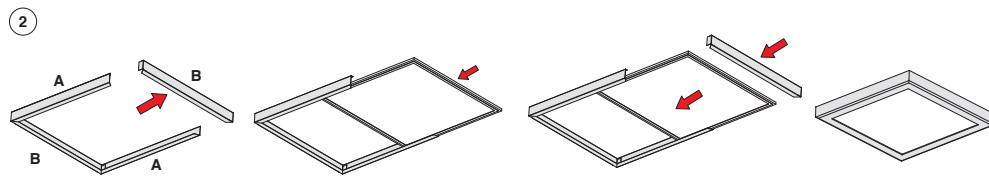
acc. 595 frame 1200x300 h70	
white	998036-00
Frame in white-coated aluminium; to be used for ceiling installation of Rodi R LED.	

1) Assembly the frame according to the following illustration (**fig.1**)



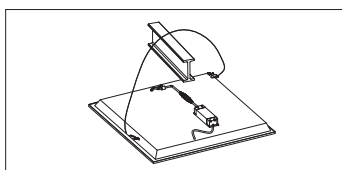
2) Installation

- Drill 4 holes at marking position with expansion screws and self-tapping screws (not screw too tight).
- Install the frame on the roof.
- Move and fix the ceiling frame (lift to right, or right to left) through hardy hole.
- Tighten self-tapping screws.
- Open the frame **B** on one side, insert the panel into the frame, then seal the frame with tightening screws.

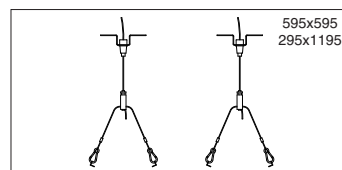


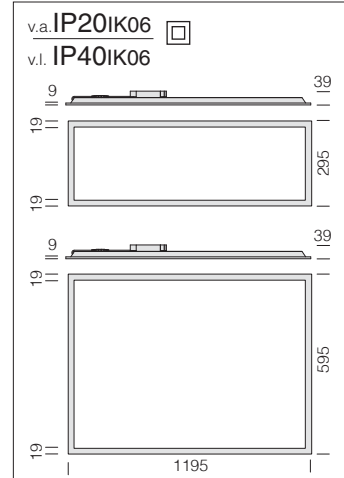
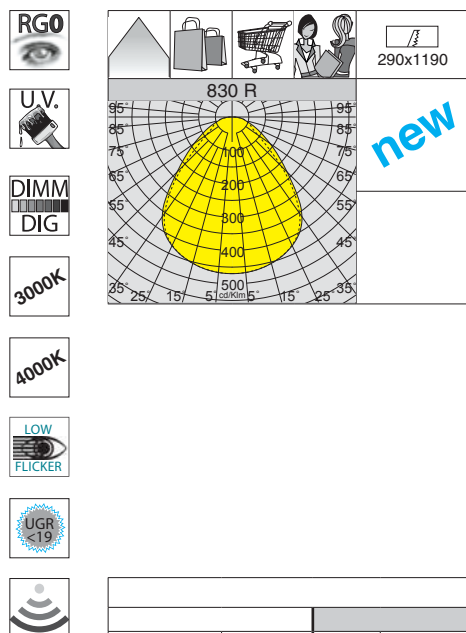
ACCESSORIES

acc. 320 safety cord	
	998004-00
Steel safety cord.	



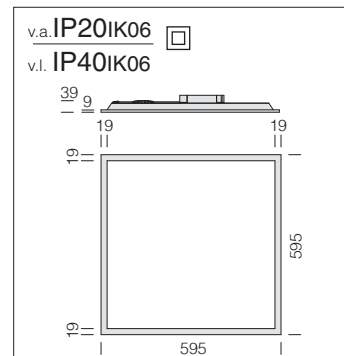
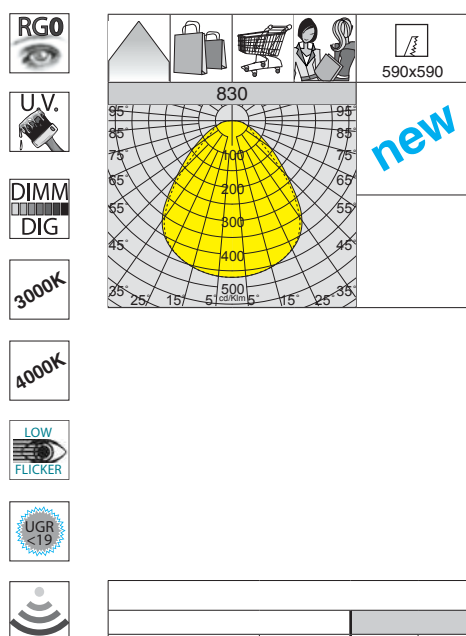
acc. 2520 simple suspension	
	994631-00
Suspension supplied with steel wire, and millimetric adjustment. Bag containing 2 pieces.	





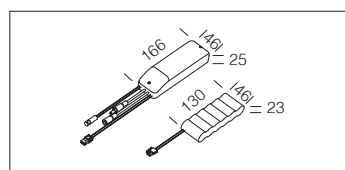
Diffuser: in prismatic engineering plastic with high thermal transmittance.

830 Rodi R - UGR<19							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED	white	2.50	295x1195	150243-00	150243-0041	38	4000K - 3921lm - CRI 80
				150243-39			3000K - 3647lm - CRI 80
LED	white	3.50	595x1195	150244-00		67	4000K - 7353lm - CRI 80

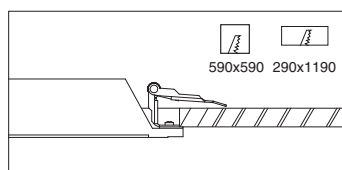


Diffuser: in prismatic engineering plastic with high thermal transmittance.

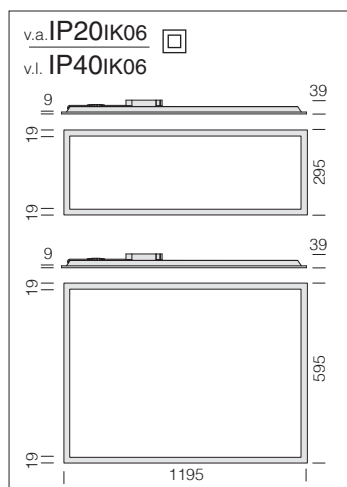
830 Rodi - UGR<19							
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	code	W tot	K - ølm - CRI
LED	white	2.00	595	150242-00	150242-0041	38	4000K - 4002lm - CRI 80
				150242-39			3000K - 3722lm - CRI 80



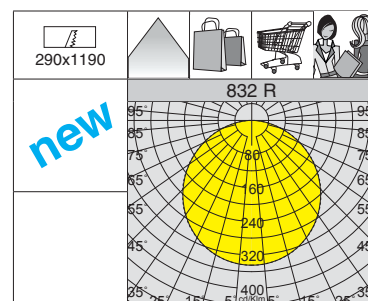
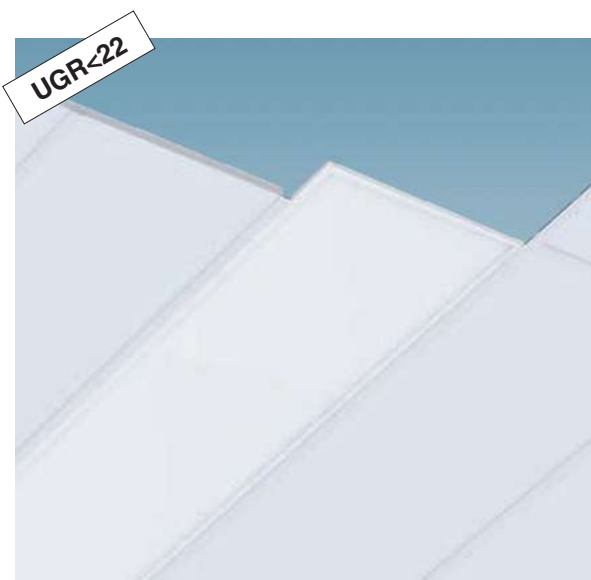
acc. 600 EM power kit	
1h	986604-00
3h	986604-31
EM (emergency) lamp power kit complete with connectors.	



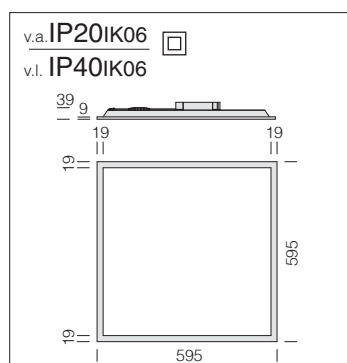
acc. 907 springs	
	998038-00
Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.	



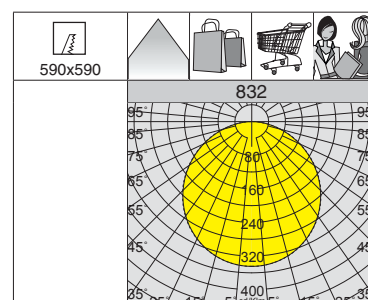
Diffuser: in opal engineering plastic with high thermal transmittance.



832 Rodi R - UGR<22						
		CLD				LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	L	code	W tot	K - olm - CRI
LED	white	2.50	295x1195	150233-00	39	4000K - 4374lm - CRI 80
LED	white	3.50	595x1195	150234-00	75	4000K - 8070lm - CRI 80

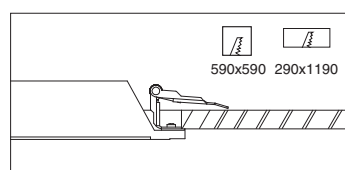


Diffuser: in opal engineering plastic with high thermal transmittance.



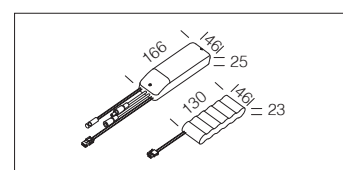
832 Rodi - UGR<22						
		CLD				LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	L	code	W tot	K - olm - CRI
LED	white	2.00	595	150232-00	39	4000K - 4464lm - CRI 80

acc. 907 springs
998038-00
Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.

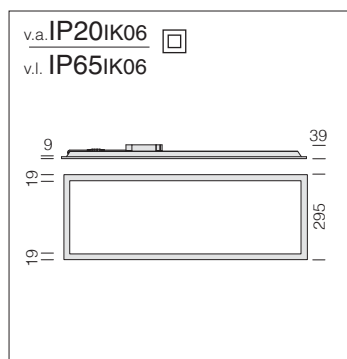


acc. 600 EM power kit	
1h	986604-00
3h	986604-31

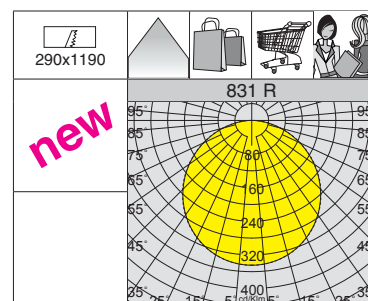
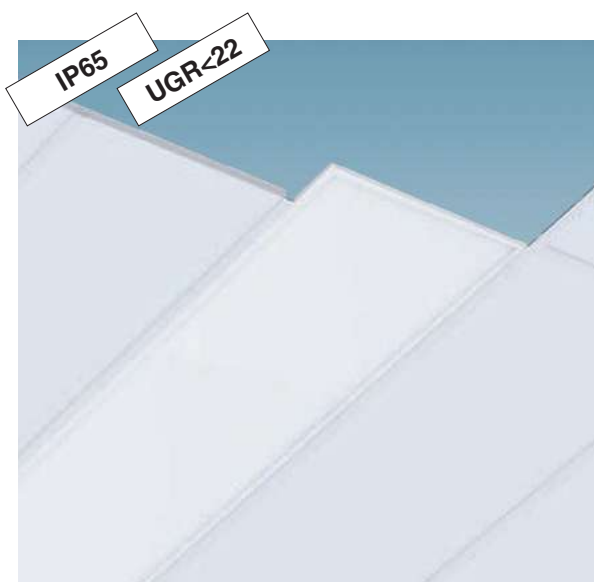
EM (emergency) lamp power kit complete with connectors.



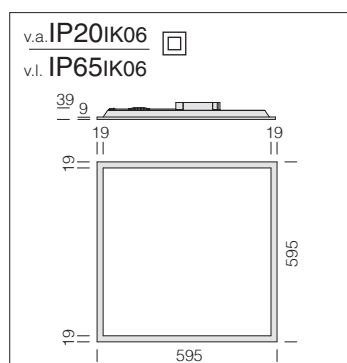




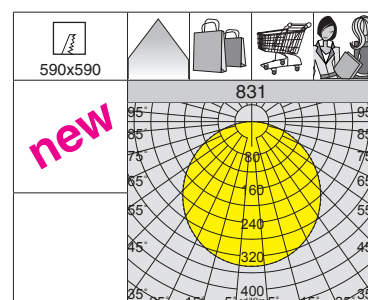
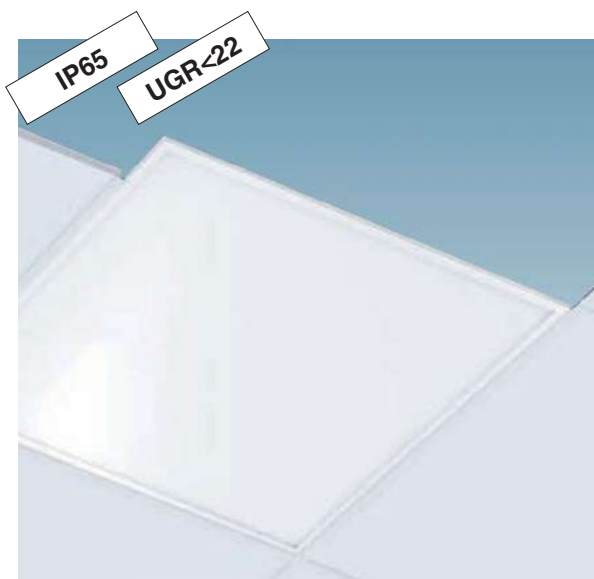
Diffuser: in opal engineering plastic with high thermal transmittance.



831 Rodi R IP65 - UGR<22						
		CLD				LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	white	2.50	295x1195	150237-00	39	4000K - 4374lm - CRI 80

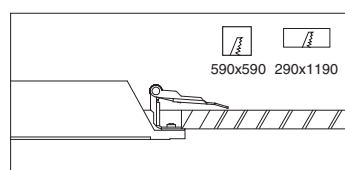


Diffuser: in opal engineering plastic with high thermal transmittance.



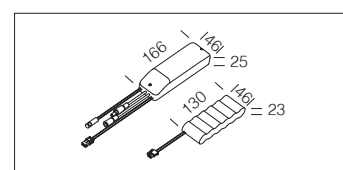
831 Rodi IP65 - UGR<22						
		CLD				LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	white	2.00	595	150232-00002264	39	4000K - 4464lm - CRI 80

acc. 907 springs
998038-00
Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.



acc. 600 EM power kit	
1h	986604-00
3h	986604-31

EM (emergency) lamp power kit complete with connectors.





GENERAL CHARACTERISTICS

Housing: self-extinguishing injection-moulded polycarbonate in RAL 9016 colour. Gear box in white-coated 7/10 thickness steel sheet.

Optics: secondary lenses in PMMA with high transparency and non-yellowing properties, and two photometric distributions with wide and middle beam angles.

Coating: ceiling version in anaphoresis bath with acrylic white enamelling, UV-stabilized.

UGR glare index: UGR<16 - UGR<19 (in any situation) - EN 12464.

LED: power factor ≥ 0.9 .
Luminous flux maintenance 80% 100.000h (L80B20).
Luminous flux maintenance 90% 50.000h (L90B10).
Photobiological safety class:
Exempt group.

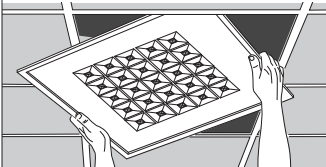


Comfortsquare is available in Tunable White and HCL version (see chapter Interiors - HCL).

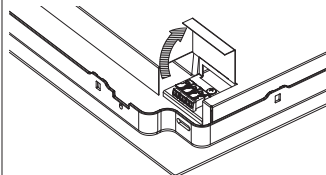
OTHER CHARACTERISTICS



Fixture with a thin design and lenticular optics, ideal in environments that require a controlled lighting distribution and maximum visual comfort (UGR<16 - UGR<19).



Rapid wiring connection, the fixture does not need to be opened, it can be easily embedded into a ceiling, and almost no need for maintenance.



Easy connection

Equipped with hinged door and quick clamping mechanism.

OTHER INFORMATION

DIMM Standard version **CLD**
D-D (DALI) wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

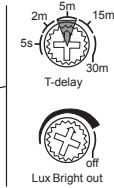
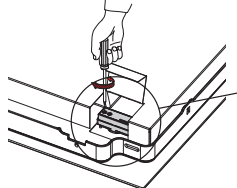


Version **CLD** **D-D**
(PUSH) wiring with **subcode -0045:** it is possible to create lighting systems that can be easily switched ON/OFF and dimmed at low costs using conventional mains voltage push-buttons for lighting control.

CHARACTERISTICS AND FUNCTIONS OF COMFORTSQUARE WITH BUILT-IN PRESENCE AND LIGHTING SENSOR



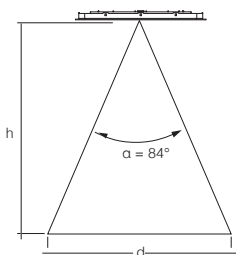
The standard version of Comfortsquare has a presence/lighting sensor that switches the lamp on or off whenever it detects somebody in the room and according to the amount of light inside the room. The standard ceiling lamp is equipped with a door that allows adjusting the settings for the delay and the light value of the bright-out function through 2 potentiometers.



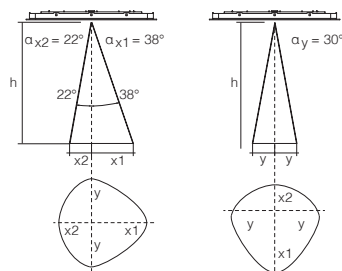
Time potentiometer = 5s, 2m, 5m, 15m, 30m, default = 5 s
(Note: it is possible to select only the steps indicated, no intermediate value is allowed)

Lux potentiometer = 50 - 500 lx, default = off
Bright-out function: without lamp switch on with sufficient detected luminosity. The Bright-out function will activate if the OFF position is not selected.

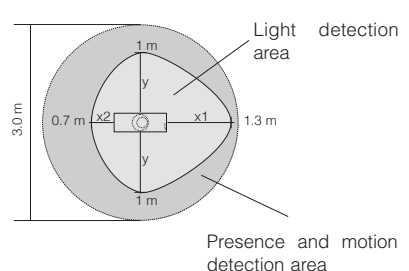
Presence and motion detection



Light level scanning area



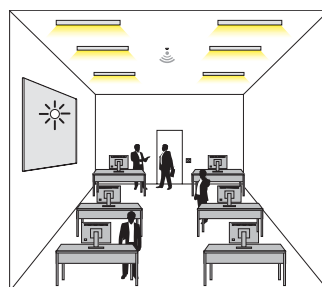
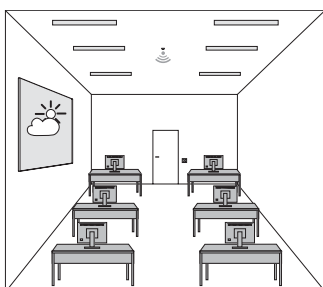
Example of installation at 1.7 m



h *	x1	x2	y	d
1.7m	1.3m	0.7m	1.0m	3.0m
2.0m	1.6m	0.8m	1.2m	3.6m
2.3m	1.8m	0.9m	1.3m	4.1m
2.5m	2.0m	1.0m	1.4m	4.5m
2.7m	2.1m	1.1m	1.6m	4.9m
3.0m	2.3m	1.2m	1.7m	5.4m
3.5m	2.7m	1.4m	2.0m	6.3m
4.0m	3.1m	1.6m	2.3m	7.2m

* Maximum installation height recommended for offices is 3 m and for corridors is 4 m

EXAMPLE OF INSTALLATION WITH EXTERNAL PRESENCE AND LIGHTING SENSOR



The presence detector adjusts the lights to a preset lighting value based on the people occupying a room and the amount of light at that moment. The integrated lighting sensor constantly measures the level of luminosity in the room and compares this value with the value set by the presence detector. The **DIMM DALI** versions of Comfortsquare can be used with the presence detector by ordering with **subcode -0041**.

WHAT TO ORDER:

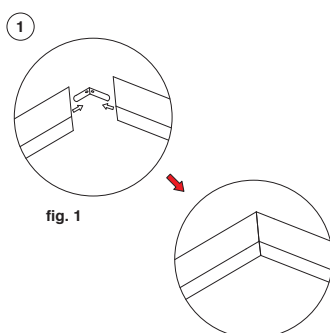
- KIT 1** - example of installation in offices with:
- 6 pcs - art. 710 Comfortsquare (140310-0041)
 - 1 pcs - MASTER DALI sensor (986418-00)
 - 1 pcs - DALI remote control (986421-00)



CEILING MOUNTED INSTALLATION WITH ACC. 595 FRAME FOR COMFORTSQUARE LED



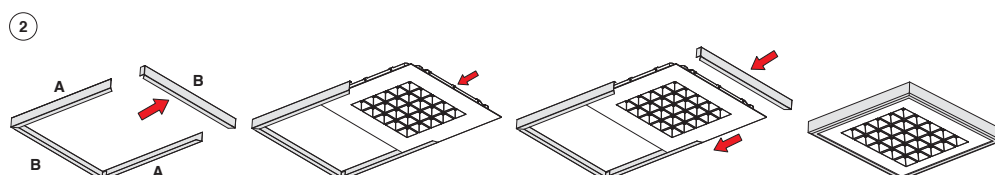
acc. 595 frame 600x600 h70	
white	998035-00
Frame in white-coated aluminium; to be used for ceiling installation of Comfortsquare LED.	



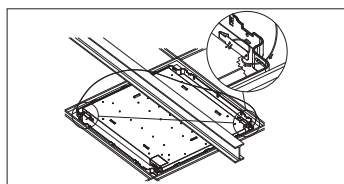
1) Assembly the frame according to the following illustration (**fig.1**)

2) Installation

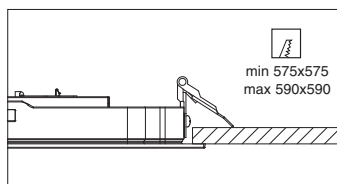
- Drill 4 holes at marking position with expansion screws and self-tapping screws (not screw too tight).
- Install the frame on the roof.
- Move and fix the ceiling frame (lift to right, or right to left) through hardy hole.
- Tighten self-tapping screws.
- Open the frame **B** on one side, insert the panel into the frame, then seal the frame with tightening screws.



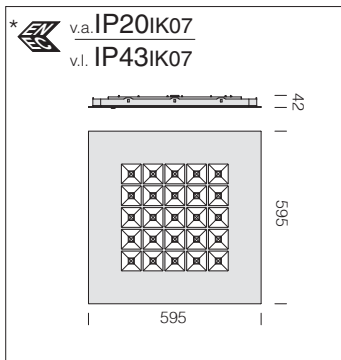
ACCESSORIES



acc. 320 safety cord	
	998004-00
Steel safety cord.	

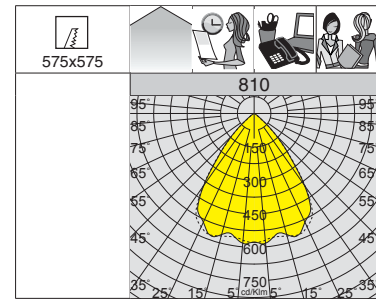
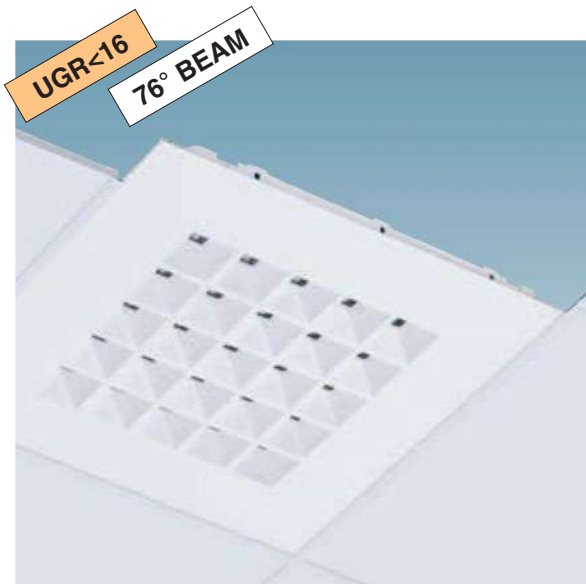


acc. 907 springs	
	998038-00
Springs for recessed non-surface mounting on plasterboard. Bag containing 4 pieces.	

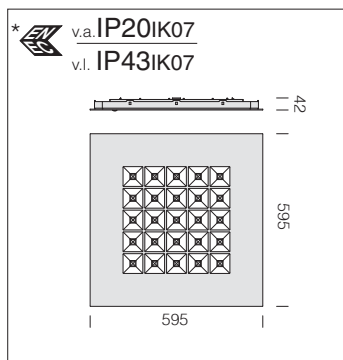


Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.

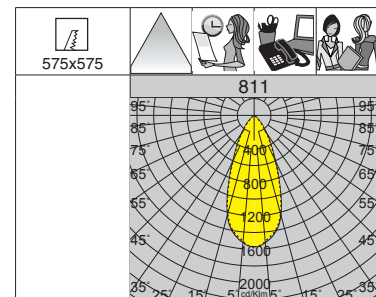
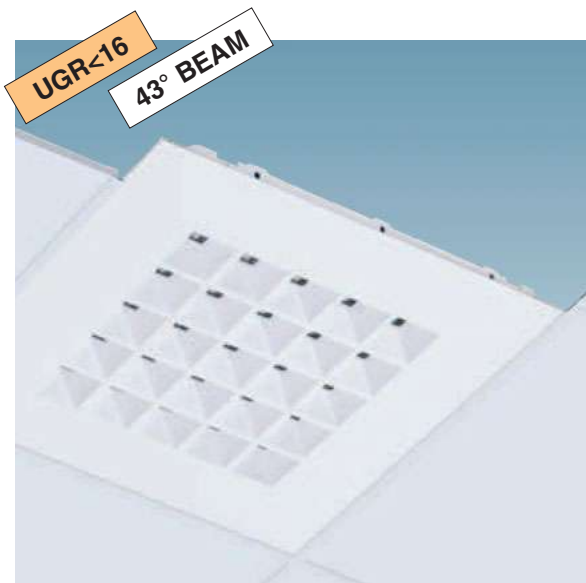
* UGR<19 version



810 Comfortsquare - 76° beam						
wattage	colour	weight	CLD	CLD D-D (DALI)	CLD (sensor)	LUMEN OUTPUT (tq= 25 °C)
LED	white	4.00	code	code	code	K - ølm - CRI - degrees
			150340-00	150340-0041	150340-19	4000K - 3321lm - CRI 80 - 76°
LED *	white	4.00	code	code	code	3000K - 3172lm - CRI 80 - 76°
			150341-00	150341-0041	150341-19	4000K - 4261lm - CRI 80 - 76°
LED *	white	4.00	code	code	code	3000K - 4069lm - CRI 80 - 76°
			150341-39	150341-3941	150341-1928	



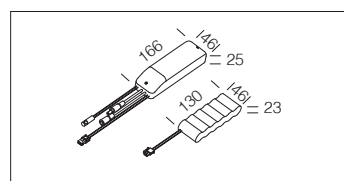
Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.



811 Comfortsquare - 43° beam						
wattage	colour	weight	CLD	CLD D-D (DALI)	CLD (sensor)	LUMEN OUTPUT (tq= 25 °C)
LED	white	4.00	code	code	code	K - ølm - CRI - degrees
			150350-00	150350-0041	150350-19	4000K - 3300lm - CRI 80 - 43°
LED	white	4.00	code	code	code	3000K - 3152lm - CRI 80 - 43°
			150351-00	150351-0041	150351-19	4000K - 4234lm - CRI 80 - 43°
LED	white	4.00	code	code	code	3000K - 4043lm - CRI 80 - 43°
			150351-39	150351-3941	150351-1928	

acc. 600 EM power kit	
1h	986604-00
3h	986604-31

EM (emergency) lamp power kit complete with connectors.





GENERAL CHARACTERISTICS

Housing: pressed steel, surface mounted on T-beams.

Dark light optics: honeycomb structure with PMMA lens to minimize glare.

Internal slab: in PMMA.

Diffuser: in prismatic plastic with high thermal transmittance.

UGR glare index: UGR<16 (in any situation). - EN 12464

LED: Luminous flux maintenance 90%: 50.000h (L90B10).

Power factor ≥ 0.9 .

Photobiological safety class: exempt group.



Product with a very low flicker; uniform light for greater eye protection.

OTHER CHARACTERISTICS



Ibis is a luminaire that stands out for its flexibility. Its antiglare optics and internal PMMA slab guarantees optimal light distribution and ensures maximum visual comfort (**UGR<16**), allowing the fixture to be seamlessly inserted into any room that requires controlled lighting (e.g. offices with VDT workstations, etc.).



Standard version **CLD D-D (DALI)** wiring with **subcode -0041**: thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

UPON REQUEST

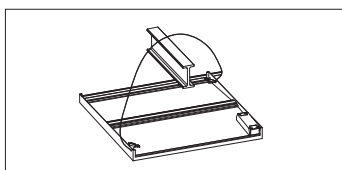


Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



PUSH DIG Version **CLD D-D (PUSH)** wiring with **subcode -0045**: it is possible to create lighting systems that can be easily switched ON/OFF and dimmed at low costs using conventional mains voltage push-buttons for lighting control.

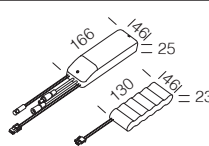
ACCESSORIES



acc. 320 safety cord

998004-00

Steel safety cord.

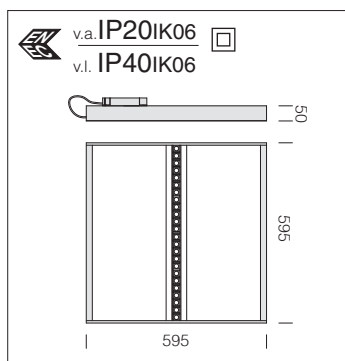


acc. 600 EM power kit

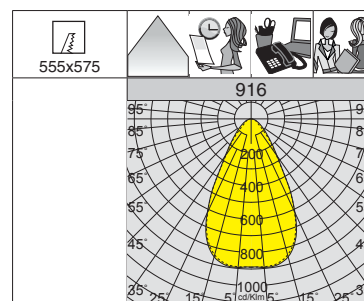
1h 986604-00

3h 986604-31

EM (emergency) lamp power kit complete with connectors.

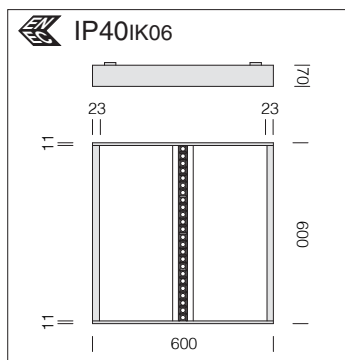


Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.

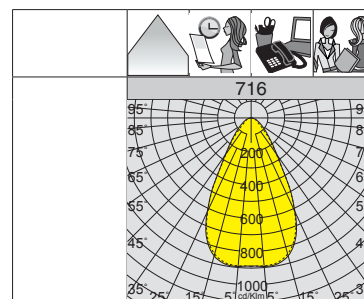


916 Ibis						
		CLD		CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	W tot	K - ølm - CRI
LED	white	3.00	114014-00	114014-0041	33	4000K - 3265lm - CRI 90
			114014-39	114014-3941		3000K - 3036lm - CRI 90
LED	white	3.00	114014-15*		33	4000K - 3265lm - CRI 90

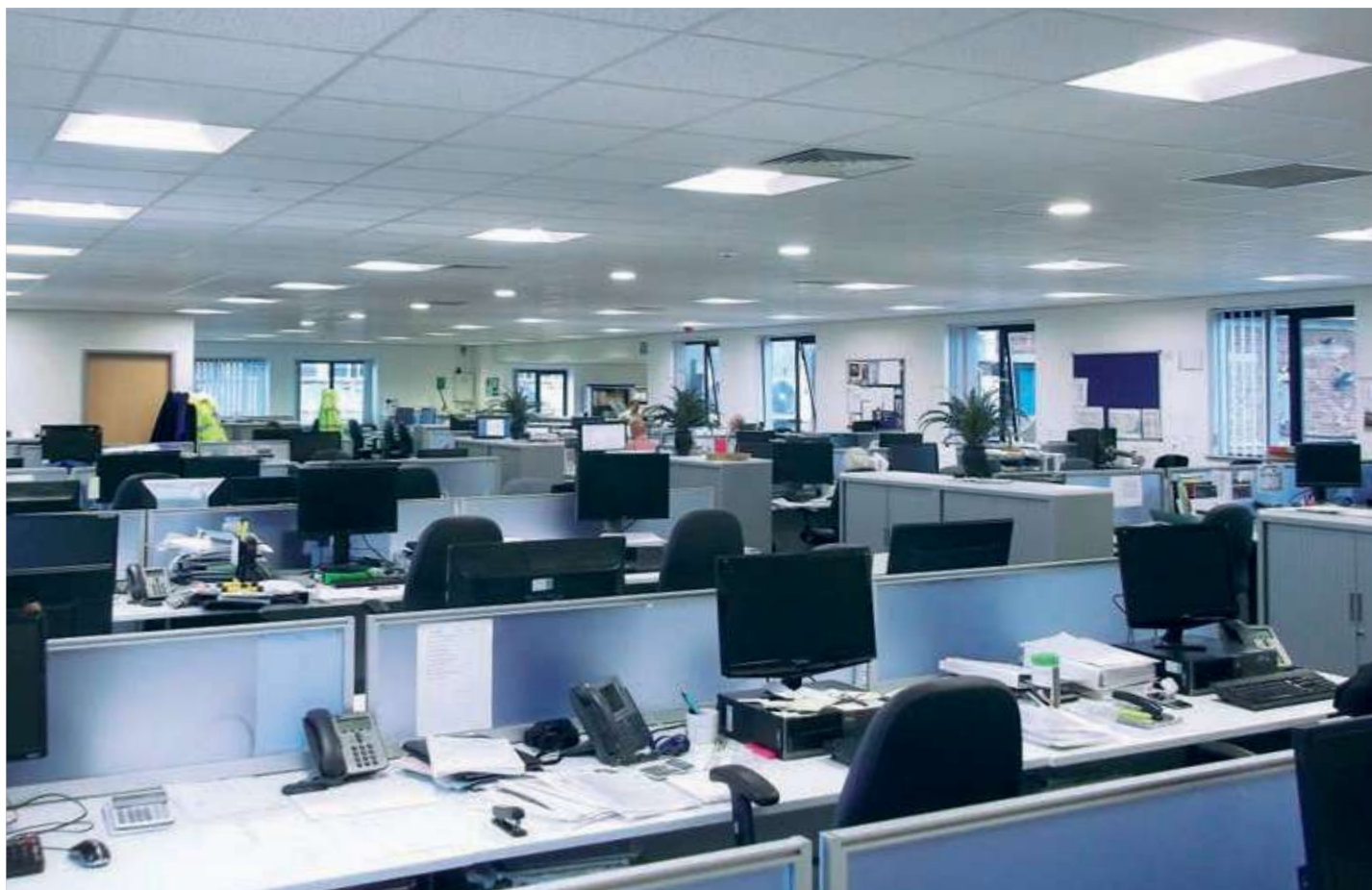
* double switching



Upon request version with:
• CLD D-D (PUSH) wiring with sub-code -0045.



716 Ibis - ceiling						
		CLD		CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	W tot	K - ølm - CRI
LED	white	7.00	114024-00	114024-0041	33	4000K - 3265lm - CRI 90
			114024-39	114024-3941		3000K - 3036lm - CRI 90



GENERAL CHARACTERISTICS

High lighting performance, drastic cuts in energy costs and all the advantages offered by LED sources are the distinctive traits of **Heron**, the evolution of the classic panel led.

Housing: pressed steel, surface mounted on T-beams.

Diffuser: in prismatic plastic with high thermal transmittance.

UGR glare index: UGR<19 (in any situation). - EN 12464.

LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥ 0.9 . Photobiological safety class: exempt group.

OTHER CHARACTERISTICS



The lamp's shape guarantees uniform light distribution: white-light LEDs emit high quality lighting to ensure the best visual comfort (**UGR<19**) and perfect colour rendering, ideal for all those spaces that need constant lighting.



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION





The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

UPON REQUEST

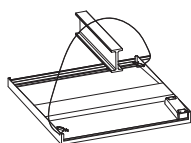


Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

DIMM Version **CLD D-D**
 **(DALI)** wiring with
DIG **subcode -0041:**
 thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

DIMM Version **DIMM 1-10V**
 wiring with **subcode -12.**

ACCESSORIES



acc. 320 safety cord

998004-00

Steel safety cord.

acc. 600 EM power kit

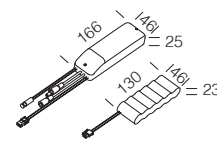
1h

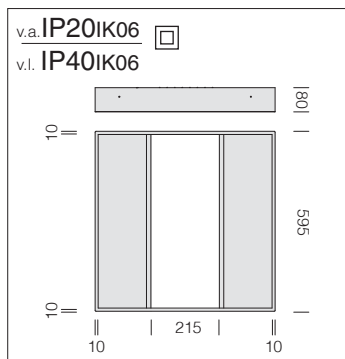
986604-00

3h

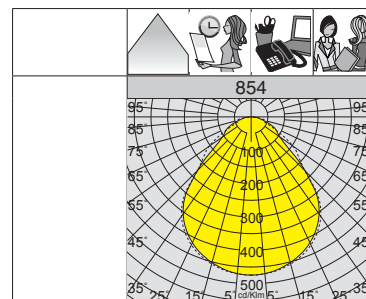
986604-31

EM (emergency) lamp power kit complete with connectors.

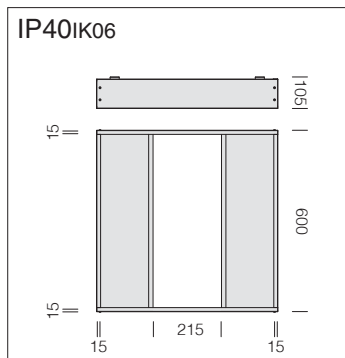




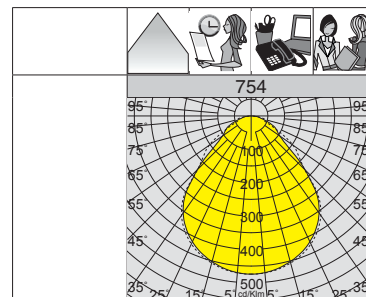
Upon request version with:
• **CLD D-D (DALI)** wiring with **sub-code -0041.**



854 Heron					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.40	150212-00	28	4000K - 3375lm - CRI 80
			150213-00	38	4000K - 4556lm - CRI 80



Upon request version with:
• **CLD D-D (DALI)** wiring with **sub-code -0041**.



754 Heron - ceiling					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	7.40	140212-00	28	4000K - 3375lm - CRI 80
			140213-00	38	4000K - 4556lm - CRI 80



GENERAL CHARACTERISTICS

Housing: in steel sheet.

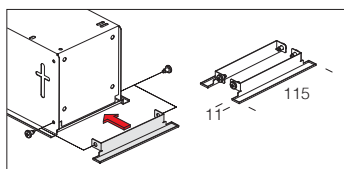
Diffuser: in shatterproof and self-extinguishing V2 matt polycarbonate.

Coating: white polyester powder coating, UV stabilized.

Supplied without mounting brackets for contact mounting on the cross T structure. For non-contact mounting, please order brackets acc. 898/899.

Upon request: loop-in connection, max 1,5mmq.

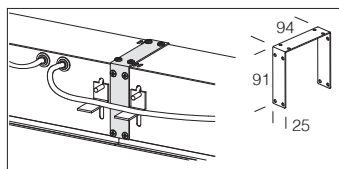
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%: 50.000h (L80B20).
Photobiological safety class: Exempt group.



acc. 224 end cap

white 998014-00

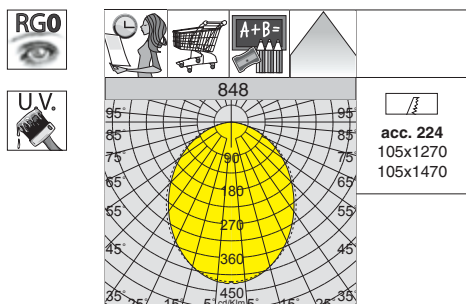
To be used on ceiling fixtures as end caps (also for installation in continuous line).



acc. 200 bracket for conti. line

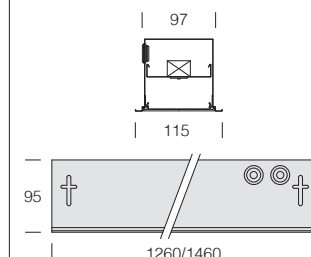
steel 998011-00

To be used when the lighting system is installed in continuous row.



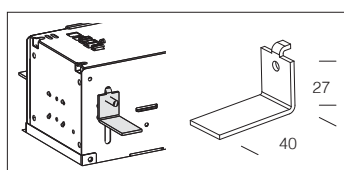
v.a. IP20IK07

v.l. IP40IK07



848 Supercomfort

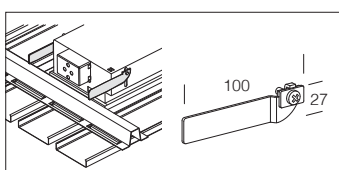
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	white	3.60	1260	153436-00	26	4000K - 2598lm - CRI \geq 80
				153437-00	48	4000K - 4855lm - CRI \geq 80
LED	white	4.50	1460	153438-00	72	4000K - 7073lm - CRI \geq 80



acc. 899 bracket

galvanized 998027-00

In zinc plated steel. 4-pc set to be used when the fixture is not contact mounted.



acc. 898 front bracket

galvanized 998025-00

Set of 4 pcs. Bracket for frontal mounting.

GENERAL CHARACTERISTICS

Housing: made of sheet steel.

Reflector: white aluminium.

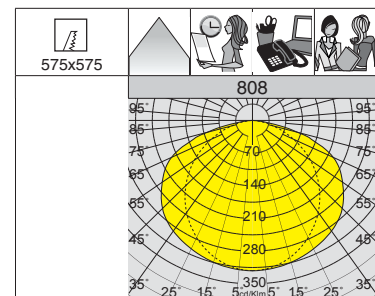
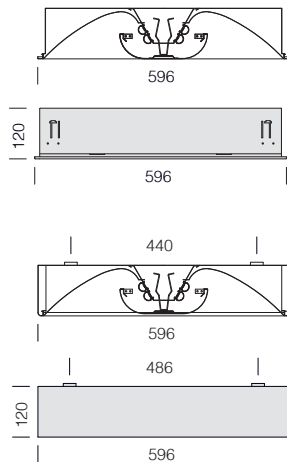
Diffuser: semi-sphere in micro-perforated sheet meta, complete with anti-glare opal plate.

Supplied without brackets: when not contact mounted, use brackets acc. 900.

LED: Luminous flux maintenance 80% 50.000h (L80B20)
Photobiological safety class: exempt group.



IP20IK07



art. 708

808 Gabbiano

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	6.00	153025-00	55	4000K - 2975lm - CRI≥80

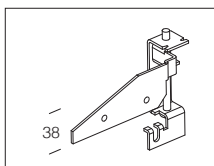
708 Gabbiano - ceiling

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	7.00	143025-00	55	4000K - 2975lm - CRI≥80

acc. 900 adjustable bracket

galvanized 998010-00

In zinc plated steel. 4-pc set to be used when the fixture is not contact mounted.





GENERAL CHARACTERISTICS

Housing-reflector: in shatterproof self-extinguishing V0 polycarbonate, metalized with high-grade aluminium powers and equipped with anti-reflexion and anti-glare optics. The wide perimeter border on the false ceiling has white coloured photogravure finishing. Springs for false ceiling mounting are made in galvanised steel wire. Lamp shielding angle of 65°.

Shield: in shatterproof, self-extinguishing transparent V0 polycarbonate. Internal micro-lenticular film and glass shielding of **UGR<19**.

Internal reflector: in white self-extinguishing V0 polycarbonate with polished finishing.

Heat sink: black-coated die-cast aluminium with integrated cooling fins.

Coating: UV epoxy polyester power coating.

UGR glare index: UGR<19 (in any situation). - EN 12464.



Compact Dark is available in Tunable White and HCL version (see chapter *Interiors - HCL*).

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.



EM:
subcode -07

ECONOMIC BENEFITS

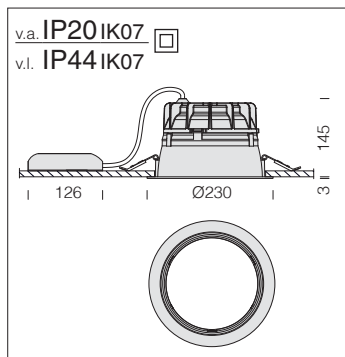


The economic benefits of the new technologies alone are not able to ensure efficiency without the combination of other important advantages. The most significant one concerns the quality of light. New lighting fixtures will make you live and work better. The picture shows how lighting quality is the result of a set of elements connected to visual perception. These elements include visual performance, associated with the level of lighting, glare limitation, visual comfort, which is determined by the correct distribution of light and by a good colour rendering and ambient lighting, which depends on the colour of the light source and on light beam direction. In other words, a good lighting system is one that ensures the right amount of light, without producing glare and where colours can be admired almost as if they were viewed under natural light.

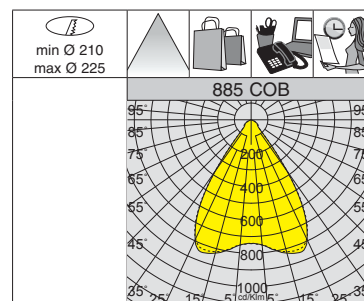
UPON REQUEST



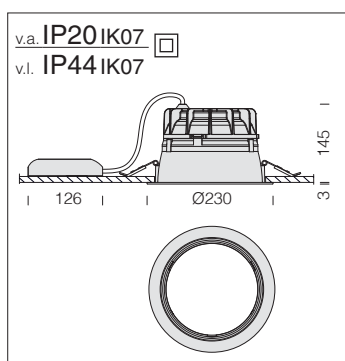
Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



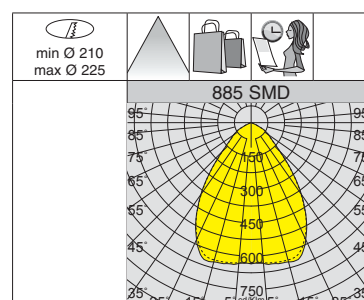
LED: Power factor $\geq 0,92$.
Luminous flux maintenance 90%:
55.000h (L90B10).
Photobiological safety class:
Exempt group.



885 Compact Dark 1 - COB						
wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED COB	white	1.10	156450-00	156450-07	18	4000K - 2156lm - CRI 80
			156451-00	156451-07	22	4000K - 2636lm - CRI 80



LED: Power factor $\geq 0,92$.
Luminous flux maintenance 80%:
55.000h (L80B20).
Photobiological safety class:
Exempt group.



885 Compact Dark 2 - SMD						
wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED SMD	white	1.10	156460-00	156460-07	10	4000K - 1653lm - CRI 80
			156461-00	156461-07	14	4000K - 2274lm - CRI 80
			156462-00	156462-07	20	4000K - 3108lm - CRI 80



GENERAL CHARACTERISTICS

The lighting of transit areas (stairs, corridors, entrances) as well as workplaces (public buildings, offices, hotels and restaurants), must not be taken for granted for both functional and aesthetic reasons. If well-illuminated, the spaces open to the general public or residential environments convey a sense of safety and wellbeing. Robust and high-quality recessed spotlights, like the one of the Compact family by Disano, are the ideal solution: easy to fit into any space, they guarantee maximum efficiency and long life.

Housing: die cast aluminium complete with spring clips for recessed mounting.

Diffuser: high-temperature resistant thermoplastic material.

Coating: power-coated with a UV-resistant polyester epoxy paint.

LED: Power factor $\geq 0,95$.
Luminous flux maintenance 80%: 55.000h (L80B20).
Photobiological safety class: Exempt group.



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION

CRI 95

The right lighting and fixture play a vital role in facilitating sales.

This is the reason why LED fixtures with a **CRI > 90** are being requested. Therefore, the current trend is geared towards the manufacturing of more flexible fixtures, which also emit an excellent quality of light, while guaranteeing remarkable energy savings and lower maintenance costs.

The Colour Rendering Index (**CRI**) indicates how truthfully the artificial light source is able to reproduce the colours of objects. It varies from a range of **0 to 100**, where **0 represents the minimum** and **100 is the maximum**. Daylight is the best source of light from a physiological point of view because it contains the full colour spectrum. Therefore, a lamp with a high colour rendering index is very important to ensure the wellbeing and comfort of the occupants of a room and it is absolutely necessary in rooms where good visibility is required.

ECONOMIC BENEFITS



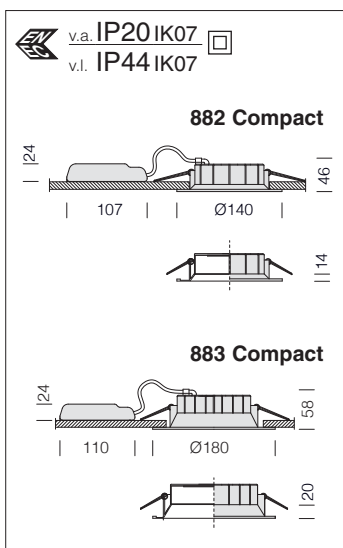
The economic benefits of the new technologies alone are not able to ensure efficiency without the combination of other important advantages. The most significant one concerns the quality of light. New lighting fixtures will make you live and work better. The picture shows how lighting quality is the result of a set of elements connected to visual perception. These elements include visual performance, associated with the level of lighting, glare limitation, visual comfort, which is determined by the correct distribution of light and by a good colour rendering and ambient lighting, which depends on the colour of the light source and on light beam direction. In other words, a good lighting system is one that ensures the right amount of light, without producing glare and where colours can be admired almost as if they were viewed under natural light.

UPON REQUEST

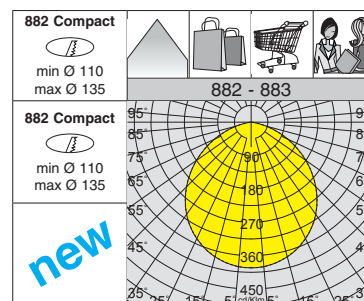


Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

DIMM Version **CLD D-D**
(DALI) wiring with
DIG **subcode -0041:**
thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

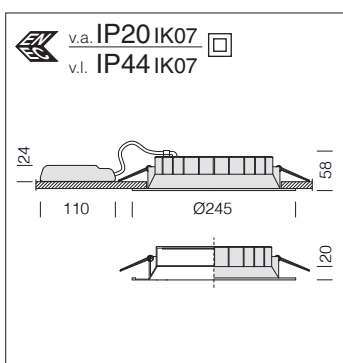


Upon request version with:
• CLD D-D (DALI) wiring with sub-code -0041.

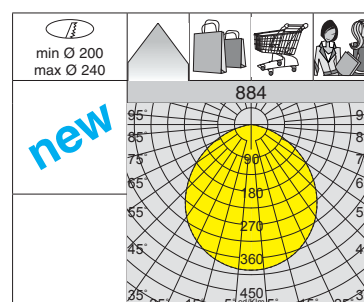


882 Compact - Ø140					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	0.25	156405-00	11	4000K - 1279lm - CRI 95
			156405-39		3000K - 1216lm - CRI 95

883 Compact - Ø180					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	0.40	156415-00	14	4000K - 1777lm - CRI 95
			156415-39		3000K - 1688lm - CRI 95
LED	white	0.40	156416-00	19	4000K - 2182lm - CRI 95
			156416-39		3000K - 2073lm - CRI 95



Upon request version with:
• CLD D-D (DALI) wiring with sub-code -0041.



884 Compact - Ø245					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	0.60	156424-00	19	4000K - 2316lm - CRI 95
			156424-39		3000K - 2200lm - CRI 95
LED	white	0.60	156425-00	25	4000K - 3245lm - CRI 95
			156425-39		3000K - 3063lm - CRI 95
LED	white	0.60	156427-00	29	4000K - 3665lm - CRI 95
			156427-39		3000K - 3482lm - CRI 95

acc. 590 wire spring adapters

998115-00

Wire spring adapters to increase the supporting surface. 2-pc set.



Disano presents a range of lighting fixtures designed to meet the special needs of clean rooms where the control of bacterial contamination is important. In response to the specific requirements of this sector, the installation of dedicated luminaires is fundamental.

Aseptic hospital rooms, operation theatres, laboratories and corridors are all spaces where a high level of safety and a screened light for an improved visual comfort are required.



The disinfection of **aseptic processing environments** is difficult to achieve and "clean rooms" do not stay clean for long, as harmful bacteria repopulate the space very quickly.

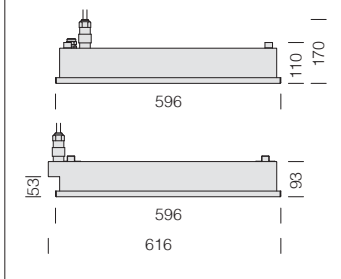
At the customer's specific request, Disano can provide a solution that continuously disinfects the environment and reinforces the efforts to prevent the spreading of infections.

It is a ceiling lamp that incorporates a combination of white LEDs and 405nm LEDs capable of keeping the environment continuously disinfected. The 405nm light source can be managed with a separated control circuit. The light emitted will not harm patients or surfaces and can be used in environments like:

- Swimming pools - Kitchens - Dental clinics
- Hospitals - Lifts - Bathrooms



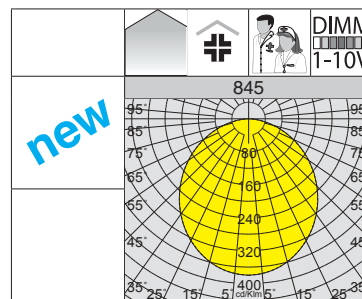
IP65IK06



Housing: in sheet steel, contact mounting on the cross T structure.

LED: Luminous flux maintenance 80%; 50.000h (L80B20). Power factor ≥ 0.95 .

IP65
aseptic environments



Equipment: complete with insulation connector for quick installation with **no need to open the fixture.**

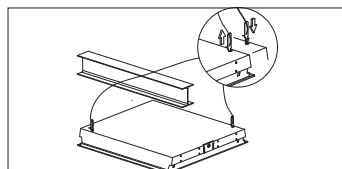
845 Comfort Panel - IP65 - for aseptic environments

		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	W	K - olm - CRI	
LED	white	6.90	150221-00	150221-0041	35	4000K - 3663lm - CRI 80	

acc. 320 safety cord

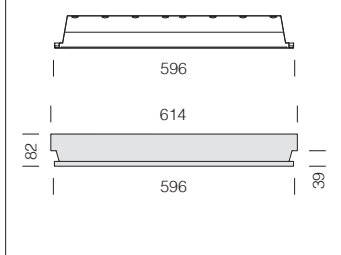
998004-00

Steel safety cord.



v.a. IP20IK06

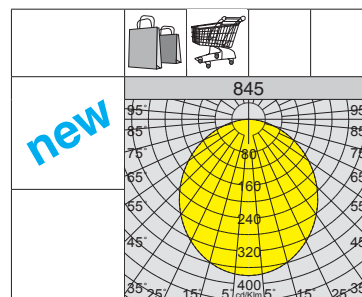
v.l. IP54IK06



Housing: in sheet steel, contact mounting on the cross T structure.

LED: Luminous flux maintenance 80%; 50.000h (L80B20). Power factor ≥ 0.95 .

IP54
SENSOR



Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

845 Comfort Panel

		CLD		CLD E		CLD (radar sensor)		LUMEN OUTPUT (tq= 25 °C)	
wattage (150mA)	colour	weight	code	code	code	W tot	K - olm 150mA - CRI		
LED	white	3.00	150220-00	150220-07 (60 min.)	150220-19	35	4000K - 3663lm - CRI 80		

RADAR SENSOR ON-OFF - TECHNICAL SPECIFICATIONS

Power source	220-240V AC - 50/60 Hz	Installing height	ceiling: 1,5-3,5 m		Default settings: Detection distance: 8m Ambient light: 2000lux Hold time: 6 min N.B.: contact our customer service for setups other than the ones suggested.
High frequency	5,8GHz CW Radar, ISM band - 0,2 - <10 mW	Rated Load (resistive)	1200 W		
Detection area	ceiling: 360°	Rated Load (inductive)	300 W		
Detection distance (adjustable)	ceiling: Ø 1-8 m	Power consumption	<0,9 W		
Detection motion speed	0,6-1-1,5 m/s	Hold time (choice)	min: 10sec (± 3 sec.) max: 12min (± 1 min.)		



GENERAL CHARACTERISTICS

Housing: pressed steel with anodized extruded aluminium frame.

Diffuser: protective 4-mm thick tempered glass.

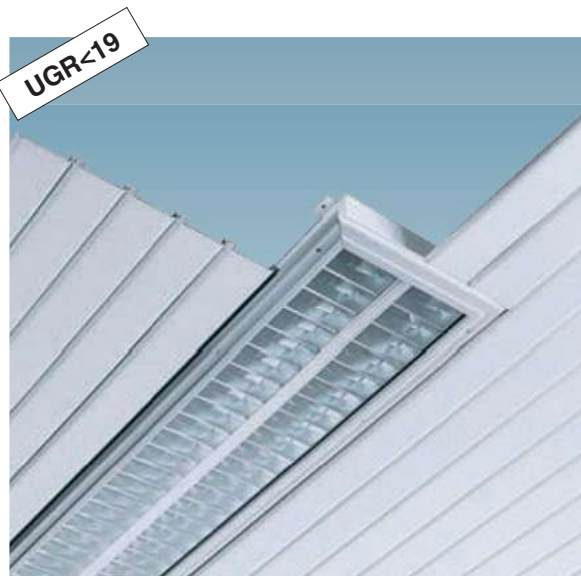
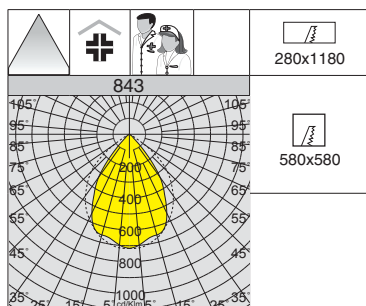
Dark light louvre: double parabolic louvres, lengthwise and crosswise in high-gloss, in anodised 2mm thick matt aluminium. Anti-glare and anti-iridescence, very low luminance.

Coating: white epoxy-polyester powder, UV stabilized for aseptic environments.

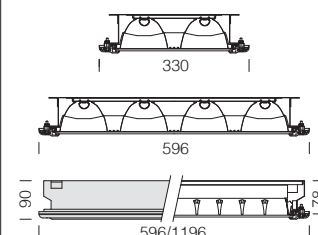
Equipment: supplied with frame and gasket.

Installation: unsuitable for mounting in non-inspectionable false ceilings.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%: 50.000h (L80B20).



IP65IK08



843 Ermetica - matt louvre + glass

		CLD		LUMEN OUTPUT (tq= 25 °C)		
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED 2x	anodis.	11.00	1196	152081-00	48	4000K - 3985lm - CRI \geq 80
LED 4x		10.00	596	152080-00	38	4000K - 2944lm - CRI \geq 80

GENERAL CHARACTERISTICS

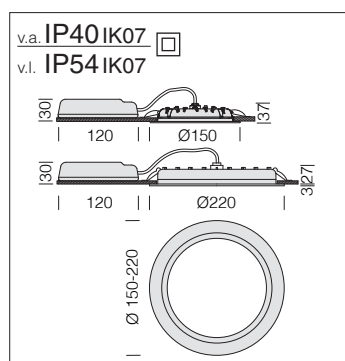
Housing: fixed downlight in die cast aluminium.

Screen: in anti-glare matt plastic material.

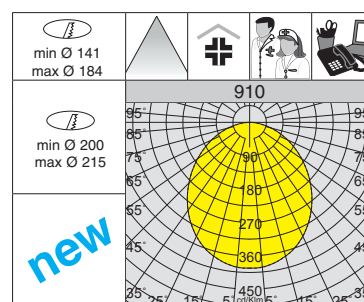
Coating: epoxy polyester powder coating resistant to UV rays.

Equipment: equipped with galvanised steel support brackets, with housing for springs for attachment to the false ceilings.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).



CRI 90

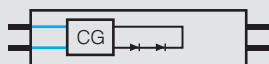


910 Health						
		CLD			W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code		K - ølm - CRI
LED	white	0.50	150	156471-39	15	3000K - 1581lm - CRI 90
				156471-00		4000K - 1700lm - CRI 90
LED	white	0.60	220	156470-39	22	3000K - 2455lm - CRI 90
				156470-00		4000K - 2640lm - CRI 90



Without lamps. To be completed with LED TUBES
Example/characteristics of LED TUBES

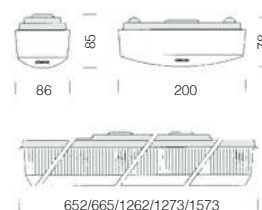
- max. weight of single lamp: 500 gr
- dimensions (see fig. A1).
- connection (see wiring diagram):



LED lamp dimensions	
L (mm)	A1
A1 = 590mm	
A1 = 1200mm	
A1 = 1500mm	



IP40IK08 ∇



Housing: in sheet steel, pressed in one piece.

Reflector: in steel, white, UV-stabilised.

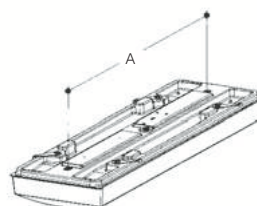
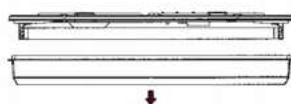
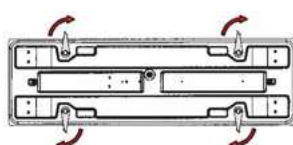
Diffuser: in clear polycarbonate, microprismatic inside, anti-dazzle, vandal resistant and V2 self-extinguishing, UV-stabilised, smooth outside, dustproof.

601 Disanlens - polycarbonate diffuser

		CLD-S			
wattage	colour	weight	L	code	W max
LED 1x	white	1.50	652	115570-03	1x10
		2.00	1262	115571-03	1x16
LED 2x	white	2.10	665	115572-03	2x10
		4.00	1273	115573-03	2x16
		5.30	1573	115574-03	2x24

Ceiling fixture length:

1x10= 86 x 652
2x10= 200 x 665
1x16= 86 x 1262
2x16= 200 x 1273
2x24= 200 x 1573



Spacing for ceiling mounting (A):

1x10= 400 mm
2x10= 550 mm
1x16= 740 mm
2x16= 1080 mm
2x24= 1080 mm

GENERAL CHARACTERISTICS

The Disanlens ceiling fixture is the ideal solution to ensure maximum visual comfort in places like **classrooms** and offices that require optimal lighting distribution.

Housing: in pre-coated and pre-galvanized sheet; ABS white thread ends with vandal-proof closure system.

Diffuser: in polycarbonate with micro-prismatic finish surface to control lighting distribution.

Equipment: complete with inlet cable gland and spacers to mount the fixture to the ceiling or wall..

LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥ 0.9 . Photobiological safety class: exempt group.

OTHER CHARACTERISTICS

End caps with drop-out prevention/ vandal-proof screws.



DIMM Standard version **CLD**
D-D (DALI) wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

OTHER INFORMATION



The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare.** The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



EM version subcode -07: only for fixtures in lengths from 1158 mm to 1440 mm.

***IP43IK06:** on request version for ceiling installation.

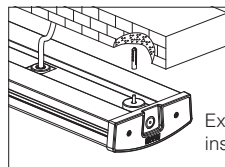
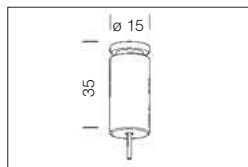


Built-in RADAR SENSOR (sub-code -19 at an extra price):

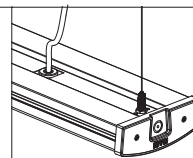
is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

INSTALLATION AND ACCESSORIES

acc. 2518 simple suspension	
galvanized	994019-00
Suspension supplied with steel wire, 1.75 m long with millimetric adjustment. Max load: 20 kg.	

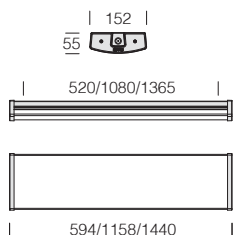


Example ceiling installation.

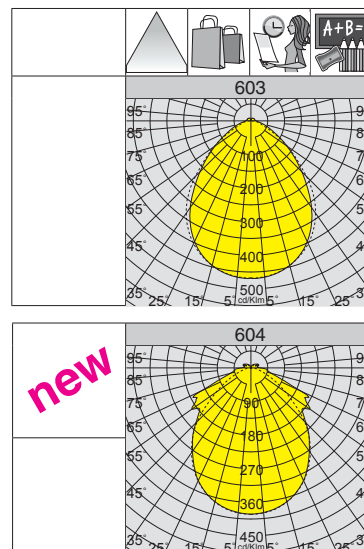


Example of suspended installation with simple suspension acc. 2518.

*IP40IK06



SENSOR
UGR<19



603 Disanlens - UGR<19

wattage	colour	L	CLD			W tot	LUMEN OUTPUT (tq= 25 °C)	
			weight	code	code		K - ølm - CRI	
LED	white	594 mm	1.50	115520-00	115520-19	12	4000K - 1500lm - CRI 80	
		1158 mm	2.80	115521-00	115521-19	23	4000K - 3000lm - CRI 80	
		1440 mm	2.90	115522-00	115522-19	37	4000K - 4753lm - CRI 80	

604 Disanlens

potenza	colore	L	CLD			W tot	LUMEN OUTPUT (tq= 25 °C)	
			peso	codice			K - ølm - CRI	
LED	bianco	594 mm	1.50	115532-00		12	4000K - 1513lm - CRI 80	
		1158 mm	2.80	115534-00		23	4000K - 3026lm - CRI 80	
		1440 mm	2.90	115535-00		37	4000K - 4795lm - CRI 80	



GENERAL CHARACTERISTICS

Housing: in extruded aluminium with closing ends.

Diffuser: in shatter-proof, self-extinguishing and UV-stabilised V2 polycarbonate. Smooth and dust-proof on the outside, and multiple grooves on the inside to increase light distribution.

Coating: smooth, white powder coating.

Equipment: silicone rubber gasket; outer screws in stainless steel.

LED: Power factor ≥ 0.9 . Luminous flux maintenance 80%: 50.000h (L80B20). Photobiological safety class: Exempt group.

OTHER CHARACTERISTICS

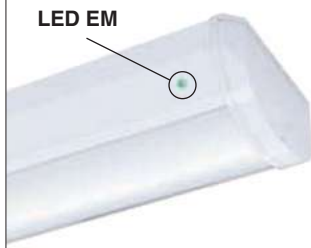


Product with a very low flicker; uniform light for greater eye protection.



EM:
subcode -07

LED EM



UPON REQUEST

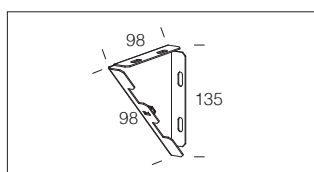
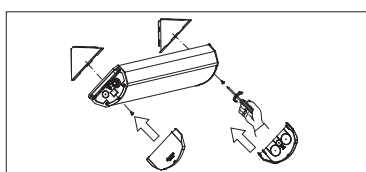
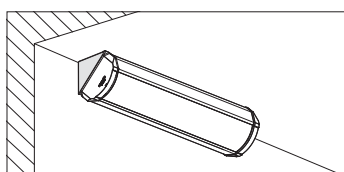


Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

Suitable for mounting in continuous line with **sub-code -0072**.



INSTALLATION AND ACCESSORIES

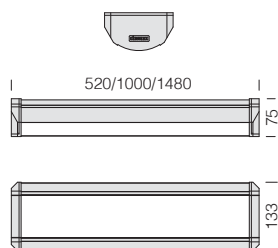


acc. 588 bracket

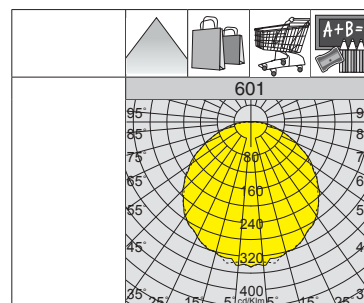
993971-00

Bracket for wall mounting. 2-pc set.

IP44IK06



IP44

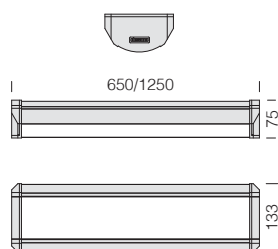


601 Disanlens

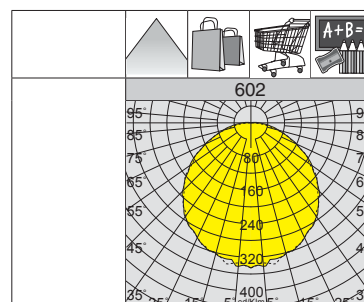
			CLD		CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	L	weight	code	code	W tot	K - olm - CRI
LED	white	520 mm	1.50	115594-00	115594-07	15	4000K - 1947lm - CRI 80
		1000 mm	2.70	115595-00	115595-07	29	4000K - 3894lm - CRI 80
		1480 mm	3.90	115596-00	115596-07	43	4000K - 5517lm - CRI 80

Upon request version with built-in radar sensor (subcode -19).

IP20IK06



IP20



602 Disanlens

			CLD		CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	L	peso	code	code	W tot	K - olm - CRI
LED	white	600 mm	1.50	115597-00	115597-07	15	4000K - 1720m - CRI 80
		1200 mm	2.70	115598-00	115598-07	30	4000K - 3440m - CRI 80

Upon request version with built-in radar sensor (subcode -19).



GENERAL CHARACTERISTICS

Housing: extruded aluminium with die-cast end caps.

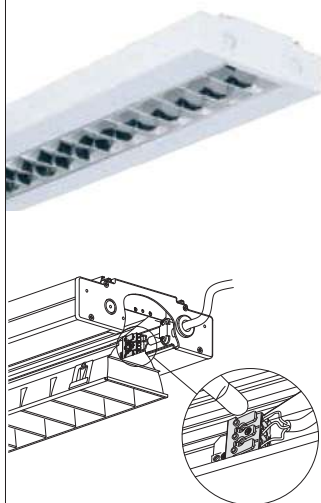
Dark light optics: double parabolic louvres, in high-gloss plated aluminium 99.99. Anti-glare and anti-iridescence, very low luminance. PVD treatment to increase light efficiency.

Coating: UV-stabilized polyester resin powder coating.

Standard supply: the snap-on optic unit remains attached by safety cords.

LED: Power factor: 0,95
Luminous flux maintenance 80% 50.000h (L80B20).
Photobiological safety class: exempt group

OTHER CHARACTERISTICS



Quick connection for easy and rapid installation and maintenance.

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



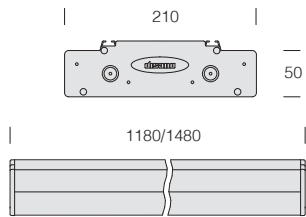
Product with a very low flicker; uniform light for greater eye protection.

ECONOMIC BENEFITS

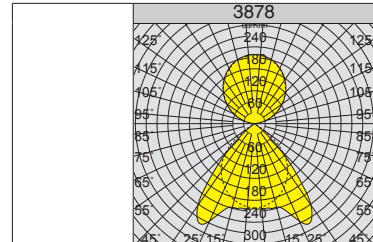
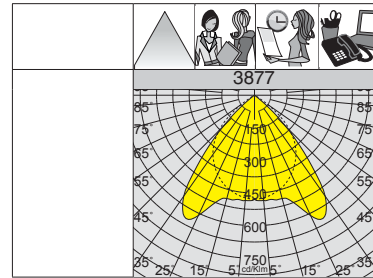
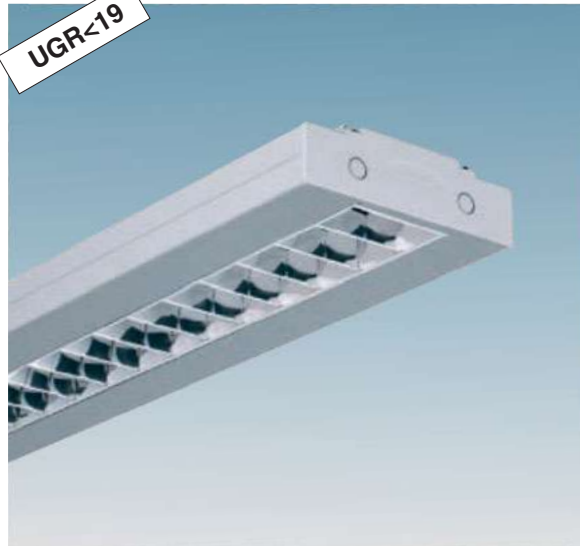


The economic benefits of the new technologies alone are not able to ensure efficiency without the combination of other important advantages. The most significant one concerns the quality of light. New lighting fixtures will make you live and work better. The picture shows how lighting quality is the result of a set of elements connected to visual perception. These elements include visual performance, associated with the level of lighting, glare limitation, visual comfort, which is determined by the correct distribution of light and by a good colour rendering and ambient lighting, which depends on the colour of the light source and on light beam direction. In other words, a good lighting system is one that ensures the right amount of light, without producing glare and where colours can be admired almost as if they were viewed under natural light.

IP20IK07



UGR<19

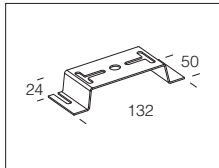


3877 Channel - direct light					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	5.00	145170-00	27	4000K - 2681lm - CRI 80
	s. silver		145171-00		
LED	white	5.00	145172-00	34	4000K - 3352lm - CRI 80
	s. silver		145173-00		

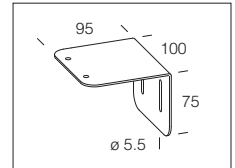
3878 Channel - direct/indirect light					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	5.00	145180-00	53	4000K - 5554lm - CRI 80
	s. silver		145181-00		
LED	white	5.00	145182-00	67	4000K - 6943lm - CRI 80
	s. silver		145183-00		

ACCESSORIES

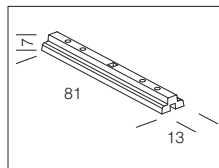
acc. 376 ceiling mounting unit	
galvanized	145151-00
For direct ceiling installation. Only for equipment with direct light. 2 per pack.	



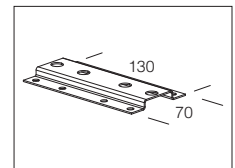
acc. 2291 wall mounting unit	
galvanized	143998-00
Galvanized sheet steel brackets. To install the lighting fixture directly onto wall surfaces. 2 per pack.	



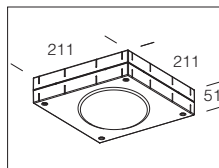
acc. 2290 linear joint	
zama	143997-00
2 per pack.	



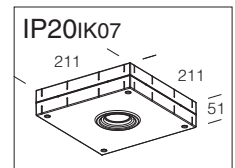
acc. 2292 reinforcement plate joint	
m. silver	143999-00
To be used as a steel reinforcement in a continuous line. Be used for the row with 3 suspensions every 2 ceiling lights.	



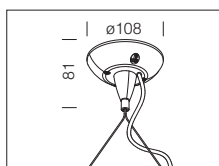
acc. 397 simple cube	
s. silver	145098-00
white	145099-00
In die-cast aluminium. To be used with "L", "T" or "X" joints.	



acc. 3875 cube with spotlight		
LED	s. silver.	145106-00
	white	145107-00
In die-cast aluminium. To be used with "L", "T" or "X" joints.		

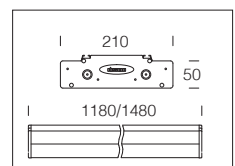


acc. 2513 suspension	
m. silver	993917-00



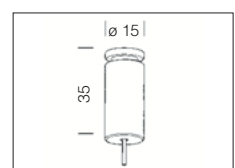
acc. 2514 powered suspension - 3 poles		
m. silver	Max load: 20 Kg - Cm 175	993919-00

acc. 395 "S1" module		
s. silver	1180	145081-00
white		145090-00
s. silver	1480	145082-00
white		145091-00



acc. 2519 powered suspension - 5 poles		
m. silver	Max load: 20 Kg - Cm 175	993909-00

acc. 2518 simple suspension	
galvanized	994019-00
Suspension supplied with steel wire, 1.75 m long with millimetric adjustment. Max load: 20 kg.	





GENERAL CHARACTERISTICS

Frame and covers: in power-coated extruded aluminium, UV resistant with stabilised pre-treatment.

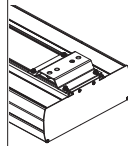
Lighting fixture: in coated metal plate with diffuser holder in power-coated extruded aluminium, UV resistant with stabilised pre-treatment.

Reflector: in pre-anodised aluminium.

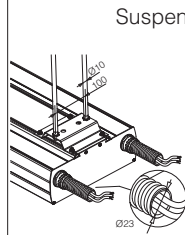
Diffuser: in tempered glass, 5 mm thick, internally sandblasted against direct glare.

Standard ceiling supply: bearing channel, 3 metres long, that can hold two ceiling fixtures. To be completed with end caps as needed. This product enables endless solutions that can be **developed based on design requirements**.

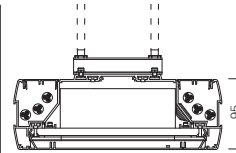
LOAD-BEARING CHANNEL SUITABLE FOR LIGHTING IN UNDERGROUND TRANSPORT SYSTEMS, AIRPORTS, RAILWAY STATIONS, LARGE AREAS, ETC. TO DEVELOP ON PLAN.



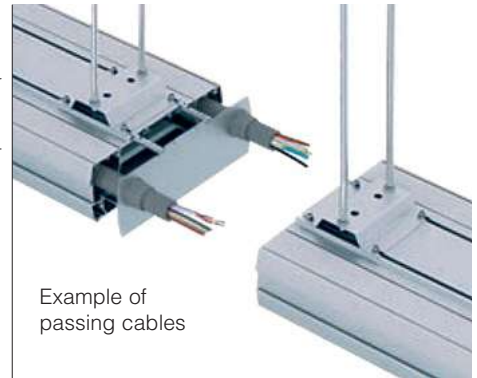
Ceiling installation



Suspension installation



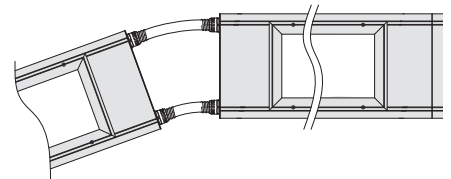
These fixtures are load-bearing modules, containing appropriate compartments for the installation of wired broadcasting, electric, telephone cables...



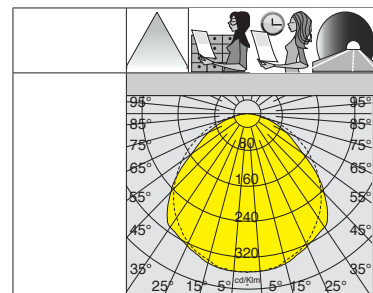
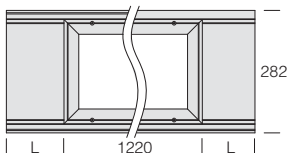
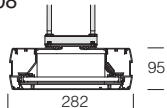
Example of passing cables

L = the module's length is according to customer's request.

Note: in part "S", option to install loudspeakers or different accessories.



IP40IK08
IP65IK08



Cometa

		LED (tj= 25 °C)	
wattage (116mA)	colour	W	K - ølm 116mA - CRI
LED	silver	56	4000K - 5600lm - CRI≥80



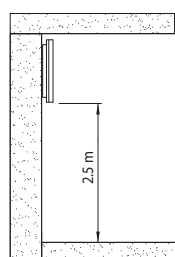
GENERAL CHARACTERISTICS

Housing: vandal-resistant, self-extinguishing polycarbonate.

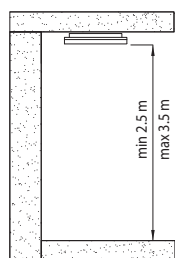
Diffuser: In clear polycarbonate, anti-dazzle, vandal resistant.

LED: Power factor >0.9.

Luminous flux maintenance 80%: 33.000h (L80B20).

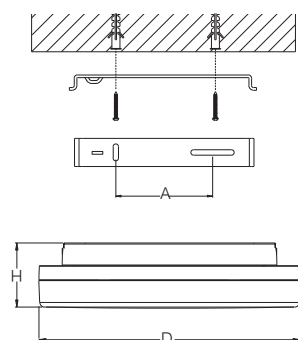


Wall installation.



Ceiling installation.

OTHER CHARACTERISTICS



D	H	A
220mm	55mm	76±14mm
280mm	55mm	80±14mm
330mm	55mm	90±20mm

Equipment: supplied with bracket for ceiling/wall installation.

OTHER INFORMATION



Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.



● switch UP
□ switch DOWN

● ● 100%	● ○ 75%	○ ● 50%	○ ○ 25%
----------	---------	---------	---------

● ● 5sec	● ○ 90sec	○ ● 5min	○ ○ 15min
----------	-----------	----------	-----------

● ● Disable	● ○ 2lux	○ ● 10lux	○ ○ 50lux
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DETECTION AREA:

is the area scanned by the sensor. It can be adjusted for specific applications by combining DIP switches.

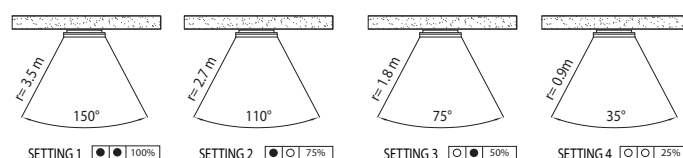
HOLD-TIME:

is the period of time the light will stay ON after the sensor has been triggered.

DAYLIGHT THRESHOLD:

Daylight sensor takes priority over the motion sensor. Set threshold according to specific needs. Disable it to allow motion detection only.

Examples of possible detection area setups (150°-110°-75°-35°) and related detection distances ($r=3.5\text{m}$ - 2.7m - 1.8m - 0.9m)



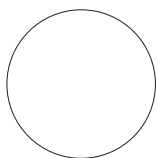
SETTING 1 ● ● 100%

SETTING 2 ● ○ 75%

SETTING 3 ○ ● 50%

SETTING 4 ○ ○ 25%

IP65IK07



Ø 220 - 280
155

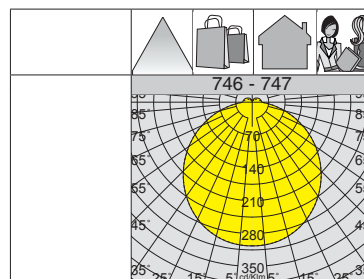
100/240V



746 - Ø220



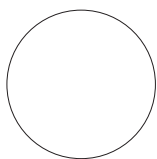
747 - Ø280



746 - Oblò 2.0 - Ø220						
		CLD			W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø mm	code		K - ølm - CRI
LED	white	0.60	220	112626-00	15	4000K - 1444lm - CRI 83
				112626-39		3000K - 1328lm - CRI 83

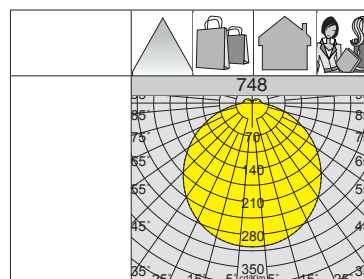
747 - Oblò 2.0 - Ø280						
		CLD		CLD sensor (ON-OFF)	W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø mm	code		K - ølm - CRI
LED	white	0.80	280	112636-00	18	4000K - 1930lm - CRI 83
				112636-39		3000K - 1774lm - CRI 83

IP65IK07

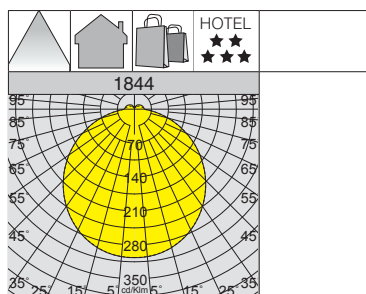


Ø 330
155

100/240V



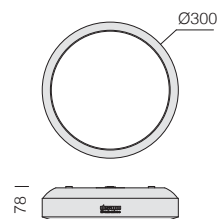
748 - Oblò 2.0 - Ø330						
		CLD		CLD sensor (ON-OFF)	W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø mm	code		K - ølm - CRI
LED	white	1.00	330	112646-00	24	4000K - 2780lm - CRI 83
				112646-39		3000K - 2555lm - CRI 83



Upon request: available in in colored versions.



IP65IK08



GENERAL CHARACTERISTICS

Housing: vandal resistant, self-extinguishing, UV-stabilised anti-yellowing polycarbonate and external finishing in ABS.

Diffuser: vandal resistant, self-extinguishing, UV-stabilised anti-glare polycarbonate; dustproof.

LED: Power factor: ≥ 0.9
Luminous flux maintenance 80%: 50.000h (L80B10)

1844 Globo 2.0					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	0.90	427249-00	14	4000K - 1550lm - CRI 83
			427249-39		3000K - 1441lm - CRI 83

Upon request: available EM (sub-code -07) version at an extra price.

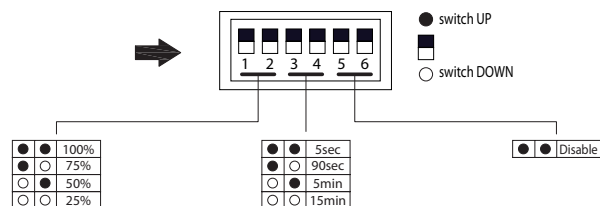


1844 Globo 2.0 - with SENSOR					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	0.90	427249-19	14	4000K - 1550lm - CRI 83

Version with **built-in sensor** for presence detection and gradual luminosity control.

Built-in RADAR SENSOR (sub-code -19):

is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.



DETECTION AREA:

is the area scanned by the sensor. It can be adjusted for specific applications by combining DIP switches.

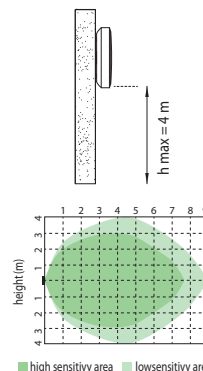
HOLD-TIME:

is the period of time the light will stay ON after the sensor has been triggered.

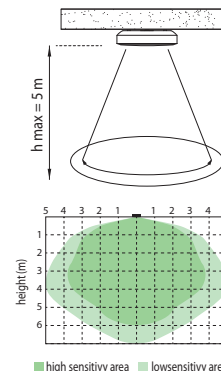
DAYLIGHT THRESHOLD:

Disable, motion detection only.

Wall installation.

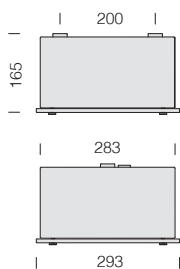
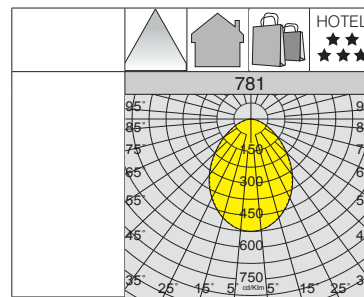
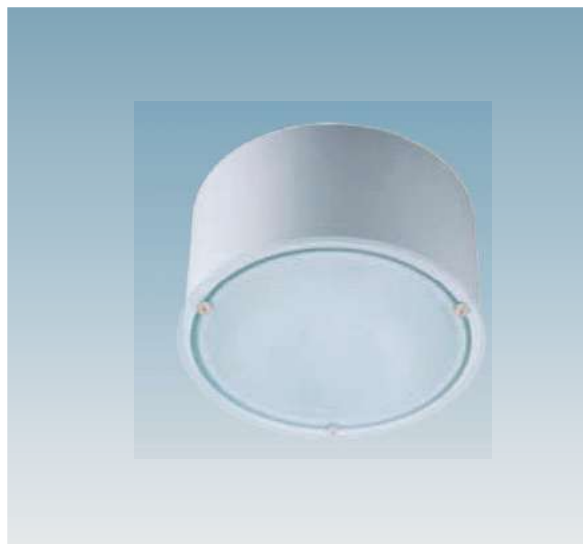


Ceiling installation.



Factory settings: Detection distance: 8m - Hold time: 5sec			
Power	220-240V AC 50/60 Hz	Mounting height	wall: 4m ceiling: 5 m
Frequency	5.8GHz CW Radar, ISM band - 0,2 - <10 mW	Nominal load	800 W (resistive) 400 W (inductive)
Detection area	ceiling: 30°-150°	Energy consumption	<0,5 W
Detection distance (adjustable)	ceiling: Ø 1-8 m	Hold Time (adjustable)	5s, 90s, 5min., 15min.

IP40IK04

**GENERAL CHARACTERISTICS****Housing:** in sheet steel.**Diffuser:** glass.**Coating:** with white acrylic powder, colour white, UV-stabilized, upon phosphate treatment.**LED:** Luminous flux maintenance 80%: 80.000h (L80B20). Power factor >0,9.**781 Compact**

CLD D (IGBT)				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.60	156301-00	14	4000K - 1262lm - CRI≥80

Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

781 Compact - with SENSOR

CLD				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.60	156301-19	21	4000K - 1262lm - CRI≥80

Version with **built-in sensor** for presence detection and gradual luminosity control.

FEATURES MASTER/SLAVE:

Master/Slave interface: to control up to max. 11 fixtures (tot. power 230W).

Example of standard installation:

1 MASTER + 10 SLAVES

Example of mixed installation:

2 MASTERS (one of which serves as the SUB-MASTER) + 9 SLAVES

(Note: this type of installation can accept 1 MASTER and up to max. 3 SUB-MASTERS)

781 Compact - MASTER

CLD				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.60	156301-0024	21	4000K - 1262lm - CRI≥80

Always use with art. 781 in the SLAVE version (with subcode **0096**) to control up to 10 luminaires.

781 Compact - SLAVE

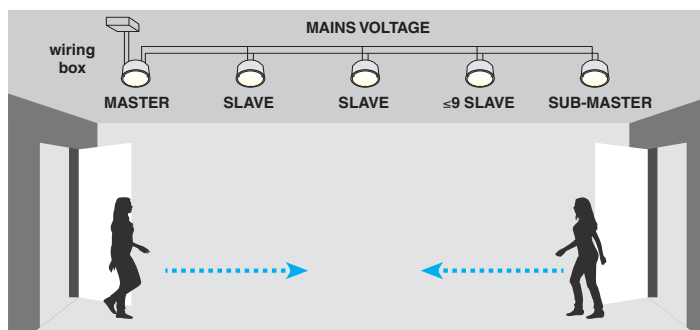
CLD				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.60	156301-0096	21	4000K - 1262lm - CRI≥80

ADVANTAGES:

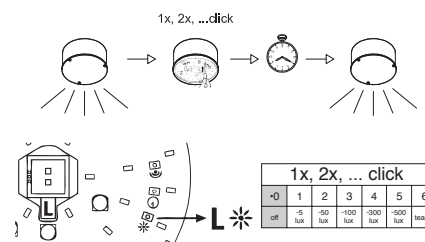
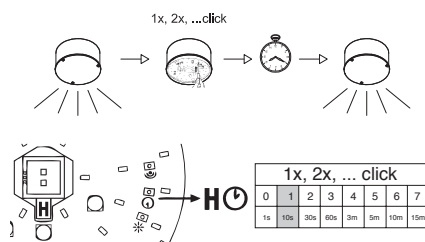
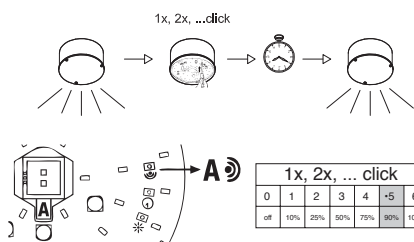
- High reliability
- Easy to use
- Built-in power supply
- High energy efficiency

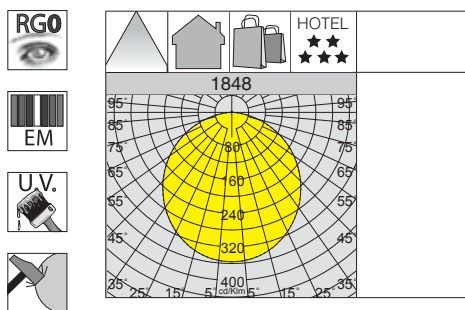
APPLICATIONS:

- Corridors, stairs, entrances
- Public spaces: hotels and restaurants
- Public buildings and offices
- Service areas: garages and warehouses

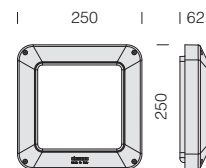


Sensor sensitivity, timer and twilight switch can be adjusted via touch buttons.

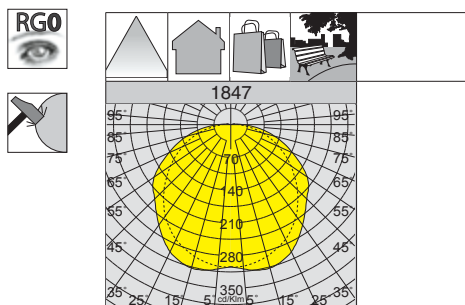




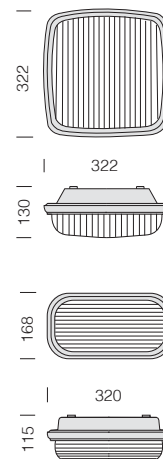
IP65IK06

**GENERAL CHARACTERISTICS****Housing:** In die-cast aluminium.**Diffuser:** in opal methacrylate anti-glare polycarbonate; dustproof.**LED:** Power factor: $\geq 0,92$
Luminous flux maintenance 80%:
50.000h (L80B20).**Upon request:** coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.**1848 Riquadro**

		CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	W tot	K - ølm - CRI
LED	s. silver	3.00	427552-00	427552-09	9	4000K - 1032lm - CRI 80



IP65IK08

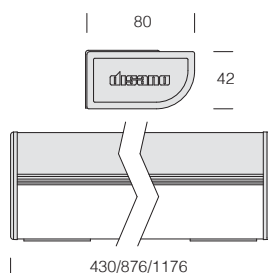
**GENERAL CHARACTERISTICS****Housing:** vandal resistant, self-extinguishing, UV-stabilised anti-yellowing polycarbonate.**Diffuser:** vandal resistant, V2 self-extinguishing, UV-stabilised anti-glare polycarbonate (Cubo: dust-proof, smooth outside).**LED:** Power factor: $\geq 0,85$
Luminous flux maintenance 80%:
50.000h (L80B20)**1845 Cubo**

		CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	W tot	K - ølm - CRI
LED	grey	1.50	427445-00	427445-07	9	4000K - 954lm - CRI ≥ 80

1847 Orma

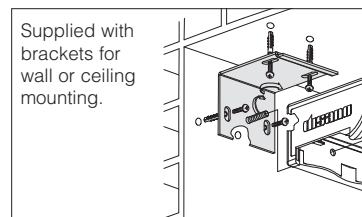
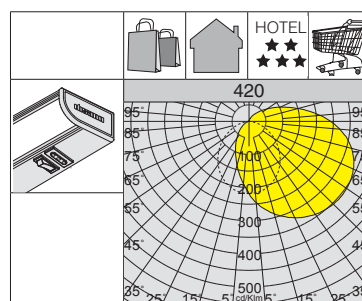
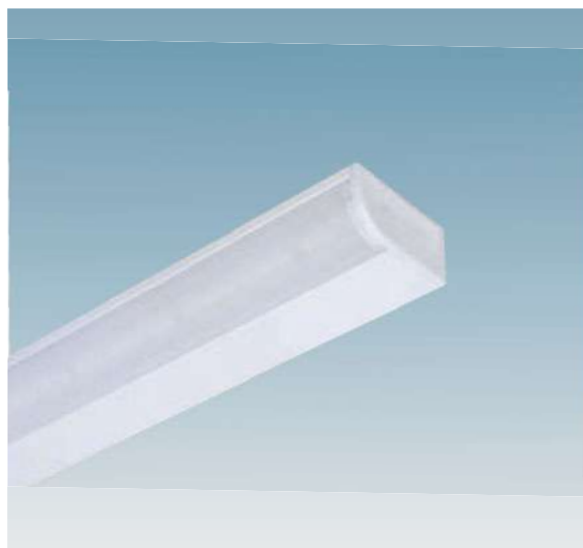
		CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI	
LED	grey	1.50	427542-00	9	4000K - 954lm - CRI ≥ 80	

IP43IK08

**GENERAL CHARACTERISTICS**

Housing: in extruded aluminium with ABS end caps.

Diffuser: in opal polycarbonate, fluted inside, smooth on the outside, dust-proof, UV stabilized.

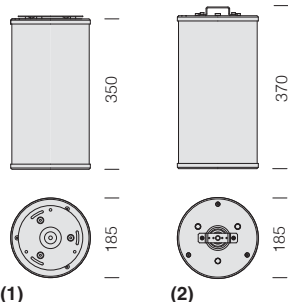
**420 Rigo**

				CLD		CLD with switch		CLD with socket & switch		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	L	weight	code	weight	code	weight	code	W tot	K - ølm - CRI	
LED	white	430 mm	1.50	214565-00	1.50	214565-54	1.50	214565-92	8	4000K - 833lm - CRI≥80	
		876 mm	2.00	214566-00	2.00	214566-54	2.00	214566-92	18	4000K - 1906lm - CRI≥80	
		1176 mm	2.50	214567-00	2.50	214567-54	2.50	214567-92	28	4000K - 2858lm - CRI≥80	

The lighting fixtures equipped with switch and/or socket have an IP20 protection rate.

LED: Luminous flux maintenance 80% 50.000h (L80B20). Power factor ≥0.9.

IP65IK08

**GENERAL CHARACTERISTICS**

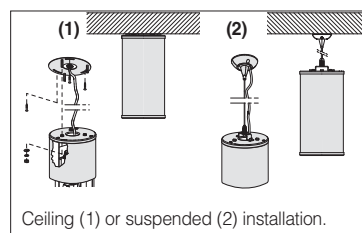
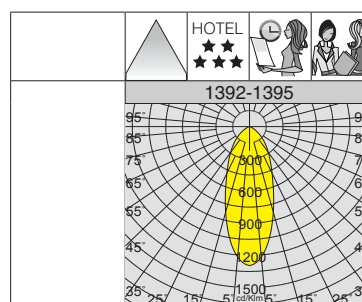
Housing: die-cast aluminium.

Reflector: 99.85 aluminium, oxidised and polished.

Diffuser: tempered glass, 4 mm thick, shock and heat resistant.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥0.9.

**1392 Cilindro 4 - ceiling (1)**

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	grey 9007	6.90	420435-00	28	4000K - 1764lm - 25° - CRI 90

1395 Cilindro 4 - suspension (2)

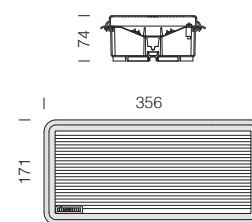
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	couleur	weight	code	W tot	K - ølm - CRI
LED COB	grey 9007	6.90	420436-00	28	4000K - 1764lm - 25° - CRI 90



LED: Power factor: $\geq 0,92$.
Luminous flux maintenance 80%:
50.000h (L80B20).



IP65IK08



GENERAL CHARACTERISTICS

Housing: vandal-resistant, self-extinguishing, UV-stabilized, anti-yellowing grey polycarbonate.

Diffuser: vandal resistant, V2 self-extinguishing, UV-stabilise, anti-glare frosted inside; smooth.

S.E. Emergency (Only emergency): in the event of a black-out the one lamp connected to the back-up circuit ignites, thus avoiding the inconvenience caused by a sudden absence of all light.

Emergency run time: 60/180 minutes. When power is restored, the battery recharges automatically in 12 hours.

S.A. Emergency (Maintained): in the event of a black-out the one lamp connected to the back-up circuit stays on, thus avoiding the inconvenience caused by a sudden absence of all light. When power is restored, the battery recharges automatically in 12 hours.

616 Safety 1h S.E.							
		CLD CEM-L		*Auto self-test		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	autonomy	W tot	K - ølm - CRI
LED	grey	1.00	112535-00	112535-0066	1h	2	4000K - 139lm - CRI 80

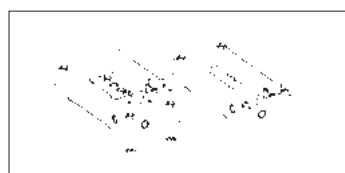
617 Safety 1h S.A.							
		CLD CEM-L		*Auto self-test		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	autonomy	W tot	K - ølm - CRI
LED	grey	1.00	112545-00	112545-0066	1h	8	4000K - 677lm - CRI 80

618 Safety 3h S.E.							
		CLD CEM-L		*Auto self-test		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	autonomy	W tot	K - ølm - CRI
LED	grey	1.00	112565-00	112565-0066	3h	2	4000K - 139lm - CRI 80

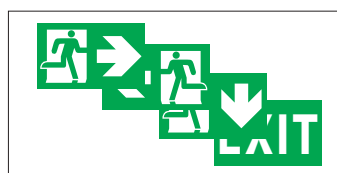
619 Safety 3h S.A.							
		CLD CEM-L		*Auto self-test		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	code	autonomy	W tot	K - ølm - CRI
LED	grey	1.00	112575-00	112575-0066	3h	8	4000K - 677lm - CRI 80

*Auto self-test (see chapter *Lighting management systems*).

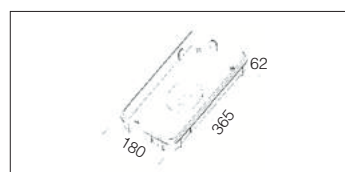
ACCESSORIES AND EXAMPLE OF INSTALLATION



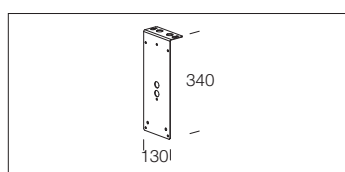
acc. 338 bracket for track	
	995226-00
Made of steel. To be used to install art. 616/617/618/619.	



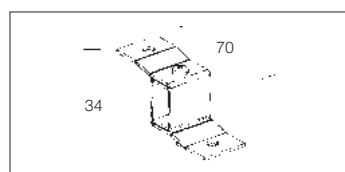
acc. 323 labels art. 616/7/8/9	
right out	995220-00
left out	995221-00
down out	995222-00
exit	995224-00
Self-adhesive pictograms available and visible up to 35 m. UNI EN1838	



acc. 321 outer shell	
black	995210-00
Made in polycarbonate. For recessed installation art. 616/617/618/619.	

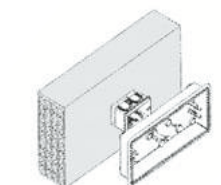


acc. 324 wall bracket	
	995223-00
Made of steel. To be used to install art. 614/615 with "banner effect on the wall". Also compatible for art. 616/617/618/619.	

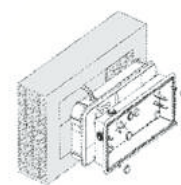


acc. 325 shook/panel bracket	
	995225-00
To be used to attach art. 616/617/618/619 to panels or shooks. 2pcs. for pack.	

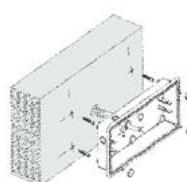
Example of installation art. 616/617/618/619



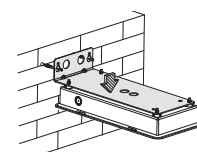
Recessed box installation



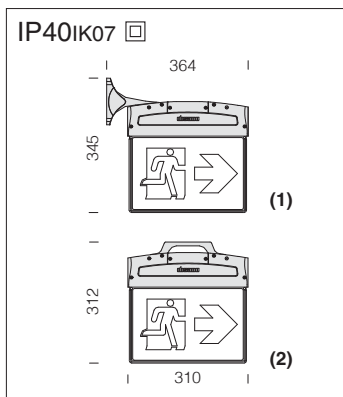
Recessed installation



Wall installation



Example of installation with acc. 324



GENERAL CHARACTERISTICS

Housing: in plastic material.

Reflector: in transparent plexiglass.

Equipment: supplied with accessories for wall, ceiling or suspended installation.

Version: emergency run time: 60/180 minutes. When power is restored, the battery recharges automatically in 12/24h hours.

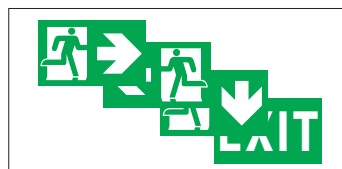


620 Safety Flag S.A.					
		CLD CEM-L		LED (tj= 25 °C)	
wattage	colour	weight	code	autonomy	K - CRI
LED	white	1.00	112581-00	1h	6000K - CRI>80
			112582-00	3h	6000K - CRI>80

ACCESSORIES AND EXAMPLE OF INSTALLATION

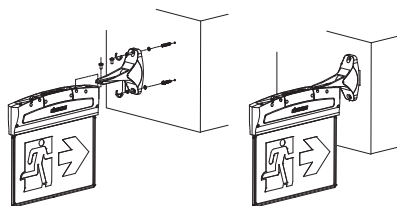
acc. 470 labels for art. 620	
right out	995133-00
left out	995134-00
down out	995135-00
exit	995136-00

Self-adhesive pictograms available and visible up to 37 m. UNI EN1838.

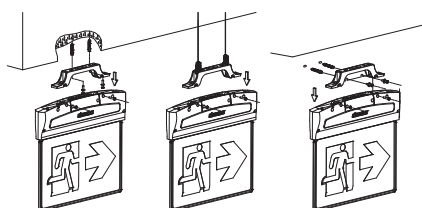


Example of installation art. 620

Wall installation.

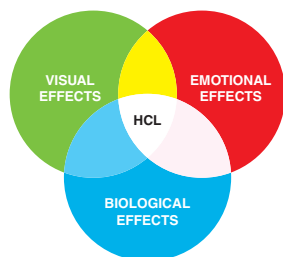


Ceiling or suspended installation



WHAT IS HUMAN CENTRIC LIGHTING AND HOW CAN WE ACHIEVE IT?

Human Centric Lighting (HCL) is a concept that represents a deep cultural change that aims to achieve a healthier and more balanced relationship with the spaces we live in. It follows criteria that show the beneficial and positive effects of natural and artificial lighting on our health, wellbeing, quality of life and daily activities in both the long and short terms.



And this is precisely the basic goal of Human Centric Lighting: **to design lights that don't take into account only of the visual effects, but also of the biological and emotional impact on humans.**

Our modern lifestyle is not aligned with nature's rhythms. We spend most of our time indoors where artificial lighting has virtually abolished the difference between day and night. Over the last decades, however, scientific research has made it clear that light isn't just for seeing, but also for governing how our body works from both the biological and psychological points of view.

The biologic clock (circadian rhythm)

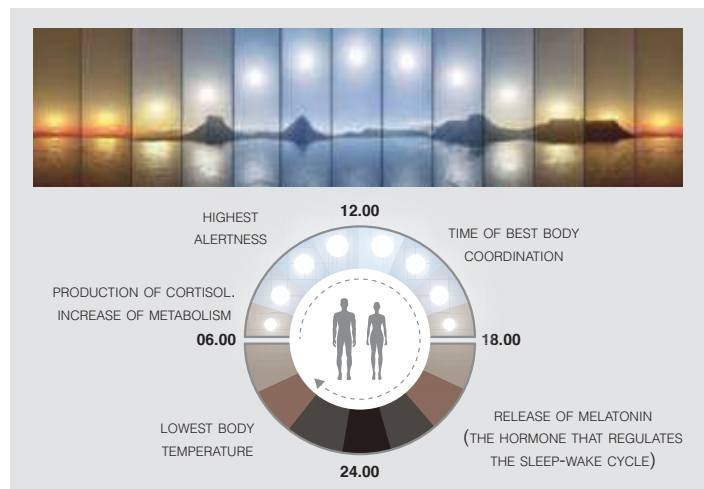
We use the definition of "**biological clock**" because, over the course of the day, the variations of light, from dawn to dusk, up to the dark of the night, send precise signals to our body, triggering specific psychological responses. **Blood pressure, body temperature** and the production of **specific hormones** vary over the course of 24 hours.

When we wake up, the morning light triggers processes that stimulate attention span, which reaches its peak during the central hours of the day, to then de-

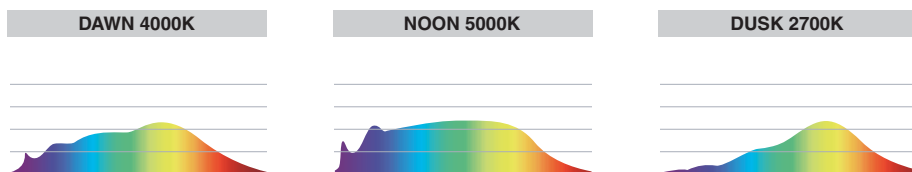
cline with the arrival of the evening in order to prepare our body for night-time rest. This mechanism, which varies according to seasons and individual characteristics, is necessary for our body to work properly. **A systematic disruption of our biological clock is harmful for our health.**

Numerous studies prove that the disruption of our sleep-wake cy-

cle provokes **fatigue and sleeping disorders**, it has a negative impact on mood and on our psychological wellbeing, it can cause **anxiety or depression**, as well as **gastrointestinal disorders** and, if prolonged over time, it increases the risk of **cardiovascular diseases** (strokes and heart attacks) and **metabolic disorders** (such as obesity and diabetes).



Therefore, according to research, it is important that **our body** receives the signals from **natural light** and its evolution **throughout the day**. Natural light has a different light spectrum with different wavelengths based on the time of the day:

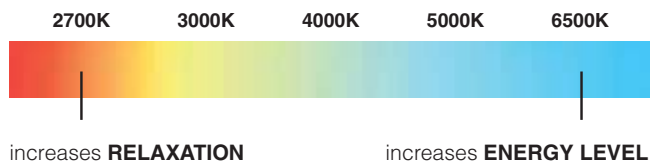


LED sources generally emit light in the blue wavelength spectrum, which is potentially harmful for our eyes and our health because they can influence the production of melatonin that may in turn impact our biological clock and alter our sleep-wake cycle.

Using lighting sources like **LED Tunable White** that can mimic the quality of natural light is key.

LED Tunable White for HCL applications

It is a latest generation LED technology that allows adjusting colour temperatures from 2700K to 6500K, from a warm light to a cold light. LED Tunable White modules for HCL applications contain two adjacent diodes that emit light at 2700K and 6500K, as well as intermediate colours by mixing colour temperatures.



Researchers have demonstrated that our brain is stimulated:

- by the **warm light** of morning and evening hours (2700K) increasing our sense of relaxation;
- by the **cold light** of daylight (6500 K) making us feel more energetic and concentrated.

This concept offers excellent visual and working conditions, but above all, it focuses on our **circadian rhythm**, which governs our biological clock. Our biorhythms depend on the signals deriving from the **amount and quality of natural light** and from the environmental **colour temperature**. In this way, Tunable White creates an environment capable of helping us in a natural way, just like daylight would do.



THE NEW FRONTIER OF HUMAN CENTRIC LIGHTING

The new LED lighting fixtures have features that allow artificial lights to mimic the **quality of natural light**, and have the necessary amount of light to allow us to complete, as best as possible, different work and study activities, as well as create a pleasant environment where lights can follow the natural trend of daylight.

Designers who follow the principles of **Human Centric Lighting** using the new LED fixtures will achieve:

• Greater amount of light:

LED sources cut down energy costs while achieving a high luminous flux in accordance with sustainable consumption patterns.

• Improved light quality:

the new sources combine high colour rendering and correct light distribution, guaranteeing maximum visual comfort; while anti-glare optics and the low-flicker sources protect human eyesight.

• Efficient light control:

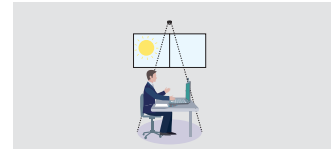
the possibility to adjust lights via more accurate and programmable control systems can dim lights during the day in order to reproduce the rhythm of outdoor light or automatically adjust them to the amount of daylight. Moreover, it is possible to choose the best amount of light for a certain type of activity, whether it is reading, working at the PC or a business meeting.

PRESENCE AND LIGHT SENSORS FOR HCL APPLICATIONS

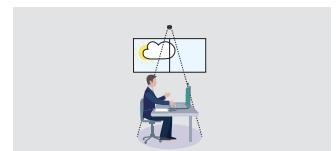
In addition to the **Tunable Light technology**, the fixtures can be equipped with **presence and light sensors** that allow adjusting artificial lighting, while keeping the lumen value set according to the room's occupancy and the contribution of natural light. The built-in sensor measures constantly the luminosity value in the environment and compares it with the value set in the presence detector.



1. Immediate detection of anyone entering within its range.



2. Adjustment of lights based on daylight



3. Constant measurement of the environment's lighting level.

For further information see chapter Lighting management systems and recommendations.

As we spend most of our time working or living indoors, we are forced to compensate for the lack of daylight with artificial lighting. Below are some examples of why it is important to achieve HCL in our common living spaces and workplaces.



Why choose HCL in the workplace?

High quality lighting, together with good interior design and an adequate ventilation/air conditioning of spaces are key elements of the ideal office. In particular, a lighting system that applies, even if only partly, the principles of Human Centric Lighting (HCL) allows building a space that facilitates work, improves concentration and protects the health of workers.



Why choose HCL in education institutions?

The possibility to study in a comfortable, pleasant and well-illuminated environment increases academic performance. This means that fixtures installed in classrooms, laboratories and corridors should be chosen not only to meet viewing needs, but also to create a study and work environment that is pleasant and functional, while also being energy-efficient and low-cost.



Why choose HCL in healthcare facilities?

With the right fixtures and the correct Human Centric Lighting approach it is possible to choose different colour temperatures and light levels for different rooms based on the amount of daylight entering the room at specific hours of the day, with pleasant and soothing results..



Why choose HCL in industrial plants?

Safety, health and productivity are the keywords that summarize the benefits of a technologically up-to-date lighting system in an industrial environment. These benefits are also at the basis of the revolutionary Human Centric Lighting approach that puts people and their wellbeing at the centre of lighting design.



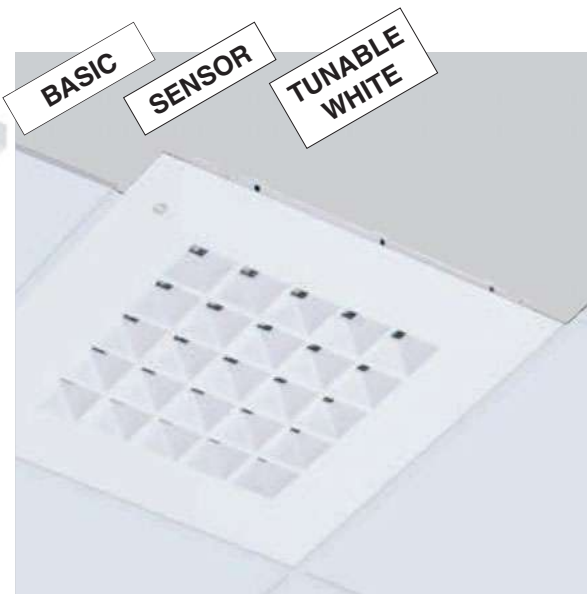
acc. 595 frame 600x600 h70	
white	998035-00
Frame in white-coated aluminium; to be used for ceiling installation of Comfortsquare LED.	

ADVANTAGES:

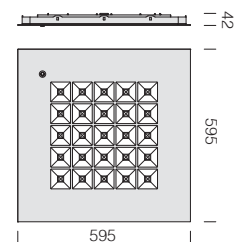
- Easy to use
- Possibility to change the colour of light manually (no circadian cycle)

APPLICATIONS:

- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices



v.a. IP20IK07
v.l. IP43IK07



Housing: self-extinguishing injection-moulded polycarbonate in RAL 9016 colour.

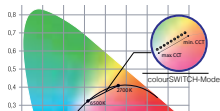
Optics: secondary lenses in PMMA with high transparency and non-yellowing properties.

LED: Luminous flux maintenance 80%: 80.000h (L80B20). Luminous flux maintenance 90%: 40.000h (L90B10). Power factor ≥ 0.95 . Photobiological safety class: exempt group.

812 Comfortsquare **TW - PRESENCE AND LIGHT SENSOR**

		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - CRI - degrees
LED	white	4.00	150330-1924	28	2700K (2452lm) ÷ 6500K (2658lm) - CRI 80 - 43°

The standard version of Comfortsquare integrates a presence/lighting sensor to turn lights on or off when it detects occupancy in the room and based on the level of light at that moment.

TECHNICAL CHARACTERISTICS - COMFORTSQUARE **TW BASIC VERSION**

- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- MacAdams 3
- Full 3% to 100% dimming range
- $\leq 4\%$ flicker
- Constant colour temperature over the entire dimming range
- Constant luminous flux

colourSWITCH function

A conventional pushbutton can be used to control the system via colourSWITCH. Use of pushbutton with indicator lamp is not permitted. If the device is controlled via DALI/DSI, colourSWITCH is not available. For control via a pushbutton different settings can be made:

- Short press: setting the colour temperature via colourSWITCH mode with 9 values between 2,700 and 6,500 K.
- Long press (> 1 s): stepless setting of colour temperature. After completion the colour temperature direction will be inverted. In installations with LED Drivers with different colour temperature or opposite colour temperature directions (e.g. after a system extension), all LED Drivers can be synchronized to 4,500 K by a 10 s push.

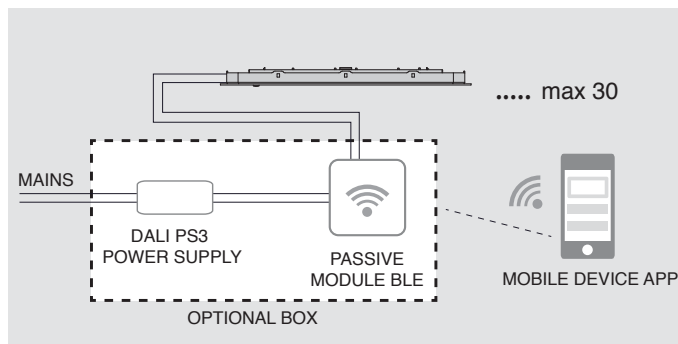
switchDIM function

Integrated switchDIM function allows a direct connection of a pushbutton for dimming and switching. Brief push (< 0.6 s) switches LED Driver ON and OFF. The dim level is saved at power-down and restored at power-up. When the pushbutton is held, LED modules are dimmed. After releasing and pushing the LED modules are dimmed in the opposite direction. In installations with LED Drivers with different dimming levels or opposite dimming directions (e.g. after a system extension), all LED Drivers can be synchronized to 50 % dimming level by a 10 s push. Use of pushbutton with indicator lamp is not permitted.

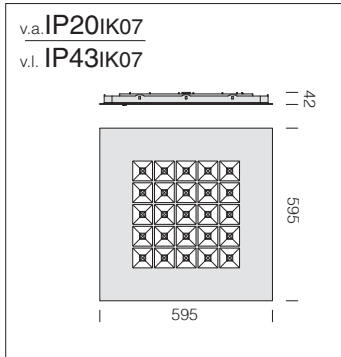
COMFORTSQUARE - **HCL BASIC VERSION****HCL BASIC INSTALLATION EXAMPLE**

Comfortsquare can be upgraded to the HCL version (with pre-set circadian cycle) by purchasing the DALI PS3 supplier and the BLE transmitter (that does not need a control line) separately and connecting it downstream the system in order to control maximum 30 fixtures. The ceiling fixture can be easily controlled from a smartphone/tablet via an app.

COMPONENTS	CODE
power supply DALI PS3	986440-00
BLE Passive module	986441-00
APP 4remote BT (to download on iOS or Android)	free



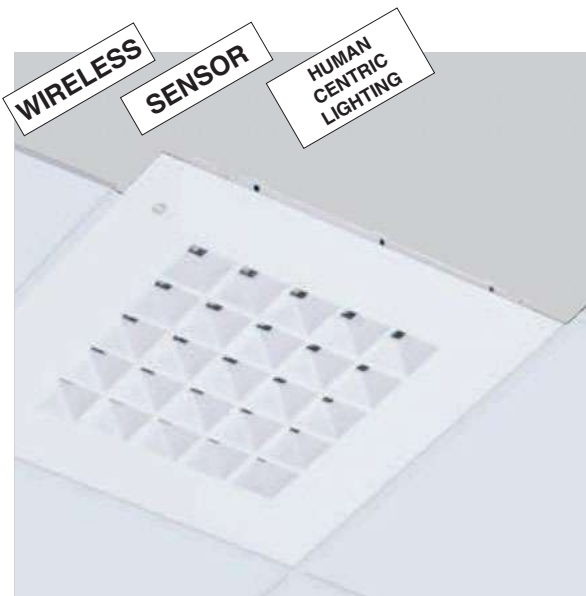
Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).



Housing: self-extinguishing injection-moulded polycarbonate in RAL 9016 colour.

Optics: secondary lenses in PMMA with high transparency and non-yellowing properties.

LED: Luminous flux maintenance 80%: 80.000h (L80B20).
Luminous flux maintenance 90%: 40.000h (L90B10).
Power factor ≥ 0.95 .
Photobiological safety class: exempt group.



acc. 595 frame 600x600 h70	
white	998035-00
Frame in white-coated aluminium; to be used for ceiling installation of Comfortsquare LED.	

ADVANTAGES:

- Simulation of daylight changes throughout the day
- Circadian cycle: colour changes automatically based on the time of the day and daylight

APPLICATIONS:

- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices

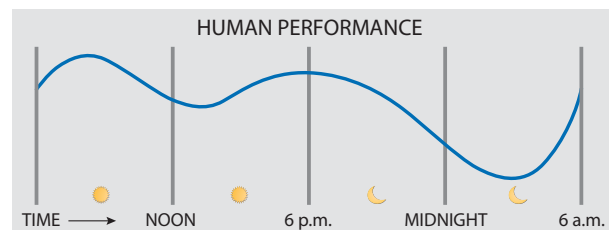
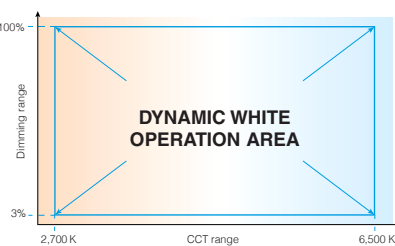


813 Comfortsquare HCL - WIRELESS - PRESENCE AND LIGHT SENSOR					
			CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	white	4.00	150331-1989	28	2700K (2452lm) ÷ 6500K (2658lm) - CRI 80 - 43°

The standard version of Comfortsquare integrates a presence/lighting sensor to turn lights on or off when it detects occupancy in the room and based on the level of light at that moment. When lights switch on, the ceiling lamp will reset from the pre-set cycle.

TECHNICAL CHARACTERISTICS - HCL WIRELESS VERSION

- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- MacAdams 3
- Full 3% to 100% dimming range
- $\leq 4\%$ flicker
- Constant colour temperature over the entire dimming range
- Constant luminous flux
- LED driver that automatically adjusts lights to the desired colour temperature and the required luminous flux

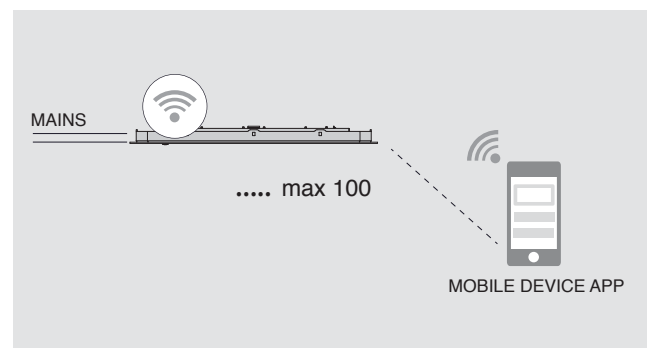


The Dynamic White function allows adjusting the colour temperature from 2700K to 6500K to create a sense of the passing of time (circadian rhythm) and to set the mood and ambiance of a space according to our daily activities. Circadian lighting obtained with the Dynamic White function is the best solution to implement Human Centric Lighting (HCL) in classrooms, university campuses, offices and hospitals where lights can mimic the natural trend of daylight throughout the entire day.

HCL WIRELESS INSTALLATION EXAMPLE (POINT-TO-POINT)

The wireless driver is integrated directly into the panel that does not require additional accessories. Comfortsquare can be easily controlled from a smartphone/tablet via the free app.

COMPONENTS	CODE
Nr. 4 Comfortsquare 813 (max.100)	150331-1989
APP 4 remote BT (to download on iOS or Android)	free



Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).

**ADVANTAGES:**

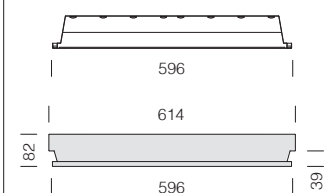
- Easy to use
- Possibility to change the colour of light manually (no circadian cycle)

APPLICATIONS:

- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices

v.a. IP20IK06

v.l. IP54IK06



Housing: in sheet steel, contact mounting on the cross T structure.

Diffuser: in opal engineering plastic with high thermal transmittance.

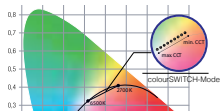
Wiring: rapid wiring connection, the fixture does not need to be opened.

LED: Luminous flux maintenance 80%; 50.000h (L80B20).

Power factor ≥ 0.95 .

Photobiological safety class: exempt group.

845 Comfort Panel TW - BASIC					
			CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.00	150223-0024	35	2700K÷6500K - 3479lm - CRI 90

TECHNICAL CHARACTERISTICS - COMFORT PANEL **TW BASIC VERSION**

- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- MacAdams 3
- Full 3% to 100% dimming range
- $\leq 4\%$ flicker
- Constant colour temperature over the entire dimming range
- Constant luminous flux

colourSWITCH function

A conventional pushbutton can be used to control the system via colourSWITCH. Use of pushbutton with indicator lamp is not permitted. If the device is controlled via DALI/DSI, colourSWITCH is not available. For control via a pushbutton different settings can be made:

- Short press: setting the colour temperature via colourSWITCH mode with 9 values between 2,700 and 6,500 K.
- Long press (> 1 s): stepless setting of colour temperature. After completion the colour temperature direction will be inverted. In installations with LED Drivers with different colour temperature or opposite colour temperature directions (e.g. after a system extension), all LED Drivers can be synchronized to 4,500 K by a 10 s push.

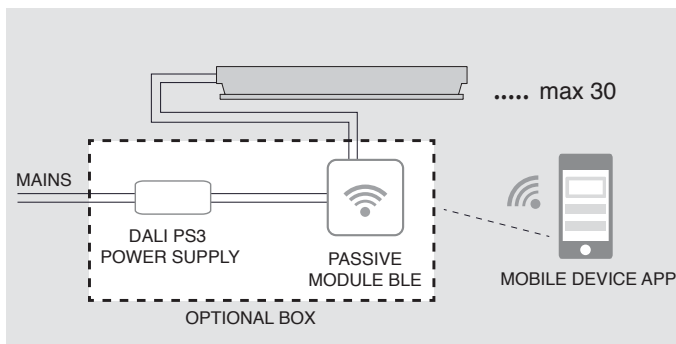
switchDIM function

Integrated switchDIM function allows a direct connection of a pushbutton for dimming and switching. Brief push (< 0.6 s) switches LED Driver ON and OFF. The dim level is saved at power-down and restored at power-up. When the pushbutton is held, LED modules are dimmed. After releasing and pushing the LED modules are dimmed in the opposite direction. In installations with LED Drivers with different dimming levels or opposite dimming directions (e.g. after a system extension), all LED Drivers can be synchronized to 50 % dimming level by a 10 s push. Use of pushbutton with indicator lamp is not permitted.

COMFORT PANEL - **HCL BASIC VERSION****HCL BASIC INSTALLATION EXAMPLE**

Comfort Panel can be upgraded to the HCL version (with pre-set circadian cycle) by purchasing the DALI PS3 supplier and the BLE transmitter (that does not need a control line) separately and connecting it downstream the system in order to control maximum 30 fixtures. The ceiling fixture can be easily controlled from a smartphone/tablet via an app.

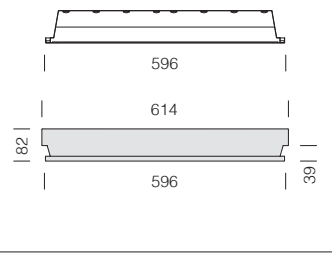
COMPONENTS	CODE
power supply DALI PS3	986440-00
BLE Passive module	986441-00
APP 4remote BT (to download on iOS or Android)	free



Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).

v.a. IP20IK06

v.l. IP54IK06



Housing: in sheet steel, contact mounting on the cross T structure.

Diffuser: in opal engineering plastic with high thermal transmittance.

Wiring: rapid wiring connection, the fixture does not need to be opened.

LED: Luminous flux maintenance 80%; 50.000h (L80B20). Power factor ≥ 0.95 .

Photobiological safety class: exempt group.



ADVANTAGES:

- Simulation of daylight changes throughout the day
- Circadian cycle: colour changes automatically based on the time of the day and daylight

APPLICATIONS:

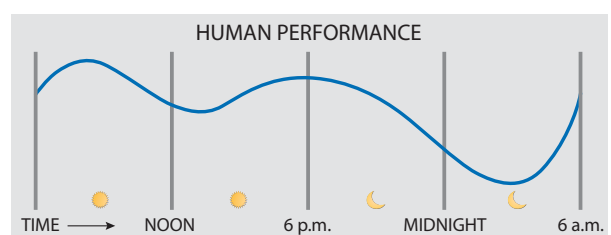
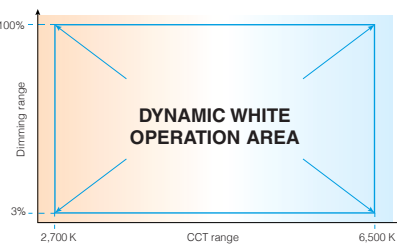
- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices



845 Comfort Panel HCL - WIRELESS					
CLD D-D (DALI)				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	white	3.00	150223-89	35	2700K÷6500K - 3479lm - CRI 90

TECHNICAL CHARACTERISTICS - HCL WIRELESS VERSION

- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- CRI 90 MacAdams 3
- Full 3% to 100% dimming range
- Switch-off fading
- <4% flicker
- Constant colour temperature over the entire dimming range
- LED driver that automatically adjusts lights to the desired colour temperature and the required luminous flux

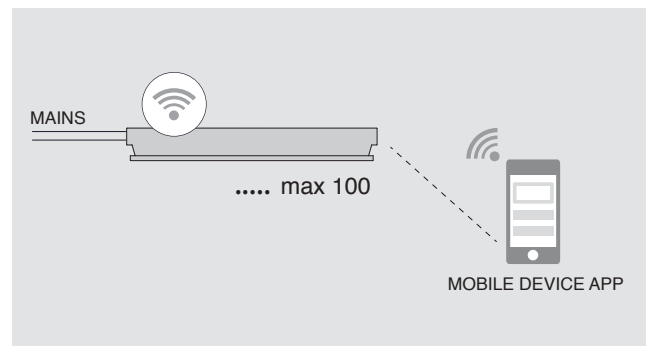


The Dynamic White function allows adjusting the colour temperature from 2700K to 6500K to create a sense of the passing of time (circadian rhythm) and to set the mood and ambiance of a space according to our daily activities. Circadian lighting obtained with the Dynamic White function is the best solution to implement Human Centric Lighting (HCL) in classrooms, university campuses, offices and hospitals where lights can mimic the natural trend of daylight throughout the entire day.

HCL WIRELESS INSTALLATION EXAMPLE (POINT-TO-POINT)

The wireless driver is integrated directly into the panel that does not require additional accessories. Comfort Panel can be easily controlled from a smartphone/tablet via the free app.

COMPONENTS	CODE
Nr. 4 Comfort Panel 845 (max.100)	150223-89
APP 4 remote BT (to download on iOS or Android)	free



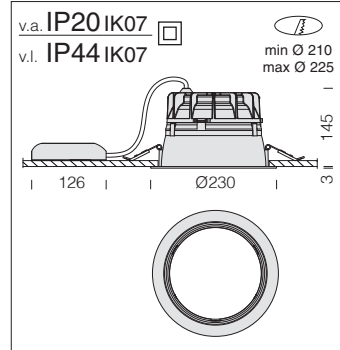
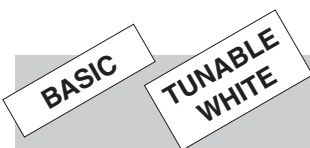
Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).

**ADVANTAGES:**

- Easy to use
- Possibility to change the colour of light manually (no circadian cycle)

APPLICATIONS:

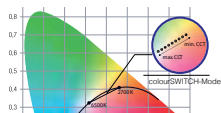
- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices



Housing-reflector: in shatterproof self-extinguishing V0 polycarbonate, metalized with high-grade aluminium powers and equipped with anti-reflexion and anti-glare optics. Springs for false ceiling mounting are made in galvanised steel wire. Lamp shielding angle of 65°.

LED: Power factor ≥ 0.92 . Luminous flux maintenance 90%: 55.000h (L90B10). Photobiological safety class: exempt group.

885 Compact Dark TW - BASIC					
			CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	white	1.10	156451-0024	24	2700K÷6500K - 2360lm - CRI 80



- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- MacAdams 3
- Full 3% to 100% dimming range
- $\leq 4\%$ flicker
- Constant colour temperature over the entire dimming range
- Constant luminous flux

TECHNICAL CHARACTERISTICS - COMPACT DARK **TW BASIC VERSION****colourSWITCH function**

A conventional pushbutton can be used to control the system via colourSWITCH. Use of pushbutton with indicator lamp is not permitted. If the device is controlled via DALI/DSI, colourSWITCH is not available. For control via a pushbutton different settings can be made:

- Short press: setting the colour temperature via colourSWITCH mode with 9 values between 2,700 and 6,500 K.
- Long press (> 1 s): stepless setting of colour temperature. After completion the colour temperature direction will be inverted. In installations with LED Drivers with different colour temperature or opposite colour temperature directions (e.g. after a system extension), all LED Drivers can be synchronized to 4,500 K by a 10 s push.

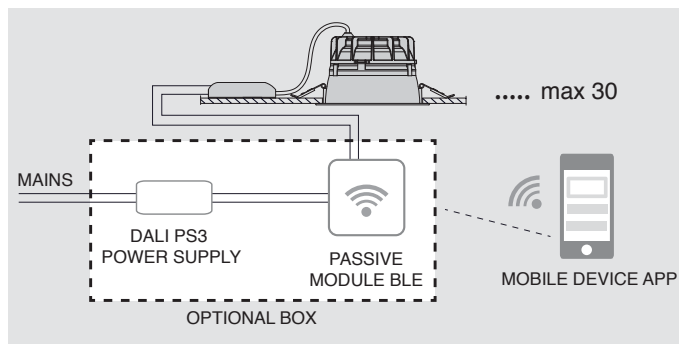
switchDIM function

Integrated switchDIM function allows a direct connection of a pushbutton for dimming and switching. Brief push (< 0.6 s) switches LED Driver ON and OFF. The dim level is saved at power-down and restored at power-up. When the pushbutton is held, LED modules are dimmed. After releasing and pushing the LED modules are dimmed in the opposite direction. In installations with LED Drivers with different dimming levels or opposite dimming directions (e.g. after a system extension), all LED Drivers can be synchronized to 50 % dimming level by a 10 s push. Use of pushbutton with indicator lamp is not permitted.

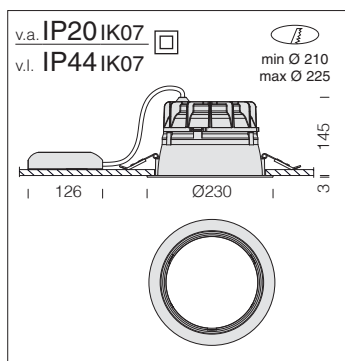
COMPACT DARK - **HCL BASIC VERSION****HCL BASIC INSTALLATION EXAMPLE**

Compact Dark can be upgraded to the HCL version (with pre-set circadian cycle) by purchasing the DALI PS3 supplier and the BLE transmitter (that does not need a control line) separately and connecting it downstream the system in order to control maximum 30 fixtures. The ceiling fixture can be easily controlled from a smartphone/tablet via an app.

COMPONENTS	CODE
power supply DALI PS3	986440-00
BLE Passive module	986441-00
APP 4remote BT (to download on iOS or Android)	free



Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).



Housing-reflector: in shatterproof self-extinguishing V0 polycarbonate, metalized with high-grade aluminium powers and equipped with anti-reflexion and anti-glare optics. Springs for false ceiling mounting are made in galvanised steel wire. Lamp shielding angle of 65°.

LED: Power factor $\geq 0,92$.
Luminous flux maintenance 90%:
55.000h (L90B10).
Photobiological safety class:
exempt group.



ADVANTAGES:

- Simulation of daylight changes throughout the day
- Circadian cycle: colour changes automatically based on the time of the day and daylight

APPLICATIONS:

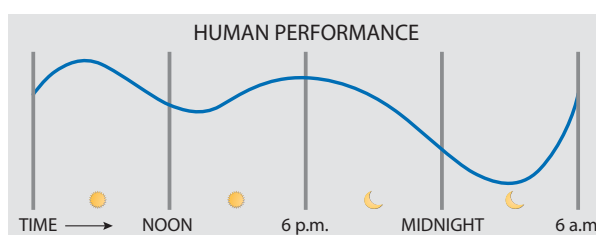
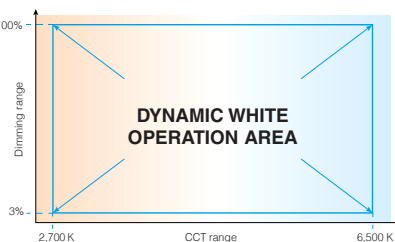
- Corridors, stairs, entrances
- Public spaces: shops, hotels and restaurants
- Public buildings and offices



885 Compact Dark HCL - WIRELESS					
			CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	white	1.10	156451-89	24	2700K÷6500K - 2360lm - CRI 80

TECHNICAL CHARACTERISTICS - **HCL** WIRELESS VERSION

- Colour temperature adjustment range from 2700K to 6500K on a linear scale
- CRI 90 MacAdams 3
- Full 3% to 100% dimming range
- Switch-off fading
- <4% flicker
- Constant colour temperature over the entire dimming range
- LED driver that automatically adjusts lights to the desired colour temperature and the required luminous flux

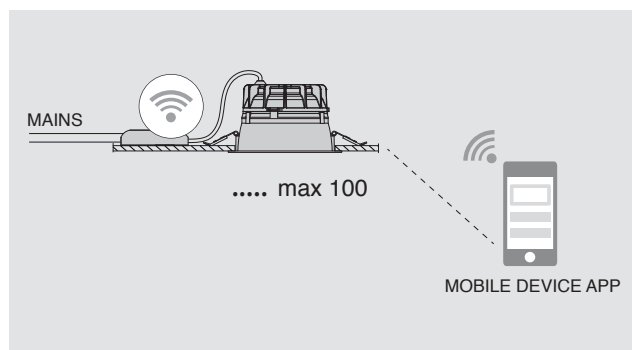


The Dynamic White function allows adjusting the colour temperature from 2700K to 6500K to create a sense of the passing of time (circadian rhythm) and to set the mood and ambiance of a space according to our daily activities. Circadian lighting obtained with the Dynamic White function is the best solution to implement Human Centric Lighting (HCL) in classrooms, university campuses, offices and hospitals where lights can mimic the natural trend of daylight throughout the entire day.

HCL WIRELESS INSTALLATION EXAMPLE (POINT-TO-POINT)

The standard version of the fixture comes with a wireless driver. Compact Dark can be easily controlled from a smartphone/tablet via a free app.

COMPONENTS	CODE
Nr. 4 Compact Dark 885 (max.100)	156451-89
APP 4 remote BT (to download on iOS or Android)	free



Upon request: possibility for the various options for managing the supply point with presence/light sensors (see chapter *Lighting management systems and recommendations*).



OTTIMA



Ottima [p. 68](#)

HYDRO - THEMA

HIGH PERFORMANCE
FSMONEY SAVING
BASICHYDRO STYLE
ICE/HT

THEMA



Hydro [p. 72](#)

high performance [p. 74](#)

high performance FS [p. 75](#)

money saving [p. 76](#)

STYLE [p. 78](#)

ICE/HT [p. 79](#)

Thema [p. 80](#)

ECHO

ENERGY SAVING
3000K - 6500KHIGH PERFORMANCE
FS

RADAR SENSOR

3000K - 6500K
DESIGNED TO FIT LED TUBES

Echo [p. 82](#)

energy saving [p. 84](#)

3000K/6500K [p. 85](#)

high performance [p. 86](#)

FS [p. 87](#)

radar sensor [p. 88](#)

HE - high efficiency [p. 90](#)

for LED tubes [p. 91](#)

FORMA - STEEL



HE



ATEX



HT



Forma [p. 92](#)

RADON

HE - HP



WIDE BEAM



HE - HP ELLIPTICAL BEAM



HORTICULTURE



Radon [p. 98](#)



GENERAL CHARACTERISTICS

Housing: injection moulded, in grey polycarbonate, shatter-proof, UV-stabilised, highly resistant to mechanical impacts thanks to the reinforced structure with internal ribbing.

Diffuser: transparent polycarbonate injection-moulded diffuser with grooves and internal opaque satin finish for greater lighting diffusion, V2 self-extinguished, UV stabilised, outer smooth finish for easy cleaning and to maximize lighting efficiency. Closure with clamps and stainless steel safety screws.

Reflector: in galvanised steel, previously stone-enamelled with UV-stabilised polyester resin. Clamping device manufactured directly onto the housing.

Standard supply: eco-friendly and anti-aging expanded polyurethane injected gasket. The fixing brackets for ceiling and suspension mounting are in stainless steel.

For installations with direct exposure to sunlight, we recommend using Forma LED.

LED: Power factor: $\geq 0,95$.

Luminous flux maintenance

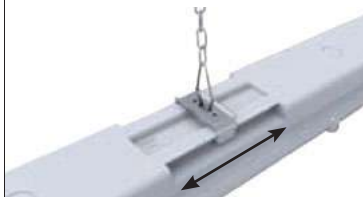
	25-34-39-48-53W L80B20 - 120.000h
971 high performance	57-61-65 W L80B20 - 100.000h
974 energy saving	L80B20 - 80.000h

OTHER CHARACTERISTICS



Greater performance

The fixture is made with first-choice polycarbonate stabilised against UV light. It has been treated to eliminate glare without affecting performance. Polycarbonate with excellent diffusion coefficient and lighting transmission.



The stainless steel bracket supplied as standard allows easy and safe installation of the lighting fixture onto the ceiling/wall (with the possibility to adjust the mounting space). The standard spring loop allows quick connection to any chain suspension system.



Socket-plug connector. The fixture is secured to the fixing brackets through quick connectors.

OTHER INFORMATION



Self-extinguishing

U.L.94 is a widely accepted USA flammability standard that classifies plastics according to how they burn. The **OTTIMA** fixture is made of **V2** self-extinguishing plastic material: burning stops within **25 seconds**.

Glow wire test

Glow wire tested at 850°C.

ALL LIGHT: no glare. The special surface finish of the diffuser allows light to escape, creating an "all light" effect. The fluted diffuser spreads light evenly without leaving dark areas.



Product with a very low flicker; uniform light for greater eye protection.

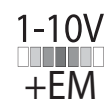
UPON REQUEST



Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



With **1-10V dimmable electronic gear + emergency: subcode -94.**



Version **CLDEC** wiring with **subcode -0050:** permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.

ACCESSORIES AND INSTALLATION

acc. 978 wall bracket

galvanized	998078-00
Made of galvanized steel. For installation of Ottima LED fixtures on walls.	



acc. 975 protection guard

white	165565-00
White plastic-coated steel rod. To be installed directly on the ceiling.	



acc. 6036 universal conn.

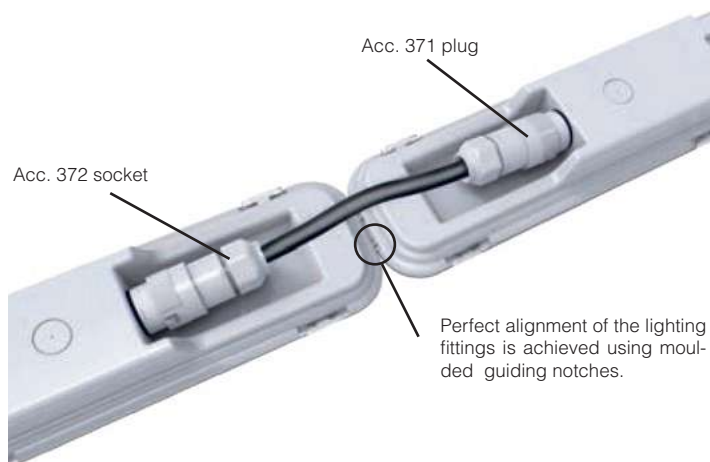
galvanized	132987-00
Made of galvanized steel. To install non-corrosive fixtures on track art. 6000.	



Continuous row with special body

For the installation in continuous row, order the special body with subcode **-0072**; as standard, it is supplied complete with acc. 371 (plug) and acc. 372 (socket). Extra price.

Note: the last fixture of the row must be of the standard type.



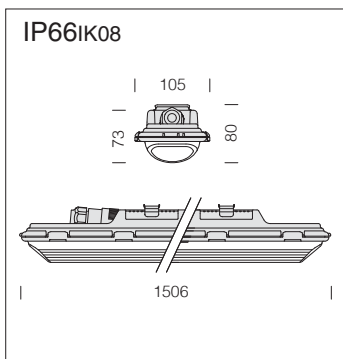


Energy saving: the comparison shows how OTTIMA can save more energy compared to conventional florescent lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.

Fixture	room (m)	LUX	Qty	P tot W	Energy saving
Ottima - 7400lm (RELAMPING)	40x20x3,5	388	50	1950	65%
Ottima - 7400lm (NEW SYSTEM)	40x20x3,5	315	40	1560	72%
2X58W CEL	40x20x3,5	324	50	5500	-

Fixture	room (m)	LUX	Qty	P tot W	Energy saving
Ottima - 7700lm (RELAMPING)	40x20x3,5	404	50	2200	60%
Ottima - 7700lm (NEW SYSTEM)	40x20x3,5	328	40	1760	68%
2X58W CEL	40x20x3,5	324	50	5500	-

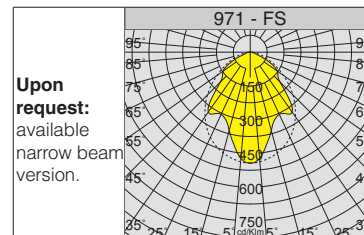
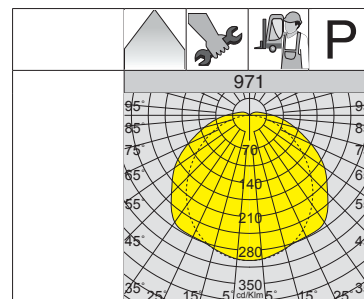
Fixture	room (m)	LUX	Qty	P tot W	Energy saving
Ottima - 9555lm (RELAMPING)	60x40x6	302	95	5415	63%
2X80W CEL	60x40x6	335	95	14820	-



LED: Power factor: $\geq 0,95$.

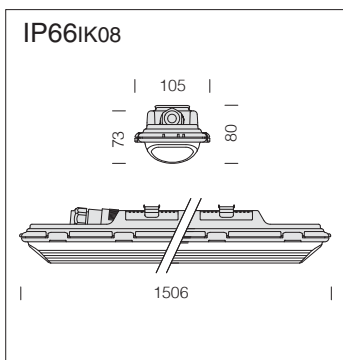
25-34-39-48-53W = luminous flux maintenance 80%: 120.000h (L80B20).

***57-61-65W** = luminous flux maintenance 80%: 100.000h (L80B20).



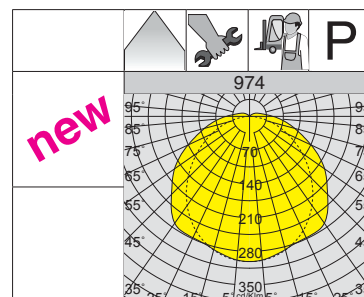
WATER-PROOF

971 Ottima							
wattage	colour	weight	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	2,00	164770-00	164770-07	164770-0041	25	4000K - 4302lm - CRI \geq 80
			164777-00	164777-07	164777-0041	34	4000K - 6300lm - CRI \geq 80
			164771-00	164771-07	164771-0041	39	4000K - 7400lm - CRI \geq 80
			164772-00	164772-07	164772-0041	48	4000K - 8438lm - CRI \geq 80
			164773-00	164773-07	164773-0041	53	4000K - 9017lm - CRI \geq 80
			*164774-00	164774-07	164774-0041	57	4000K - 9555lm - CRI \geq 80
			*164775-00	164775-07	164775-0041	61	4000K - 10041lm - CRI \geq 80
			*164776-00	164776-07	164776-0041	65	4000K - 10600lm - CRI \geq 80



LED: Power factor: $\geq 0,95$.

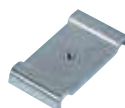
Luminous flux maintenance 80%: 80.000h (L80B20).



974 Ottima							
wattage	colour	weight	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	2,00	164785-00	164785-07	164785-0041	44	4000K - 7700lm - CRI \geq 80
			164787-00	164787-07	164787-0041	56	4000K - 9100lm - CRI \geq 80

**acc. 938 junction sleeve**

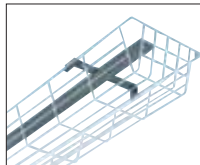
grey	998073-00
Polycarbonate, for jointing and transit of power supply cables (internal Ø 13 mm) between lighting fixtures (max distance 30 m). 2 per pack.	

**acc. 6036 universal conn.**

galvanised	132987-00
Made of galvanized steel. To install non-corrosive fixtures on track art. 6000.	

**acc. 978 wall bracket**

galvanized	998078-00
Made of galvanized steel. For installation of Hydro LED fixtures on walls.	

**acc. 975 protection guard**

white	1300mm	165564-00
White plastic-coated steel rod. To be installed directly on the ceiling.		

GENERAL CHARACTERISTICS

Housing: injection moulded, in grey polycarbonate, shatter-proof, UV-stabilised, highly resistant to mechanical impacts thanks to the reinforced structure with internal ribbing.

Diffuser: injected moulded in polycarbonate with internal ribbing for greater lighting control, in V2 self-extinguishing, UV-stabilised material; its smooth outer finish makes cleaning easier and increases lighting efficiency. Equipped with stainless steel screw clamping.

Reflector: in galvanised steel, previously stone-enamelled with UV-stabilised polyester resin. Clamping device manufactured directly onto the housing.

Standard supply: eco-friendly and anti-aging expanded polyurethane injected gasket. The fixing brackets for ceiling and suspension mounting are in stainless steel. Socket-plug connector. The fixture is secured to the fixing brackets through quick connectors.

For installations with direct exposure to sunlight, we recommend using Forma LED.

LED: Power factor: $\geq 0,95$.

Luminous flux maintenance	
Hydro money saving	L80B20 - 50.000h
Hydro high performance	L80B20 - 80.000h
Thema	L80B50 - 50.000h

Photobiological safety class: exempt group.
Ambient temperature: -30°C to + 40°C.

OTHER CHARACTERISTICS



Greater performance

The fixture is made with first-choice polycarbonate stabilised against UV light. It has been treated to eliminate glare without affecting performance. Polycarbonate with excellent diffusion coefficient and lighting transmission.



Standard stainless steel mounting bracket enables quick and easy installation of the fixture to ceiling surfaces.

Standard spring loop allows quick connection to any chain suspension system.



Perfect alignment of the lighting fittings is achieved using moulded guiding notches.



STAINLESS steel safety screw-type clamping. It can be opened to replace the batteries as needed. Injected gasket in anti-aging and eco-friendly material.

OTHER INFORMATION



Self-extinguishing

U.L.94 is a widely accepted USA flammability standard that classifies plastics according to how they burn. The **HYDRO/THEMA** fixture is made of **V2** self-extinguishing plastic material: burning stops within **25 seconds**.

Glow wire test

Glow wire tested at 850°C.

ALL LIGHT: no glare

The special surface finish of the diffuser allows light to escape, creating an "all light" effect. The fluted diffuser spreads light evenly without leaving dark areas.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



With **1-10V dimmable electronic gear + emergency: subcode -94**.

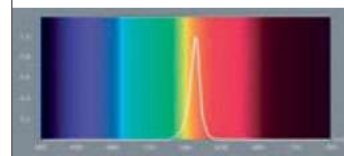


Version **CLD EC** wiring with **subcode -0050**: permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.



Version with special **AMBER colour LED** sources for wine processing and storage facilities. **Note:** when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

AMBER LED light spectrum with no blue or violet wavelengths.

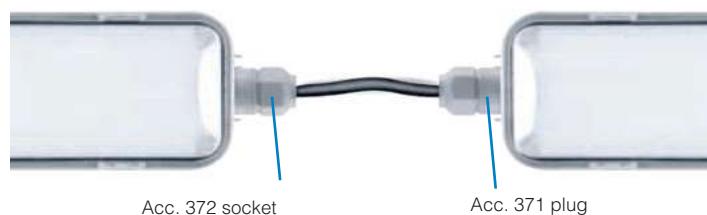


ACCESSORIES AND INSTALLATION

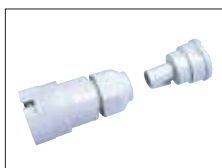
Continuous line alignment: continuous electric line connection: a through-line wiring arrangement and socket/plug type connectors from the first of the last lighting fitting is required for this type of installation. (Lighting fitting supplied Upon request **sub-code -0072** at an extra price).



Installation with cable and lighting fitting with sub-code -0072: continuous electric line connection using acc. 371 plug and acc. 372 socket, with the lighting fittings with **sub-code 0072** at an extra price.



acc. 370 connector for ø20 tube	
grey	998040-00
For use with acc. 371-372 tube connector installation. 10 per pack.	

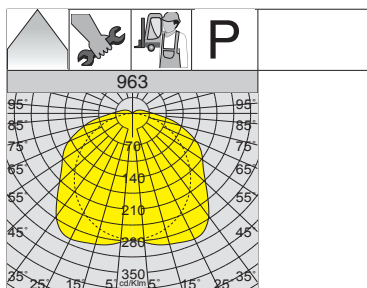


acc. 371 quick connector plug	
grey	998041-00
Always to be used for continuous line with wire. Cable gland with inlet cable 16A min. ø 9 max ø12 mm. 10 per pack.	



acc. 372 quick connector socket	
grey	998042-00
Always to be used for continuous line with wire. Cable gland with inlet cable 16A min. ø 9 max ø12 mm. 10 per pack.	

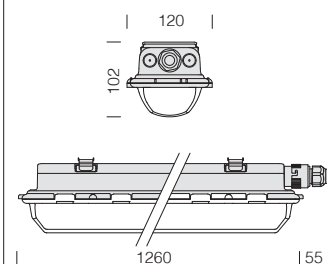




This product is compliant with the **Premium LED L90** – 36,000h USA standard.



IP66IK08



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
80.000h (L80B20).

963 Hydro - LED

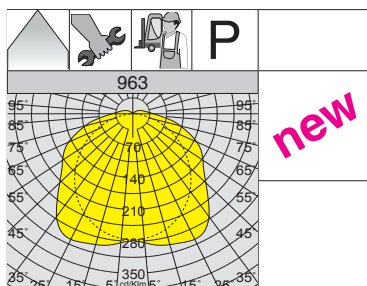
wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	grey	1,80	164762-00	164762-07	20	4000K - 3028lm - CRI \geq 80
			164764-00	164764-07	34	4000K - 5547lm - CRI \geq 80

963 Hydro - LED

wattage	colour	weight	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	grey	1,80	164764-0041	34	4000K - 5547lm - CRI \geq 80

Upon request:

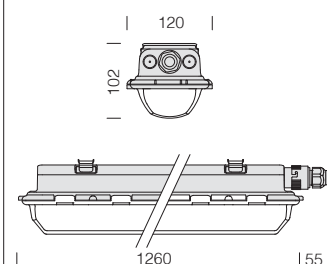
- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
 - with pass-through wiring for **continuous line mounting: subcode -0072**;
 - with **1-10V dimmable electronic gear + emergency: subcode -94**;
 - with emergency wiring with centralized power supply: **sub-code -0050**.
- (the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)



This product is compliant with the **Premium LED L90** – 36,000h USA standard.



IP66IK08



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
80.000h (L80B20).

963 Hydro - LED

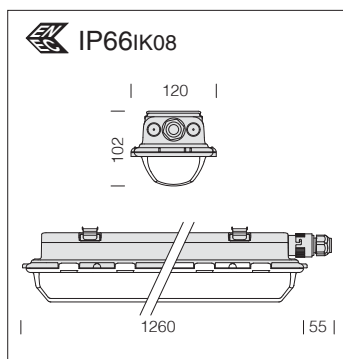
wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	grey	1,80	164763-00	164763-07	27	4000K - 3749lm - CRI \geq 80
			164765-00	164765-07	47	4000K - 7766lm - CRI \geq 80
			164766-00	164766-07	56	4000K - 9020lm - CRI \geq 80

963 Hydro - LED

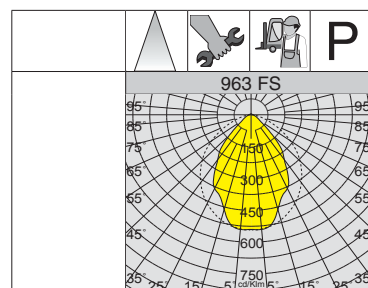
wattage	colour	weight	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	grey	1,80	164765-0041	47	4000K - 7766lm - CRI \geq 80
			164766-0041	56	4000K - 9020lm - CRI \geq 80

Upon request:

- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
 - with pass-through wiring for **continuous line mounting: subcode -0072**;
 - with **1-10V dimmable electronic gear + emergency: subcode -94**;
 - with emergency wiring with centralized power supply: **sub-code -0050**.
- (the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
80.000h (L80B20).



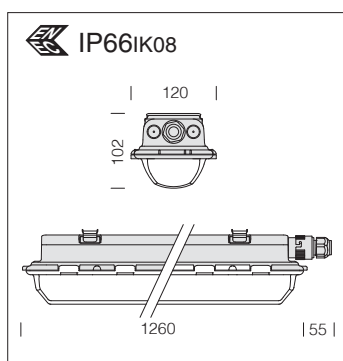
This product is compliant with the **Premium LED L90** – 36,000h USA standard.

963 Hydro FS - narrow beam - LED					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	1,80	164764-22	34	4000K - 5215lm - CRI \geq 80

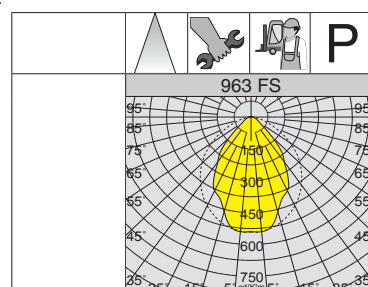
Upon request:

- with pass-through wiring for **continuous line mounting: subcode -0072;**
- with **1-10V dimmable electronic gear + emergency: subcode -94;**
- with emergency wiring with centralized power supply: **sub-code -0050.**

(the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
80.000h (L80B20).



This product is compliant with the **Premium LED L90** – 36,000h USA standard.

963 Hydro FS - narrow beam - LED					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	1,80	164765-22	47	4000K - 7531lm - CRI \geq 80

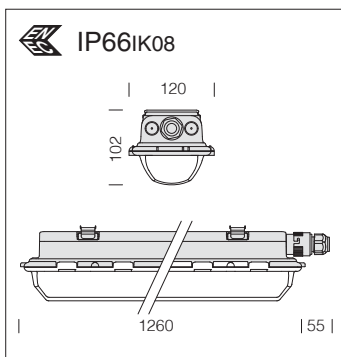
Upon request:

- with pass-through wiring for **continuous line mounting: subcode -0072;**
- with **1-10V dimmable electronic gear + emergency: subcode -94;**
- with emergency wiring with centralized power supply: **sub-code -0050.**

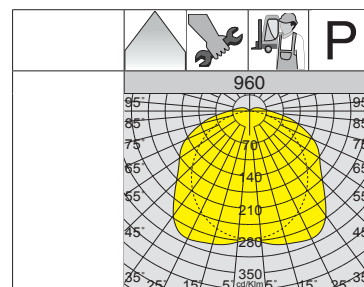
(the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)







LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B20).



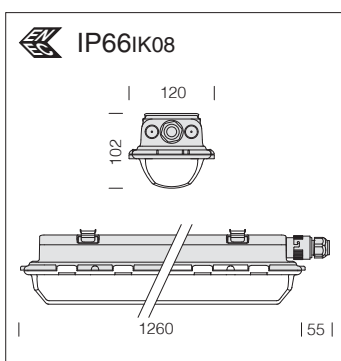
960 Hydro - LED						
wattage	colour	weight	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1,80	164751-00	164751-07	20	4000K - 2672lm - CRI \geq 80

960 Hydro - LED						
wattage	colour	weight	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1,80	164752-00	164752-07	27	4000K - 3219lm - CRI \geq 80

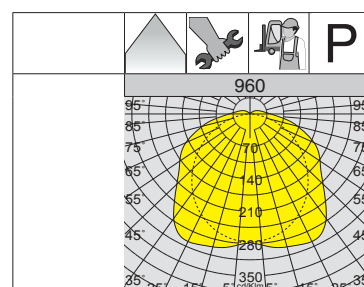
Upon request:

- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
- with pass-through wiring for **continuous line mounting: subcode -0072**;
- with emergency wiring with centralized power supply: **sub-code -0050**.

(the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B20).



960 Hydro - LED						
wattage	colour	weight	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1,80	164754-00	164754-07	34	4000K - 5194lm - CRI \geq 80

960 Hydro - LED						
wattage	colour	weight	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1,80	164755-00	164755-07	47	4000K - 6886lm - CRI \geq 80

Upon request:

- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
- with pass-through wiring for **continuous line mounting: subcode -0072**;
- with emergency wiring with centralized power supply: **sub-code -0050**.

(the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)

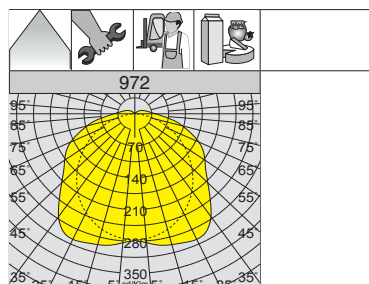


Chemical	Appearance
Acetic acid (5%)	A
Acetone	I
Ammonium hydroxide (sp. gr. 0.90)	A
Ammonium hydroxide (10%)	A
Blasocut Kombi (5% in water)	A
Castrol SYNTILO 9913 (5% in water)	A
Detergent solution (0.025%)	A
Diesel Fuel	A
Dimethyl formamide	I
Distilled water	A
Ethanolamine (5%)	A
Ethyl alcohol (50%)	A
Ethyl alcohol (95%)	A
Hydrochloric acid 10%	A
Isopropanol	A
Lipid solution (2%)	A
Methyl alcohol	A
Olive oil	A
Soap solution (1%)	A
Sodium hypochlorite (5%)	A
Sodium chloride solution (10%)	A
Sodium hydroxide solution (10%)	A
Sulfuric acid 10%	A
Toluene	I

972 Hydro STYLE:

special version for rooms with a high concentration of chemical products, gas and vapours, such as warehouses, chemical plants, food processing plants or covered external areas (breeding farms). In these fixtures, **the housing and the transparent shield** are made in a special material capable of resisting to **chemical agents** (ammonia, alkaline solutions, soap, alcohol and oil detergents - see table).

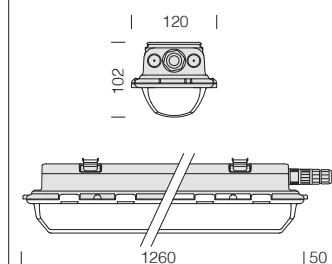
CODE	Comment
A	resistant
I	non resistant



**SPECIAL
VERSION
TRANSPARENT**



IP66IK07



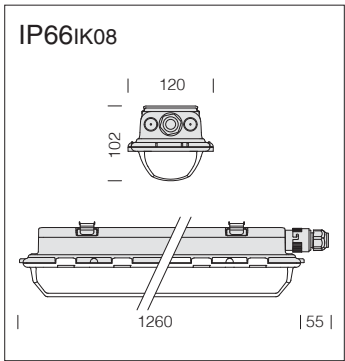
LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B20).

This lighting fixture meets the global standards of the International Food Safety (IFS), the British Retail Consortium (BRC) and the HACCP Directive regarding the safety of the lighting systems in the **FOOD INDUSTRY**.

In any case, it will be necessary to contact appointed designers and Disano's consultancy office to check the compatibility of materials with the food products processed and in all industrial environments where sanitizing systems are installed.

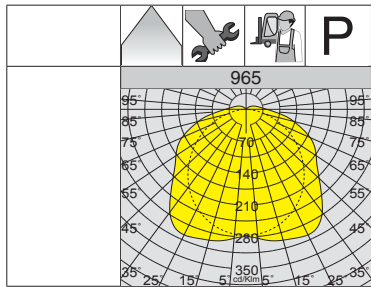
972 Hydro STYLE - LED					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm - CRI
LED	transparent	1,80	164790-00	31	4000K - 5547lm - CRI \geq 80
			164791-00	47	4000K - 7766lm - CRI \geq 80

Body and diffuser: in copolyester having superior light transmittance, resistant in environments containing high levels of ammonia and detergents.



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
80.000h (L80B20).

Version ideal for environments where
temperatures reach $-40^{\circ} \div +55^{\circ} \text{C}$.



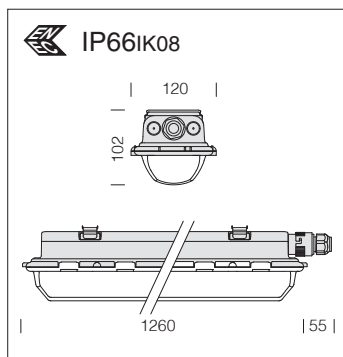
This product is compliant with the **Premium LED L90** – 36,000h USA standard.

965 Hydro ICE/HT - high/low temperature - LED					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	1,80	164780-00	31	4000K - 4992lm - CRI \geq 80
			164781-00	42	4000K - 6989lm - CRI \geq 80

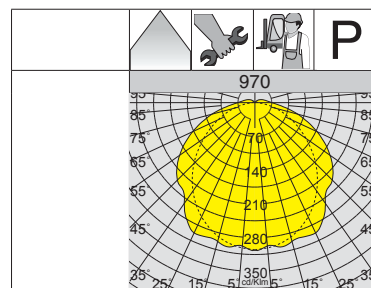
Upon request:

- with pass-through wiring for **continuous line mounting: subcode -0072;**
- with emergency wiring with centralized power supply: **sub-code -0050.**
(the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)





LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B50).



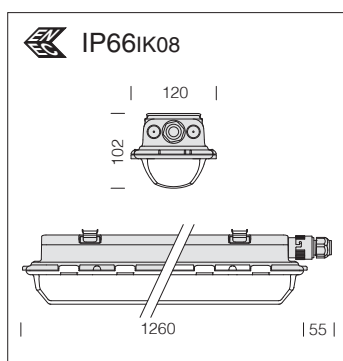
WATER-PROOF

970 Thema - LED

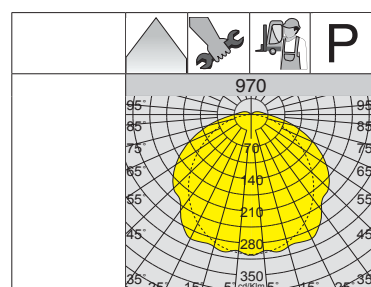
wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	grey	1,80	164731-00	164731-07	19	4000K - 2670lm - CRI \geq 80
			164734-00	164734-07	34	4000K - 4328lm - CRI \geq 80

Upon request:

- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
 - with pass-through wiring for **continuous line mounting: subcode -0072**;
 - with emergency wiring with centralized power supply: **sub-code -0050**.
- (the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)



LED: Power factor: $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B50).



970 Thema - LED

wattage	colour	weight	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI
LED	grey	1,80	164732-00	164732-07	25	4000K - 3442lm - CRI \geq 80
			164735-00	164735-07	49	4000K - 6384lm - CRI \geq 80

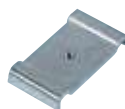
Upon request:

- with radar sensor for **ON-OFF fixtures: subcode -19** (with default setting);
 - with pass-through wiring for **continuous line mounting: subcode -0072**;
 - with emergency wiring with centralized power supply: **sub-code -0050**.
- (the ceiling lamps are supplied with a single power outlet capable of managing both standard power mode and emergency-EM mode)

**acc. 938 junction sleeve**

grey	998073-00
------	-----------

Polycarbonate, for jointing and transit of power supply cables (internal Ø 13 mm) between lighting fixtures (max distance 30 m). **2 per pack.**

**acc. 978 wall bracket**

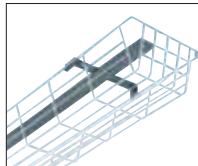
galvanized	998078-00
------------	-----------

Made of galvanized steel. For installation of Echo LED fixtures on walls.

**acc. 6036 universal conn.**

galvanised	132987-00
------------	-----------

Made of galvanized steel. To install non-corrosive fixtures on track art. 6000.

**acc. 975 protection guard**

white	1300mm	165564-00
white	1600mm	165565-00

White plastic-coated steel rod. To be installed directly on the ceiling.

GENERAL CHARACTERISTICS

Housing: injection moulded, vandal resistant, UV stabilised RAL 7035 grey polycarbonate, high mechanical resistance thanks to the stiffening ribs inside the structure.

Diffuser: injection moulded V2 self-extinguishing, UV stabilised clear polycarbonate, prismatic inside for better light control. The smooth outside finishing facilitates cleaning, essential to ensure maximum lighting efficiency at all times.

Reflector: in galvanised steel, previously stove-enamelled with UV-stabilised polyester resin.

Equipment: plug connector.

Efficiency, energy saving and security

Isolation class I.

Quick connection with plug and socket, no need to open the fixture.

Material compatible with food industry environments.

Mounting is also possible at low or very low temperatures (instant start and no flux decay).

For applications with direct exposure to sunlight, we recommend using Forma LED.

LED: Power factor: $\geq 0,9$

Luminous flux maintenance 80%: 80.000h (L80B20)

Photobiological safety class:

exempt group.

Allowable ambient temperature :

-30°C to + 40°C

OTHER CHARACTERISTICS



Greater performance

The fixture is made with first-choice polycarbonate stabilised against UV light. It has been treated to eliminate glare without affecting performance. Polycarbonate with excellent diffusion co-efficient and lighting transmission.



Standard stainless steel mounting bracket enables quick and easy installation of the fixture to ceiling surfaces.

Standard spring loop allows quick connection to any chain suspension system.



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION



Self-extinguishing

U.L.94 is a widely accepted USA flammability standard that classifies plastics according to how they burn. The **ECHO** fixture is made of **V2** self-extinguishing plastic material: burning stops within **25 seconds**.

Glow wire test

Glow wire tested at 850°C.

ALL LIGHT: no glare

The special surface finish of the diffuser allows light to escape, creating an "all light" effect. The fluted diffuser spreads light evenly without leaving dark areas.



Water-proof lighting fitting upon request with stainless steel latches (**690mm - 1300mm - 1600mm**) to be ordered using **sub-code -0077** at an extra price.

UPON REQUEST



Built-in RADAR SENSOR (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past

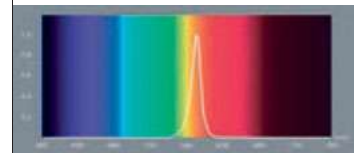


Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Version with special **AMBER colour LED** sources for wine processing and storage facilities. **Note:** when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

AMBER LED light spectrum with no blue or violet wavelengths.



Luminaire compliant with the requirements of the qualification protocol issued by the Comité Champagne for amber lighting fixtures used for the storage of bottles.



ACCESSORIES AND INSTALLATION

Continuous line alignment: perfect alignment of the lighting fittings is achieved using moulded guiding notches. Continuous electric line connection: a through-line wiring arrangement and socket/plug type connectors from the first of the last lighting fitting is required for this type of installation. (Lighting fitting supplied Upon request **sub-code -0072** at an extra price).



Lighting fitting art. 927-957

Lighting fitting with sub-code 0072. **Warning:** the last light fitting must be of the standard type

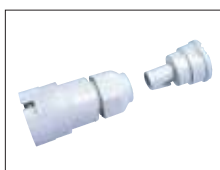
Installation with cable and lighting fitting with sub-code -0072: continuous electric line connection using acc. 371 plug and acc. 372 socket, with the lighting fittings with sub-code -0072 at an extra price.



Acc. 372 socket

Acc. 371 plug

acc. 370 connector for ø20 tube	
grey	998040-00
For use with acc. 371-372 tube connector installation. 10 per pack.	

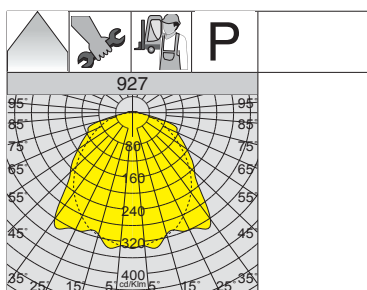


acc. 371 quick connector plug	
grey	998041-00
Always to be used for continuous line with wire. Cable gland with inlet cable 16A min. ø 9 max ø12 mm. 10 per pack.	

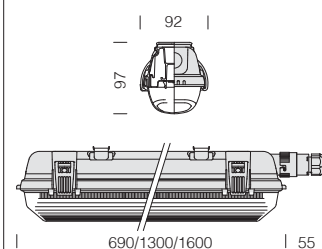


acc. 372 quick connector socket	
grey	998042-00
Always to be used for continuous line with wire. Cable gland with inlet cable 16A min. ø 9 max ø12 mm. 10 per pack.	





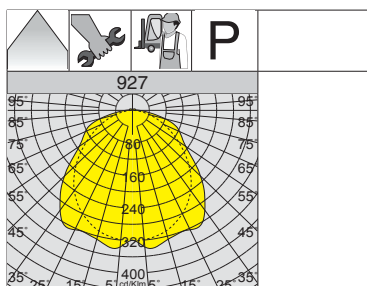
IP66IK08



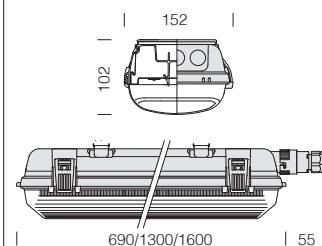
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

927 Echo - single LED module

wattage	colour	CLD			CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	L	code	code		K - ølm - CRI
LED	grey	1.00	690	164700-00		11	4000K - 1593lm - CRI \geq 80
		2.00	1300	164701-00	164701-07	19	4000K - 2870lm - CRI \geq 80
		3.00	1600	164702-00	164702-07	24	4000K - 3830lm - CRI \geq 80



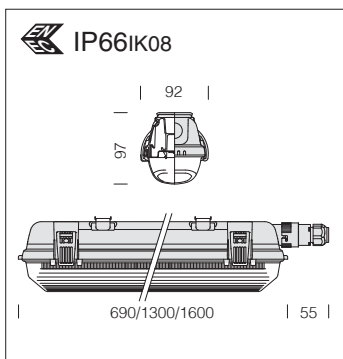
IP66IK08



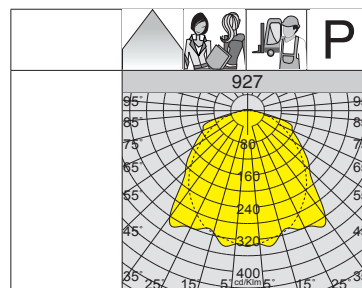
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

927 Echo - twin LED module

wattage	colour	CLD			CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	L	code	code		K - ølm - CRI
LED	grey	1.30	690	164703-00	164703-07	21	4000K - 3195lm - CRI \geq 80
		2.30	1300	164704-00	164704-07	38	4000K - 5752lm - CRI \geq 80
		3.30	1600	164705-00	164705-07	50	4000K - 7671lm - CRI \geq 80



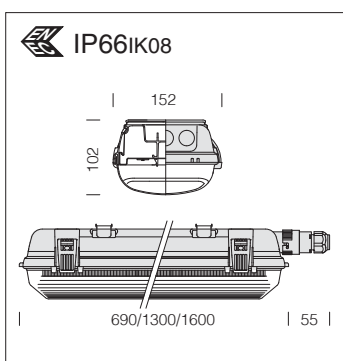
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



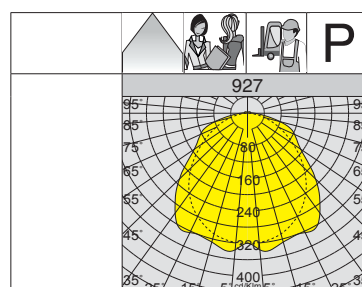
WATER-PROOF

927 Echo - 3000K/6500K single LED module							
wattage	colour	weight	L	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1.00	690	164700-39		11	3000K - 1441lm - CRI \geq 80
		2.00	1300	164701-39		20	3000K - 2595lm - CRI \geq 80
		3.00	1600	164702-39		26	3000K - 3461lm - CRI \geq 80
LED	grey	1.00	690	164700-0083		11	6500K - 1547lm - CRI \geq 80
		2.00	1300	164701-0083	164701-0783	20	6500K - 2788lm - CRI \geq 80
		3.00	1600	164702-0083	164702-0783	26	6500K - 3718lm - CRI \geq 80

Upon request Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

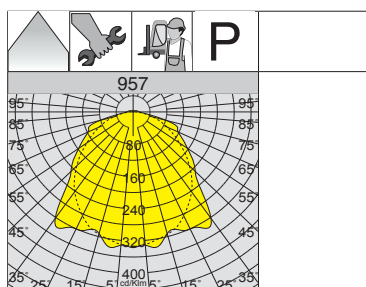


LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

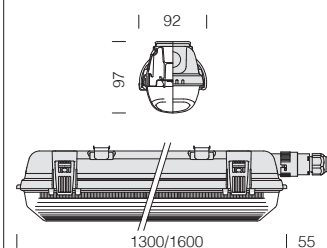


927 Echo - 3000K/6500K twin LED module							
wattage	colour	weight	L	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	1.30	690	164703-39		22	3000K - 2887lm - CRI \geq 80
		2.30	1300	164704-39		39	3000K - 5199lm - CRI \geq 80
		3.30	1600	164705-39		52	3000K - 6933lm - CRI \geq 80
LED	grey	1.30	690	164703-0083	164703-0783	22	6500K - 3102lm - CRI \geq 80
		2.30	1300	164704-0083	164704-0783	39	6500K - 5585lm - CRI \geq 80
		3.30	1600	164705-0083	164705-0783	52	6500K - 7448lm - CRI \geq 80

Upon request Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.



IP66IK08

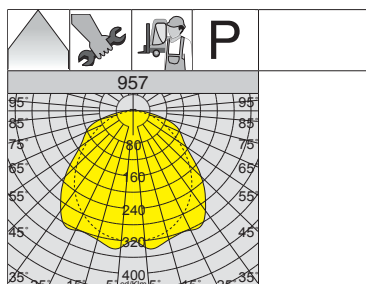


LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

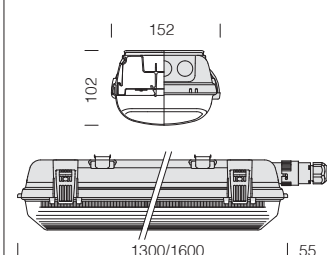
957 Echo - single LED module

wattage	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ϕ lm - CRI
LED	grey	2.00	1300	164711-00	164711-07	22	4000K - 3350lm - CRI \geq 80
		3.00	1600	164712-00	164712-07	28	4000K - 4468lm - CRI \geq 80

Upon request Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.



IP66IK08



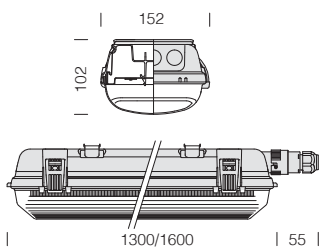
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

957 Echo - module LED double

wattage	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ϕ lm - CRI
LED	grey	2.30	1300	164714-00	164714-07	44	4000K - 6711lm - CRI \geq 80
		3.30	1600	164715-00	164715-07	59	4000K - 9330lm - CRI \geq 80
				164717-00	164717-07	69	4000K - 9877lm - CRI \geq 80

Upon request Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

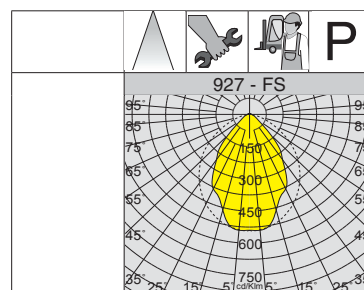
IP66IK08



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



FS

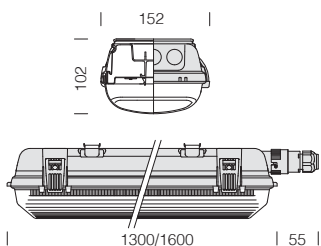


WATER-PROOF

927 Echo FS - narrow beam - twin LED module

wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI
LED	grey	2.30	1300	164704-22	38	4000K - 5196lm - CRI \geq 80
		3.30	1600	164705-22	50	4000K - 6930lm - CRI \geq 80

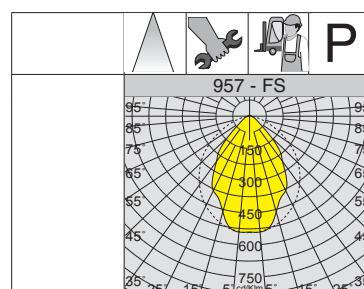
IP66IK08



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



FS



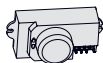
957 Echo FS - narrow beam - twin LED module

wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI
LED	grey	2.30	1300	164714-22	44	4000K - 6062lm - CRI \geq 80
		3.30	1600	164715-22	59	4000K - 8083lm - CRI \geq 80

For more details on versions and features, please read cap. "Lighting management systems and recommendations"



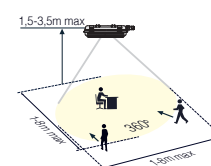
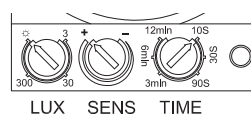
RADAR SENSOR ON-OFF - FEATURES AND CONNECTIONS



- High-frequency motion detector for light switching, especially suited for use in lighting fixtures.
- 360° detection angle.
- Detection range, twilight value and additional activation time may be set with a potentiometer.
- HF technology: 5.8GHz, it reacts to very small movements, regardless of temperature; it also sees through walls.
- Extremely short activation time.
- Light only when needed.

RADAR SENSOR ON-OFF - TECHNICAL SPECIFICATIONS

Power source	220-240V AC - 50/60 Hz	Installing height	ceiling: 1,5-3,5 m
High frequency	5,8GHz CW Radar, ISM band - 0,2 - <10 mW	Rated Load	1200 W (resistive) 300 W (inductive)
Detection area	ceiling: 360°	Power consumption	<0,9 W
Detection distance (adjustable)	ceiling: Ø 1-8 m	Hold time (choice)	min: 10sec (± 3 sec.) max: 12min (± 1 min.)
Detection motion speed	0,6-1-1,5 m/s	Ambient light (choice)	<3-2000 Lux



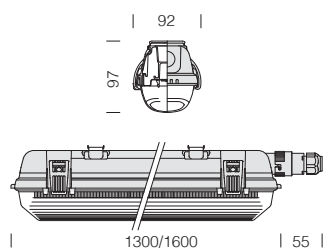
Default settings:
Detection distance: 8m
Hold time: 10sec
Ambient light: 2000lux

TEST

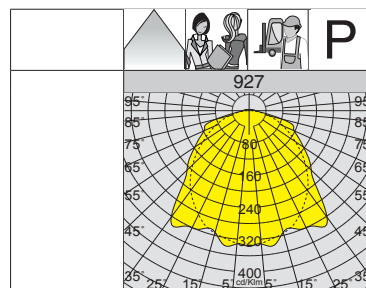
1. Turn the LUX knob clockwise on the maximum (sun)
2. Turn the SENS knob clockwise on the maximum (+).
3. Turn the TIME knob anti-clockwise on the minimum (10s).
4. When you switch on the power, the light will be on at once. And 10sec±3sec later the light will be off automatically. Then if the sensor receives induction signal again, it can work normally.
5. When the sensor receives the second induction signals within the first induction, it will restart to time from the moment.
6. Turn LUX knob anti-clockwise on the minimum (3). If the ambient light is less than 3LUX (darkness), the inductor load could work when it receives induction signal.

Note: when testing in daylight, please turn LUX knob to [SUN] position, otherwise the sensor lamp could not work!

IP66IK08



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

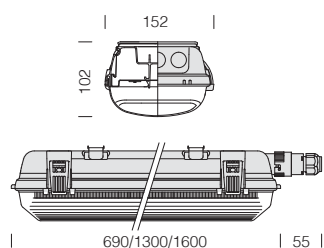


WATER-PROOF

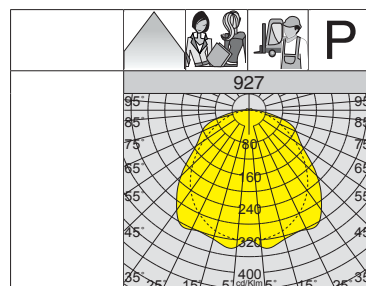
927 Echo - single LED module - RADAR SENSOR

		CLD radar sensor (ON-OFF)			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	grey	2.00	1300	164701-19	19	4000K - 2870lm - CRI \geq 80
		3.00	1600	164702-19	24	4000K - 3830lm - CRI \geq 80

IP66IK08



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

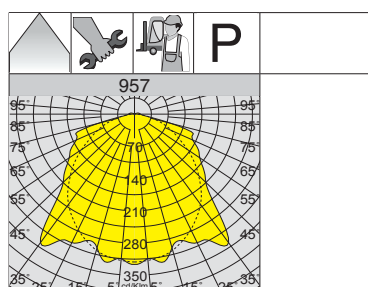


Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

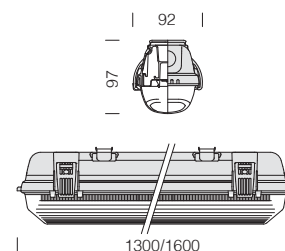


927 Echo - twin LED module - RADAR SENSOR

		CLD radar sensor (ON-OFF)			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	grey	1.30	690	164703-19	21	4000K - 3195lm - CRI \geq 80
		2.30	1300	164704-19	38	4000K - 5752lm - CRI \geq 80
		3.30	1600	164705-19	50	4000K - 7671lm - CRI \geq 80



IP66IK08



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

957 Echo HE - single LED module

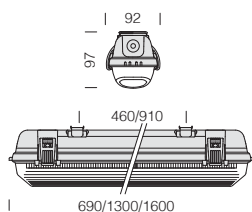
wattage	colour	CLD		CLD E	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tg= 25 °C)
		weight	L	code	code		K - ϕ lm - CRI
LED	grey	2.00	1300	164730-00	164730-07	36	4000K - 5508lm - CRI \geq 80
		3.00	1600	164736-00	164736-07	46	4000K - 7048lm - CRI \geq 80

The luminaire can be opened to allow connection to the terminal

Project comparison - old system: One-to-one fixture replacement without changing the existing electrical system. The comparison shows how new **957 ECHO** can save more energy compared to conventional fluorescent lamps and meet applicable standards.

Fixture	room (m)	LUX	Qty	P tot W	Energy saving
957 - 46W - 7048lm (RELAMPING)	40x20x3,5	369	50	2300	58% compared to 2x58W CEL 67% compared to 2x58W CNR
2X58W CEL	40x20x3,5	324	50	5500	-
2X58W CNR	40x20x3,5	324	50	7000	-

IP66IK08



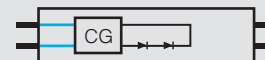
As standard, it comes with lamp holder with G13 connector; it can be installed directly of LED lamp (230V_{AC}).

FOR LED TUBES



Example/characteristics of LED TUBES

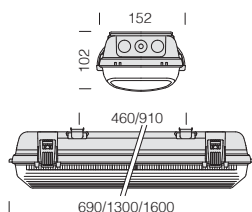
- max. weight of single lamp: 500 gr
- dimensions (see fig. A1).
- connection (see wiring diagram):



921 Echo - LED 1X					
CLD S					
wattage	colour	weight	L	code	W max
LED	grey	1.00	690	164530-03	10
		2.00	1300	164531-03	16
		3.00	1600	164532-03	24

LED lamp dimensions	
L (mm)	A1
A1 = 590mm	
A1 = 1200mm	
A1 = 1500mm	

IP66IK08



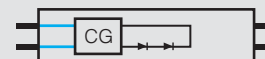
As standard, it comes with lamp holder with G13 connector; it can be installed directly of LED lamp (230V_{AC}).

FOR LED TUBES



Example/characteristics of LED TUBES

- max. weight of single lamp: 500 gr
- dimensions (see fig. A1).
- connection (see wiring diagram):



921 Echo - LED 2X					
CLD S					
wattage	colour	weight	L	code	W max
LED	grey	1.00	690	164533-03	2x10
		2.00	1300	164534-03	2x16
		3.00	1600	164535-03	2x24

LED lamp dimensions	
L (mm)	A1
A1 = 590mm	
A1 = 1200mm	
A1 = 1500mm	



GENERAL CHARACTERISTICS

Housing: made of pressed steel, drawn in a single piece for high mechanical resistance. Supplied with frame.

Coating: polyester powder.

Standard supply: silicone rubber gasket and cable gland.

Upon request: emergency unit.

LED: Power factor: $\geq 0,9$.

Luminous flux maintenance 80%: 50.000h (L80B20).

Photobiological safety class:

Exempt group.

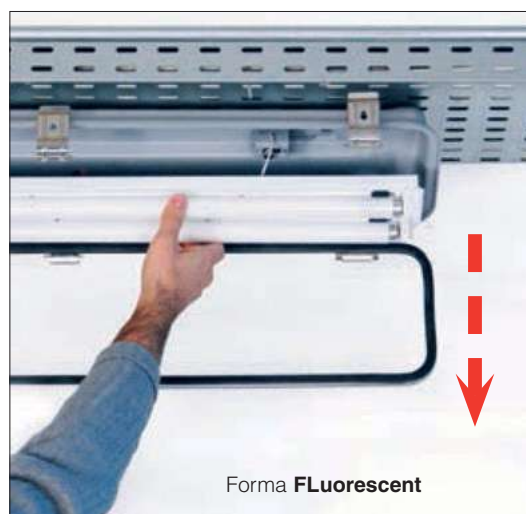
Allowable ambient temperature :

-25°C to + 40°C

Colour temperature: upon request 3000K and 6000K.

We recommend using this version for applications with direct exposure to sunlight.

REPLACE FORMA FL TUBES WITH DISANO LEDS!



The LED reflector for direct replacement of the fluorescent tubes in the Forma product.

Keep your steel ceiling fixture and save up to 50% !

LED:

- Power factor: $\geq 0,9$
- Colour rendering index: ≥ 80
- Luminous flux maintenance 80%: 50.000h (L80B20)
- Colour temperature: 4000K; upon request 3000K and 6000K



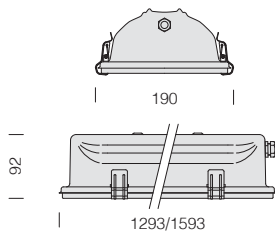
LED Reflector				
		CLD		LED (tj= 25 °C)
wattage	L	code	W	K - ølm - CRI
LED	1293	162445-16	42	4000K - 7060lm - CRI \geq 80
	1593	162446-16	56	4000K - 9400lm - CRI \geq 80



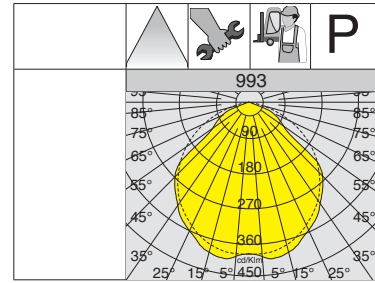
acc. 975 protection guard

white	165566-00
white	165567-00
White plastic-coated steel rod. To be installed directly on the ceiling.	

IP65IK08



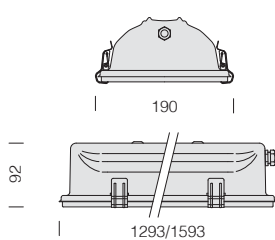
Diffuser: impact-resistant transparent tempered glass.

**993 Forma - with transparent glass**

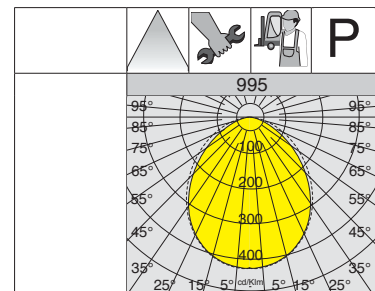
wattage	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm - CRI
LED	s. silver	7.20	1293	162457-00	162457-07	36	4000K - 4688lm - CRI≥80
				162447-00	162447-07	50	4000K - 6000lm - CRI≥80
LED	s. silver	9.00	1593	162448-00	162448-07	61	4000K - 8082lm - CRI≥80
				162458-00	162458-07	71	4000K - 9264lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).

IP65IK08



Diffuser: impact-resistant and etched tempered glass.

**995 Forma - with etched glass**

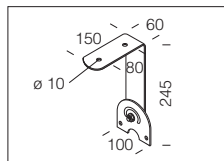
wattage	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm - CRI
LED	s. silver	7.20	1293	162455-00	162455-07	36	4000K - 4378lm - CRI≥80
				162445-00	162445-07	50	4000K - 5635lm - CRI≥80
LED	s. silver	9.00	1593	162446-00	162446-07	61	4000K - 7547lm - CRI≥80
				162456-00	162456-07	71	4000K - 8650lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).

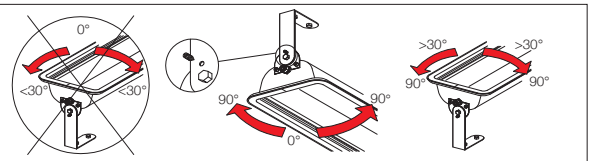
acc. 996 adjustable bracket

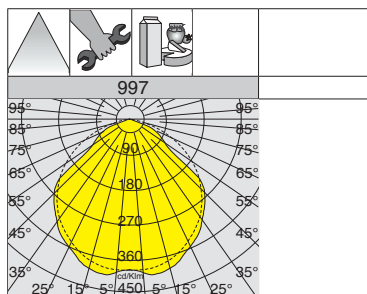
stainless s. 166670-00

Made of stainless steel. To allow suspension mounting and rotation. **2 per pack.**

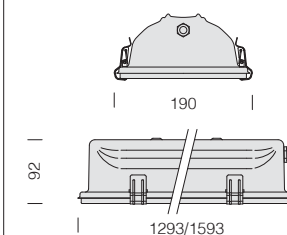


N.B. installation of fixtures providing indirect light with flat glass is not recommended for exterior application.





IP65IK08



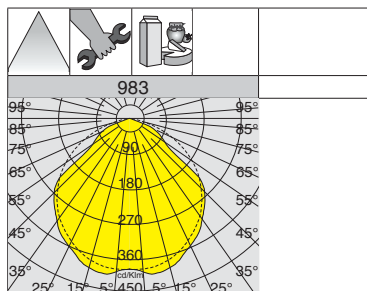
Diffuser: Injection moulded, in V2 self-extinguishing, UV stabilized, clear polycarbonate, **ideal for the food industry.**

Upon request: version with diffuser in special polycarbonate material, ideal for the food industry with special processing methods.

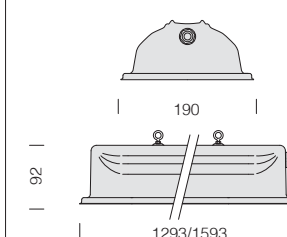
997 Forma - with polycarbonate diffuser

wattage	colour	weight	L	CLD	LUMEN OUTPUT (tq= 25 °C)	
				code	W tot	K - ølm - CRI
LED	s. silver	7.20	1293	162400-00	36	4000K - 4773lm - CRI≥80
				162401-00	50	4000K - 5950lm - CRI≥80
LED	s. silver	9.00	1593	162402-00	61	4000K - 7977lm - CRI≥80
				162403-00	71	4000K - 9143lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).



IP65IK08



Diffuser: Injection moulded, in V2 self-extinguishing, UV stabilized, clear polycarbonate. **Ideal for the food industry.**

Standard supply: plug connector for quick installation.

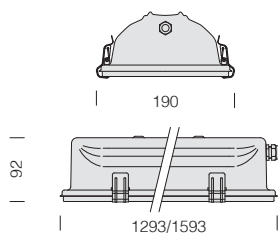
For emergency version use art. 993.

983 Forma - without hooks - with polycarbonate diffuser

wattage	colour	weight	L	CLD	LUMEN OUTPUT (tq= 25 °C)	
				code	W tot	K - ølm - CRI
LED	s. silver	7.20	1293	162465-00	36	4000K - 4773lm - CRI≥80
				162466-00	50	4000K - 5960lm - CRI≥80
LED	s. silver	9.00	1593	162467-00	61	4000K - 7977lm - CRI≥80
				162468-00	71	4000K - 9143lm - CRI≥80

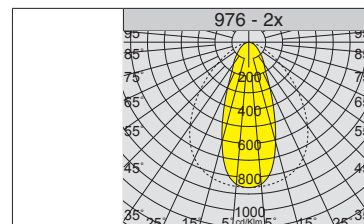
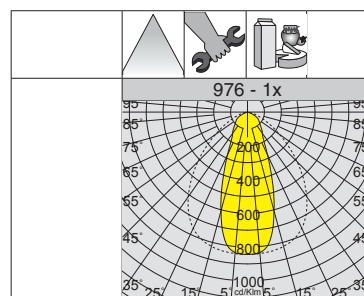
It can be mounted as a suspended lamp with the dedicated eyelets. Please order the special version with mounting brackets to mount the fixture to the ceiling/wall (acc. 996).

IP65IK08



Diffuser: impact-resistant transparent tempered glass.

Optics: high-efficiency lenses in PMMA for luminous flux control, capable of withstanding high temperatures and UV rays.



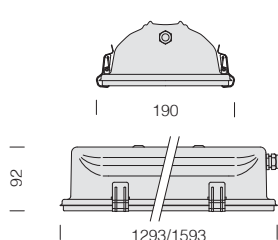
WATER-PROOF

976 Forma HE - 30°x80° elliptic - with transparent glass

wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI
LED	s. silver	7.20	1293	162430-00	46	4000K - 5854lm - CRI≥80
				162432-00	90	4000K - 11400lm - CRI≥80
LED	s. silver	9.00	1593	162431-00	56	4000K - 7318lm - CRI≥80
				162433-00	110	4000K - 14251lm - CRI≥80

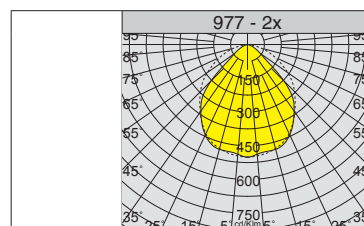
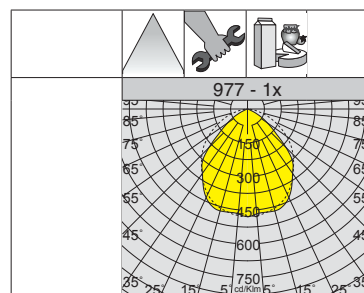
Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).

IP65IK08



Diffuser: impact-resistant transparent tempered glass.

Optics: high-efficiency lenses in PMMA for luminous flux control, capable of withstanding high temperatures and UV rays.

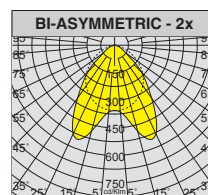
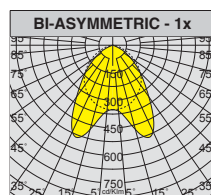
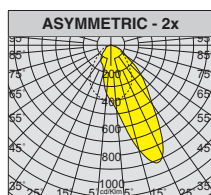
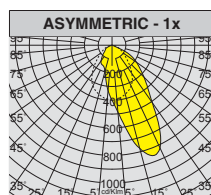


977 Forma HE - 90° wide-beam - with transparent glass

wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI
LED	s. silver	7.20	1293	162470-00	46	4000K - 5984lm - CRI≥80
				162472-00	90	4000K - 11507lm - CRI≥80
LED	s. silver	9.00	1593	162471-00	56	4000K - 7481lm - CRI≥80
				162473-00	110	4000K - 14384lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).

Upon request available Forma HE with other photometric distributions:



ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE GAS:

Ex =	Electrical system built and tested for utilization in an atmosphere filled with explosive gasses.
nA =	The electrical system does not produce sparks when operating normally.
II =	Electrical system suitable for areas with a potentially explosive atmosphere, different from mines, with firedamp.
Gc =	Enhanced protection level
T4 =	Maximum internal or external surface temperature; classification according to regulation cei en 60079-0 table 2
IP66 =	Housing entirely protected against dust and the water jets

ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE POWDERS:

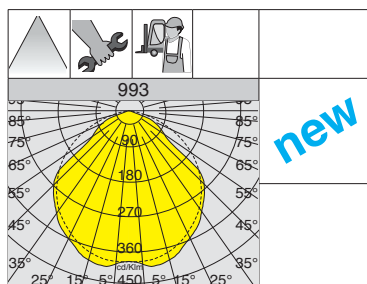
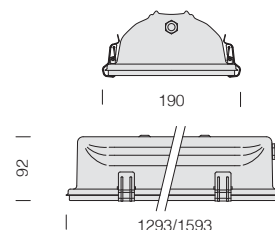
Ex =	Electrical system built and tested for utilization in an atmosphere containing powders.
IIIC	Electrical equipment for premises with potentially explosive atmospheres due to the presence of combustible dust, other than mines with the presence of firedamp
Dc	Enhanced protection level
tc	Protection against explosive atmospheres due to the presence of dust where the electrical equipment is equipped with an enclosure
22 =	Permitted hazardous area.
IP6X =	Housing entirely protected against dust
T 135°C =	Maximum temperature in a dust-free environment

Hazardous places according to Legislative Decree 233/03**Places**

gas-fuelled heating plants with P>35Kw
garages, repair shops, body shops
fuel distribution
bread baking ovens
places where painting processes occur
distilleries, production of alcoholic beverages

993 ATEX

Protection against explosions	II 3G Ex nA OP IS IIC T4 IP65 Gc II 3D Ex tc IIIC T135°C IP65 Dc
Allowed dangerous area	Zone 2; Zone 22
Allowed room temperature	-20°C ÷ +40°C
Degree of protection	IP65
Installation	ceiling - suspension
Casing mechanical resistance	IK08
Reference regulations	EN 60079-0; EN 60079-15; EN 60079-31; EN 60079-28

**IP65IK08**

Diffuser: impact-resistant transparent tempered glass.

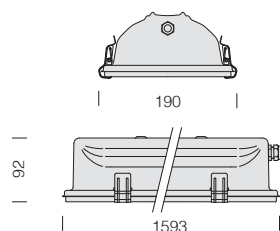
993 Forma ATEX - with transparent glass

wattage	colour	CLD			W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	L	code		K - ølm - CRI
LED	s. silver	7.20	1293	162495-00	45	4000K - 6000lm - CRI≥80
		9.00	1593	162496-00	65	4000K - 9264lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).

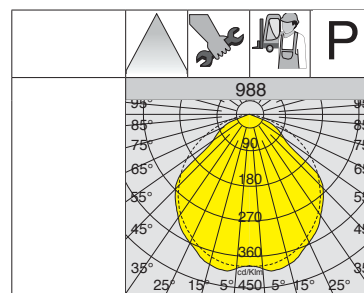


IP65IK08



Diffuser: impact-resistant transparent tempered glass.

HT version ideal for environments where temperatures reach max **+55 °C**.



988 Forma HT - high temperature - with transparent glass						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	s. silver	9.00	1593	162485-00	55	4000K - 7274lm - CRI≥80
				162486-00	64	4000K - 8337lm - CRI≥80

Version prepared for installation of acc. 996 (use sub-code -0074 to order this accessory and purchase bracket acc. 996).



GENERAL CHARACTERISTICS

Housing: in extruded aluminium with terminal ends in die-cast aluminium; provision for cable management

Optics : in high-performance metallic V0 polycarbonate.

Diffuser: 4 mm thick temperate glass resistant to thermal shock and impacts (UNI EN 12150-1:2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage of UV-stabilised, corrosion and salt resistant polyester powder coating

Standard supply: complete with mounting bracket with standard eyebolt to install the fixture as a suspension lamp, including stainless steel screws, plug-socket connector for fast and easy installation **without any need to open the lamp.**

LED : Facteur de puissance: $\geq 0,95$.

Luminous flux maintenance	
Radon HP	L90B10 - 100.000h
Radon HE	L90B10 - 50.000h
Radon 2167	L80B20 - 80.000h

Photobiological safety class:
Exempt group.
Allowable ambient temperature:
-30°C to + 40°C

OTHER CHARACTERISTICS

Radon is made in airtight aluminium with a high level of protection (IP66) and elevated resistance to impacts (IK08). The fixture was also conceived to be installed in ambient temperatures between -30 and +40 °C. The diffuser in 4-mm-thick glass, resistant to thermal shocks and impacts is directly secured to the body with mechanical elements and clamping screws.



Radon LED is also available in a version for horticulture lighting, one of the new frontiers of LED technology.

OTHER INFORMATION

Available with wide beam and elliptical beam **UGR<22/25** optics in V0 metalized high-performance polycarbonate to always get the best visual comfort possible.

UGR
<22

UGR
<25

The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare.** The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



Possibility of centralized lighting point control or via **external presence/lighting sensors** (see chapter *Lighting management systems and recommendations*).

With pass-through wiring for **continuous line mounting: sub-code -0072;**



Version **CLD EC** wiring with **subcode -0050:** permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.



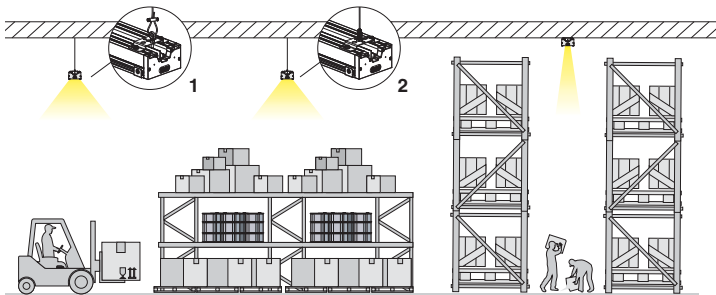
Ideal version for spaces with a high concentration of particular volatile chemicals around the luminaires (see chemical compatibility table in chapter *legend and Info*).



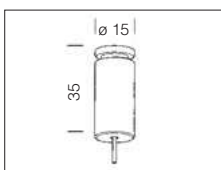
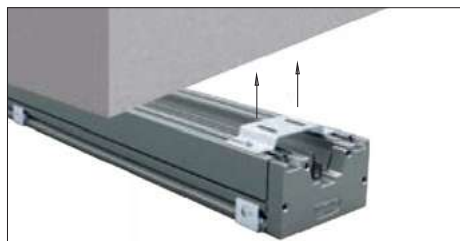
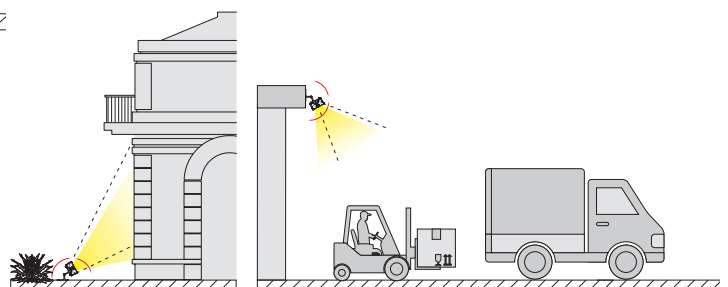
Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

INSTALLATION AND ACCESSORIES

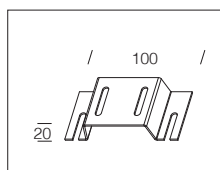
Example of suspended installation with standard eyebolt and mounting bracket (1), with simple suspension acc. 2518 (2) or ceiling installation with bracket acc. 592.



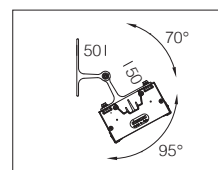
Example of installation with adjustable bracket acc 591.



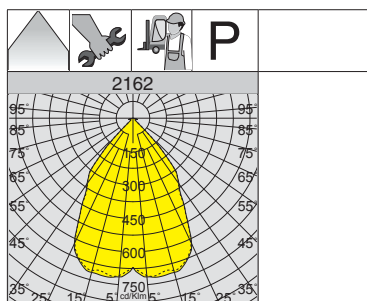
acc. 2518
simple suspension
galvanized 994019-00
Suspension supplied with steel wire, 1.75 m long with millimetric adjustment. Max load: 20 kg.



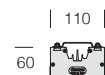
acc. 592
ceiling bracket
s. steel 998192-00
In stainless steel; for direct ceiling installation. **2 for pack.**



acc. 591
adjustable bracket
graphite 998190-00
grey 998191-00
To allow suspension mounting and rotation. **2 per pack.**



IP66IK08



830-1230-1630*

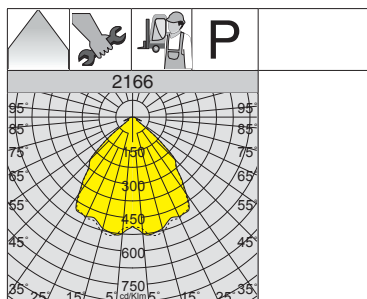
* 1630mm version **upon request****Upon request** versions with:

- with pass-through wiring for continuous line mounting: **sub-code -0072**.

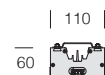
- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

2162 Radon HE - wide beam - UGR<22

wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413410-00	413410-07	53	4000K - 6431lm - CRI 80
	grey			413411-00	413411-07		
LED	graphite	4.90	1230	413412-00	413412-07	80	4000K - 9647lm - CRI 80
	grey			413413-00	413413-07		



IP66IK08



830-1230-1630*

* 1630mm version **upon request****Upon request** versions with:

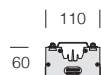
- with pass-through wiring for continuous line mounting: **sub-code -0072**.

- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

2166 Radon HE - wide beam - UGR<25

wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413450-00	413450-07	53	4000K - 6308lm - CRI 80
	grey			413451-00	413451-07		
LED	graphite	4.90	1230	413452-00	413452-07	80	4000K - 9462lm - CRI 80
	grey			413453-00	413453-07		

IP66IK08



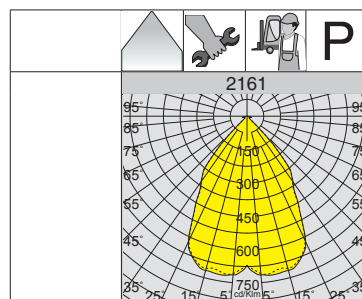
830-1230-1630*

* 1630mm version **upon request****Upon request** versions with:

- with pass-through wiring for continuous line mounting: **sub-code -0072**.

- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

UGR<22
100.000h
L90B10

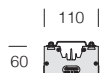


WATER-PROOF

2161 Radon HP - wide beam - UGR<22

wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413400-00	413400-07	98	4000K - 11816lm - CRI 80
	grey			413401-00	413401-07		
LED	graphite	4.90	1230	413402-00	413402-07	147	4000K - 17724lm - CRI 80
	grey			413403-00	413403-07		

IP66IK08



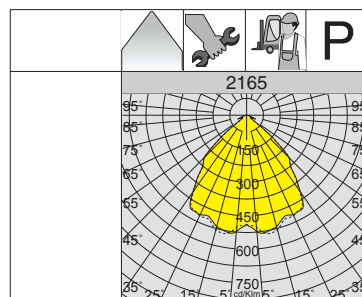
830-1230-1630*

* 1630mm version **upon request****Upon request** versions with:

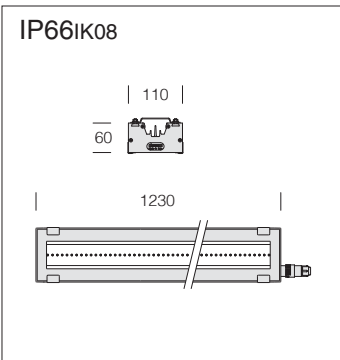
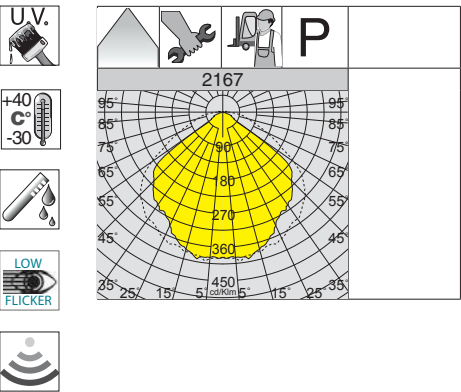
- with pass-through wiring for continuous line mounting: **sub-code -0072**.

- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

UGR<25
100.000h
L90B10

**2165 Radon HP - wide beam - UGR<25**

wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413440-00	413440-07	98	4000K - 11474lm - CRI 80
	grey			413441-00	413441-07		
LED	graphite	4.90	1230	413442-00	413442-07	147	4000K - 17211lm - CRI 80
	grey			413443-00	413443-07		



Diffuser: impact-resistant and etched tempered glass.

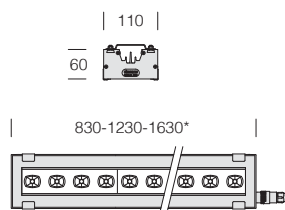
Upon request versions with:

- with pass-through wiring for continuous line mounting: **sub-code -0072**.

- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

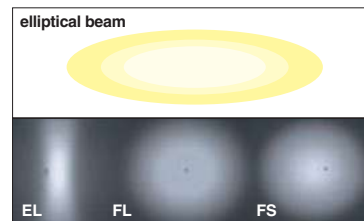
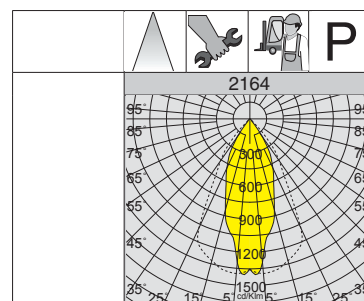
2167 Radon - wide beam						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	L	code	W tot	K - ølm - CRI
LED	graphite	4.90	1230	413462-00	50	4000K - 5180lm - CRI 80
	grey			413463-00		

IP66IK08

* 1630mm version **upon request****Upon request** versions with:

- with pass-through wiring for continuous line mounting: **sub-code -0072**.

- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

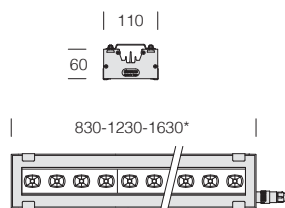


WATER-PROOF

2164 Radon HE - elliptical beam - UGR<22

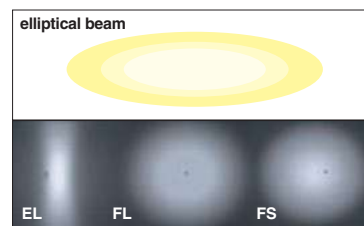
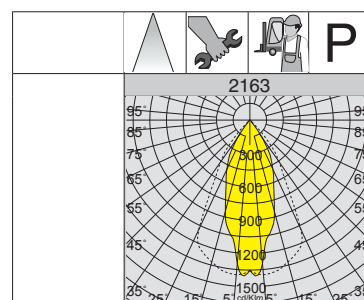
wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413430-00	413430-07	53	4000K - 6216lm - CRI 80
	grey			413431-00	413431-07		
LED	graphite	4.90	1230	413432-00	413432-07	80	4000K - 9324lm - CRI 80
	grey			413433-00	413433-07		

IP66IK08

* 1630mm version **upon request****Upon request** versions with:

- with pass-through wiring for continuous line mounting: **sub-code -0072**.

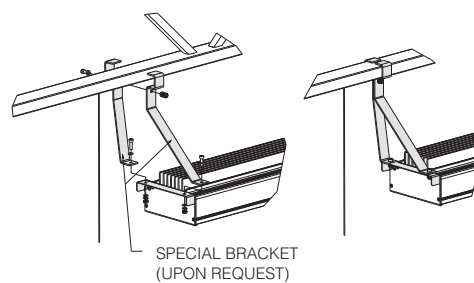
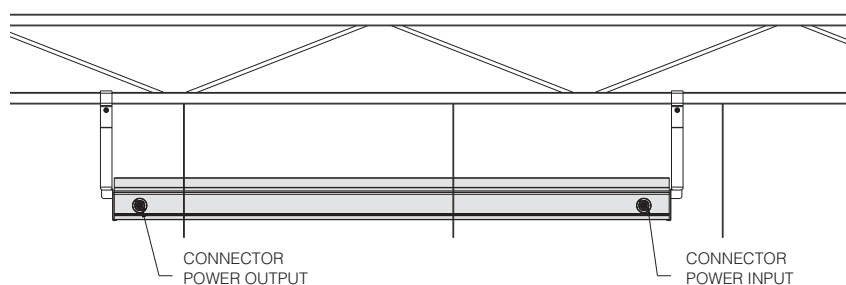
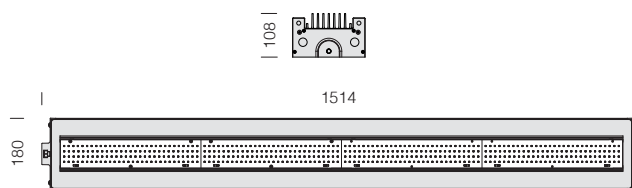
- emergency wiring with centralized power supply **CLD EC** with **sub-code -0050**.

**2163 Radon HP - elliptical beam - UGR<22**

wattage (530mA)	colour	weight	L	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm 530mA - CRI
LED	graphite	3.50	830	413420-00	413420-07	98	4000K - 11404lm - CRI 80
	grey			413421-00	413421-07		
LED	graphite	4.90	1230	413422-00	413422-07	147	4000K - 17106lm - CRI 80
	grey			413423-00	413423-07		



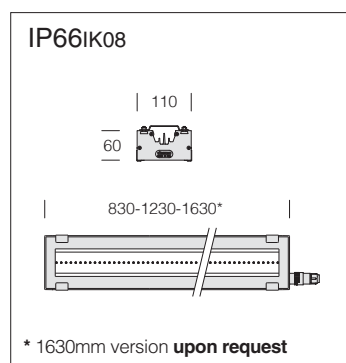
UPON REQUEST: ART. 2168 RADON HP IN THE SPECIAL VERSION WITH HIGH POWER LED SOURCES >650W



The Disano Group addresses the horticulture lighting sector by putting its professional lighting consultants at the complete disposal of users to develop tailor-made solutions by using specialist jargon and a vast expertise in LED lighting, technical characteristics and cultivation layouts. Disano offers reliable products that can perfectly dissipate heat, withstand humidity and adjust to different types of crops (from hydroponic greenhouses to home farming applications).

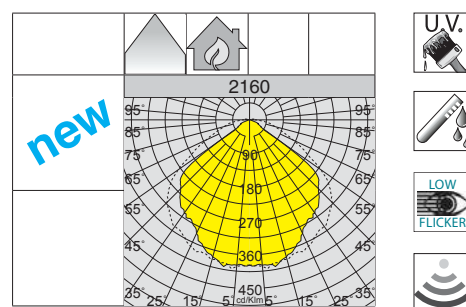


WATER-PROOF

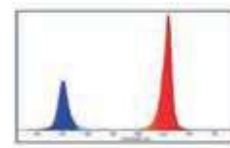


Reflector: matt aluminium.

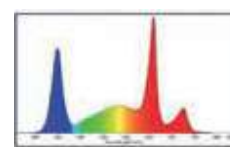
Tailored emission spectrum: ad hoc composition of wavelengths capable of affecting the photomorphogenesis of plants (growth, shape and flowering).



2160 Radon - HORTI - 2 channels (Deep blue - Hyper Red)				
		LED		
wattage	colour	L	W	Photosynthetic photon flux (400-700nm) - Photosynthetic photon efficacy
LED	graphite	830	120	370 [μmol/s] - 3.10 [μmol/J]
	grey			
LED	graphite grey	1230	181	554 [μmol/s] - 3.10 [μmol/J]



2160 Radon - HORTI - 4 channels (Deep Blue – White CRI70 4000K - Hyper Red - Far Red)				
				LED
wattage	colour	L	W	Photosynthetic photon flux (400-700nm) - Photosynthetic photon efficacy
LED	graphite	830	130	358 [μmol/s] - 2.75 [μmol/J]
	grey			
LED	graphite	1230	196	537 [μmol/s] - 2.75 [μmol/J]
	grey			

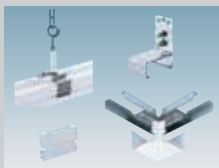




TECHNO SYSTEM HE

TECHNO SYSTEM

POWER TRACK

ACCESSORIES


Techno System p. 108

Techno System HE p. 110

Techno System CRI 90 p. 114

Power track + acc. p. 120

Accessories p. 124

RAPID SYSTEM 1X

RAPID SYSTEM 2X

SUPER 1X

SUPER 2X


Rapid System p. 126

Super p. 128

SATURNO HP/HE

**SATURNO -
ELLIPTICAL BEAM**

SATURNO HT

SATURNO - SENSOR


Saturno p. 130

ASTRO HE/HP

ASTRO - SENSOR

ASTRO HT - UGR<22/25

ASTRO - ATEX


Astro p. 138

DISCO - UGR<22

FORUM UGR<22/25

ARGON

GHOST


Disco p. 152

Forum p. 154

Argon p. 156

Ghost p. 157



GENERAL CHARACTERISTICS

Techno System comes in a wide range of optics with different sets of LED sources. This allows the lamp to fit any system and obtain the best lighting output with the greatest energy efficiency; available with a **standard length** of 1421 mm and 575/857/1139/1703/2267/3395 mm **upon request**. Equipped with latest generation, high efficiency LED CRI 80 HE and **CRI 90** LED sources, Thanks to the dedicated support box, the system can fit Fosnova spotlights from the **Fashion and Vision 2.0** range and from the **Safety Flag** emergency series, or with a presence and light **sensor**.

Housing: in rolled galvanized steel, pre-coated with polyester resin, UV-stabilised, with rounded edges and ABS ends.

Optics: it comes in two separate versions:

- one with **optics lens in PMMA** and different light distributions, including 90° symmetric, 25° asymmetric, 25° bi-asymmetric, 30°x80° elliptic, UGR<22 and 60° wide-beam curves
- one with **semi-spherical diffuser** and wide-beam light distribution.

Equipment: **3-pole** insulator block with phase selection (**5-pole** insulator block for the **EM**ergency and **DALI** DIMMable versions).

Supplied with external clamping system to hook the fixture directly to the cable track to combine with **5/7/11** pole track with the relevant phase selection.

LED characteristics:

Power factor: ≥ 0.95 .

Luminous flux maintenance:

(L90B10): 30000h.

(L85B10): 50000h.

(L75B10): 80000h.

Photobiological risk class:

exempt group

Ambient temperature:

-10°C to + 40°C

OTHER CHARACTERISTICS



The fixture can be easily and, above all, safely hooked to the track with the clips thanks to the mechanical safety locking system. With its simple, modern design Techno System blends perfectly into any space



Mechanical safety lock to mount the lighting fixture directly to the track



Plug insulator block mounted directly onto the fixture's body

DIMM Standard version **CLD**
D-D (DALI) wiring
with **subcode -0041:**
DIG thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



EM:
subcode -07



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION



Quality: is built with accurately selected materials and electronic components to ensure amazing light levels and high precision optics as well as greater design flexibility, making the new Techno System a sector leading product.



Flexible: includes versions with high precision optics, making it the most complete solution for fulfilling the diverse needs of new lighting systems as well as for the relamping of existing installations.



Cost-effective: uses latest generation LED technology to produce light with unprecedented energy efficiency to notably reduce running costs and ensure quick payback.



Versatile: is the most complete solution to meet the diverse lighting needs of industrial and retail spaces; you can create continuous rows of light that can be easily adjusted to any interior architecture thanks to its spigot couplings.



Quick and easy: can be mounted in very few seconds; the lamp body can be hooked directly to the 6001 power track.



Low maintenance: features long-lasting LED sources, closed optics and a linear design that were specifically studied to minimize maintenance and cleaning needs to reduce running costs, while ensuring great light efficiency.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Version **CLD EC** wiring with **subcode -0050:** permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.



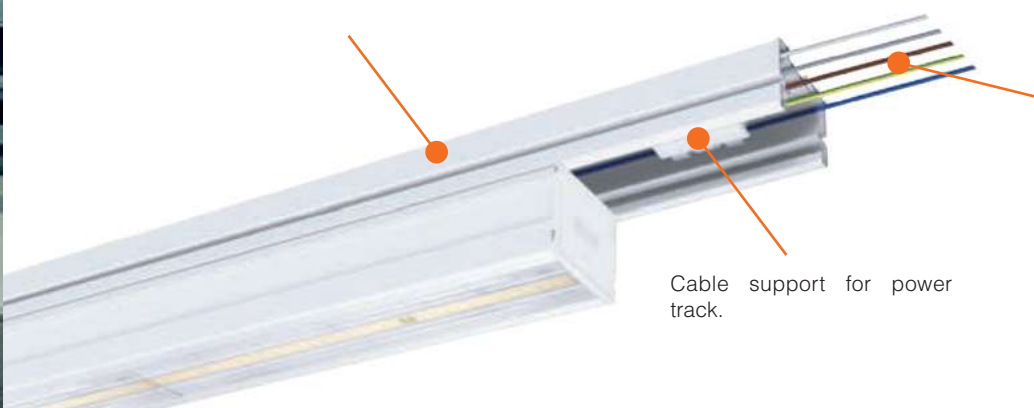
3000K-6500K versions and products fitting special LED sources for the **FOOD** sector (*Red Meat, Marbled Meat, Fish, Bread & Pastries and Produce*).

TECHNO SYSTEM FIXTURES WITH SUBCODE -42



Versions complete with upper cover (to be ordered separately with subcode -42) designed to mount the fixture directly to the ceiling.

Power track art. 6001: designed for the rapid mounting of **Techno System** fixtures. The power track can be installed using the dedicated accessory for suspension with cable or chain; thanks to spigot couplings, you can easily create continuous rows of light to meet diverse lighting and structural needs. The fixture and the track are easily locked together with the external clamping system for simple, safe and easy mounting, without the use of tools.



Cable support for power track.

The power track is designed to house **5-pole** or **7-pole** terminal block (the latter to be used for the **EM**ergency and **DIMM**able **DALI** versions) or **11-pole** blocks.

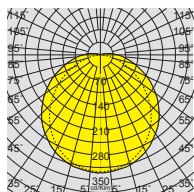


HE

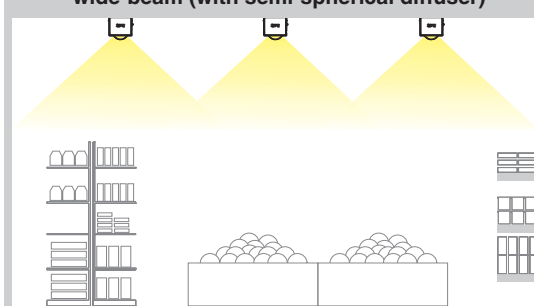


Versions with wide-beam distribution

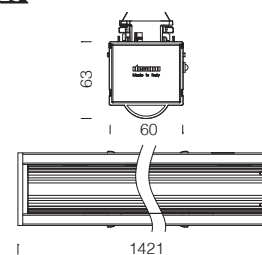
Fixtures with wide-beam light-distribution are suited for illuminating shelves in supermarkets or for aisles displaying fresh fruits and vegetables or generally any area that requires constant and uniform lighting.



wide-beam (with semi-spherical diffuser)



IP40IK07



6616 Techno System HE

wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133054-00	29	4000K - 4272lm - CRI 80
			133055-00	58	4000K - 8546lm - CRI 80

Available **EM** (sub-code -07) and **DIMM DALI** (sub-code -0041) versions.

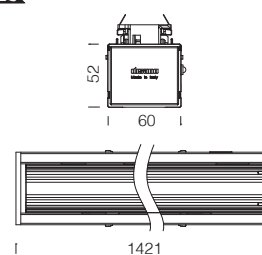
HE



60° wide-beam optics



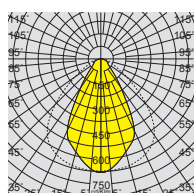
IP40IK07

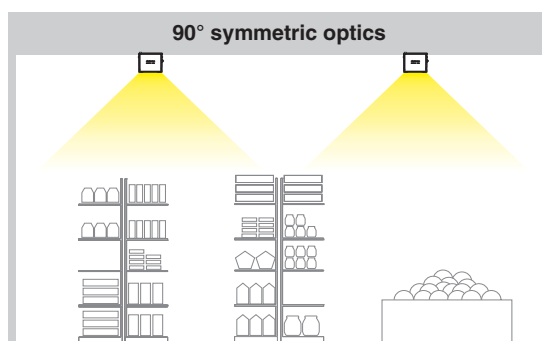
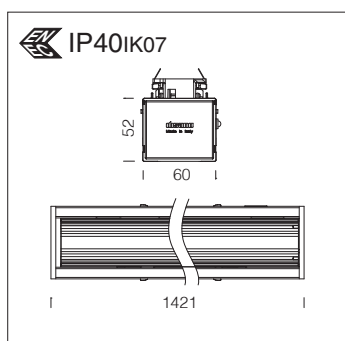


6615 Techno System HE

wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133044-00	29	4000K - 4424lm - CRI 80
			133045-00	58	4000K - 8849lm - CRI 80

Available **EM** (sub-code -07) and **DIMM DALI** (sub-code -0041) versions.

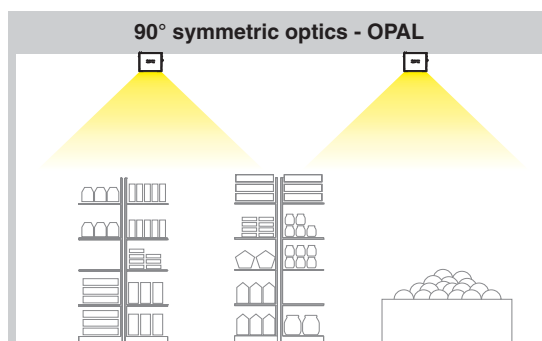
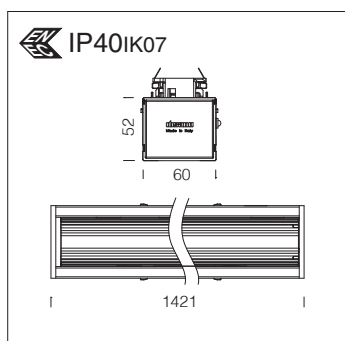
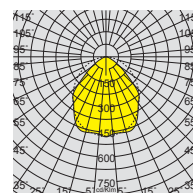




6611 Techno System HE

wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133005-00	29	4000K - 4419lm - CRI 80
			133006-00	58	4000K - 8838lm - CRI 80

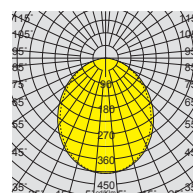
Available **EM** (sub-code -07) and **DIMM DALI** (sub-code -0041) versions.



6617 Techno System HE

wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133074-00	29	4000K - 4272lm - CRI 80
			133075-00	58	4000K - 8546lm - CRI 80

Available **EM** (sub-code -07) and **DIMM DALI** (sub-code -0041) versions.



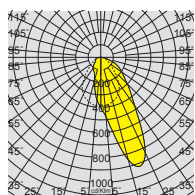
Version with OPAL optics
the wide-beam photometric distribution with anti-glare opal optics is ideal for installation onto ceilings with reduced heights.



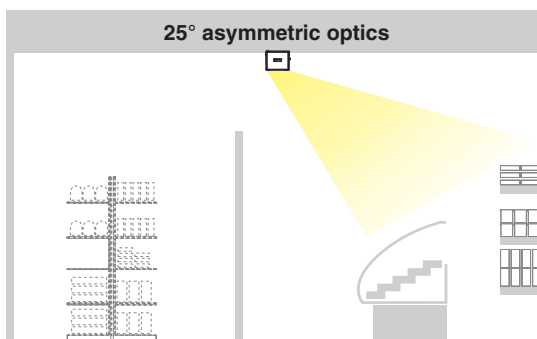
HE



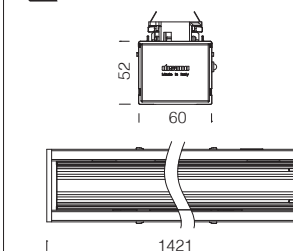
25° asymmetric optics
photometric distribution is studied for the furniture of retail areas where shelves are arranged laterally.



25° asymmetric optics



IP40IK07



6612 Techno System HE

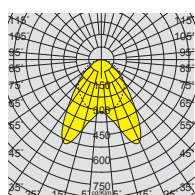
wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133014-00	29	4000K - 4095lm - CRI 80
			133015-00	58	4000K - 8191lm - CRI 80

Available **EM (sub-code -07)** and **DIMM DALI (sub-code -0041)** versions.

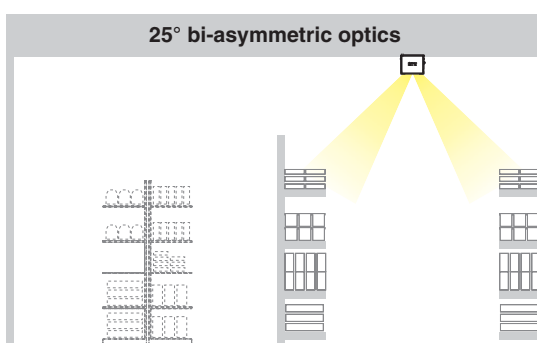
HE



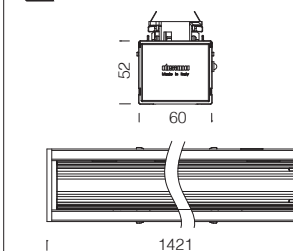
25° bi-asymmetric optics
perfect for retail spaces where the lighting system must produce accent lighting on shelves and on the wares, while the lighting in the aisles is more general.



25° bi-asymmetric optics



IP40IK07

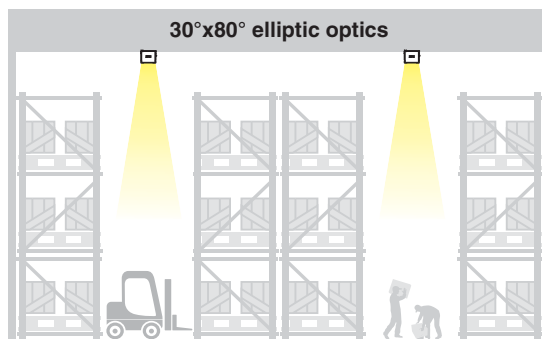
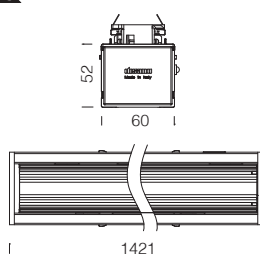


6613 Techno System HE

wattage	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	1.80	1421	133024-00	29	4000K - 4543lm - CRI 80
			133025-00	58	4000K - 9086lm - CRI 80

Available **EM (sub-code -07)** and **DIMM DALI (sub-code -0041)** versions.

IP40IK07



HE

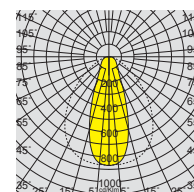


6614 Techno System HE

			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	weight	L	code	W tot	K - ølm - CRI
LED	1.80	1421	133034-00	29	4000K - 4396lm - CRI 80
			133035-00	58	4000K - 8793lm - CRI 80

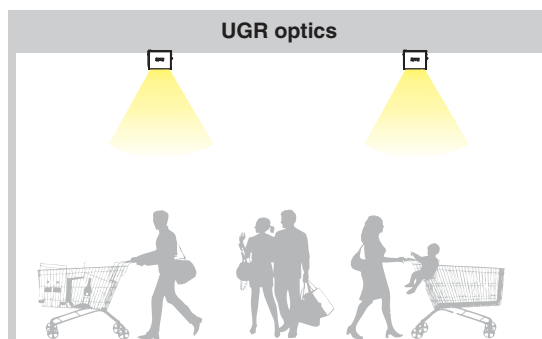
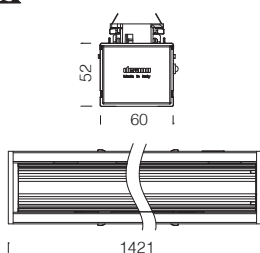
Available EM (sub-code -07) and DIMM DALI (sub-code -0041) versions.

30°x80° elliptic optics
suited for illuminating retail stores with tall shelves, where light must spread out evenly and efficiently.



SUSPENSION

IP40IK07



HE

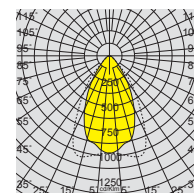
UGR<19

*UGR<22



6606 Techno System HE - UGR

		CLD	CLD E	CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)	
wattage	L	code	code	code	W tot	K - ølm - CRI
LED	1421	133062-60	133062-6007	133062-6041	33	4000K - 4591lm - CRI 80
LED *		133063-60	133063-6007	133063-6041	65	4000K - 9242lm - CRI 80



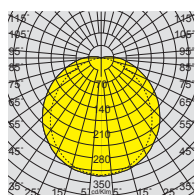
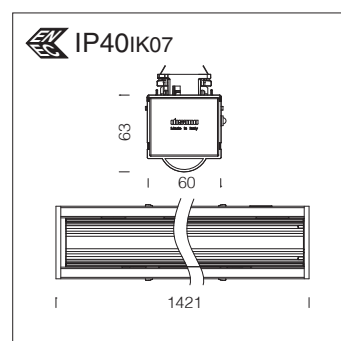
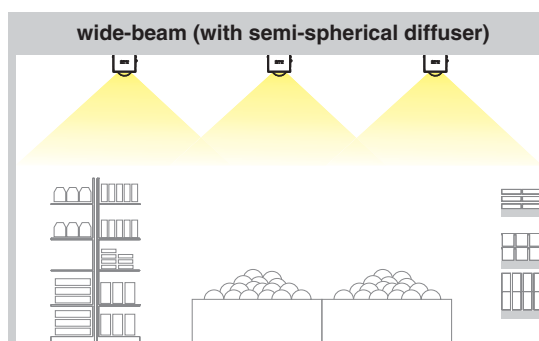
The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30**; **the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

Classification of UGR values by applications

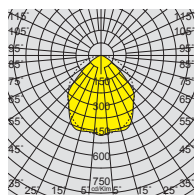
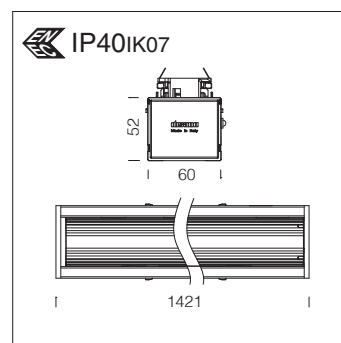
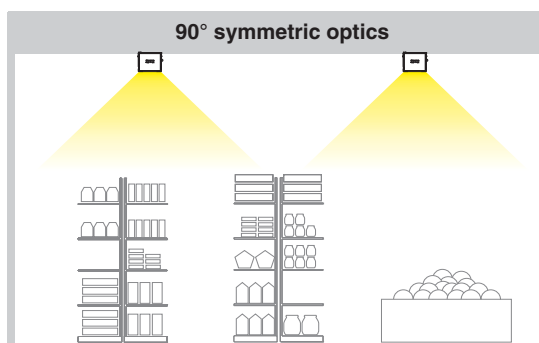
UGR	≤ 16	Very demanding applications (technical drawings)
	≤ 19	Offices and schools (reading, business meetings, computer work)
	≤ 22	Industrial applications, craftsmen
	≤ 25	Transit areas
	> 28	High glare

Below are some examples of industrial environments requiring the installation of fixtures with **UGR<22** in compliance with standard **UNI-EN 12464-1**:

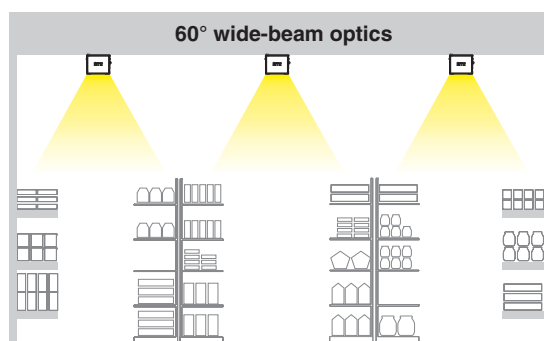
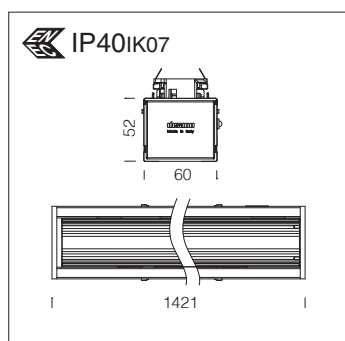
- General areas inside buildings – storage areas
- Industrial and manufacturing activities
- Chemical and pharmaceutical industry
- Mechanical, electronic and electro-technical industry
- Paper mills



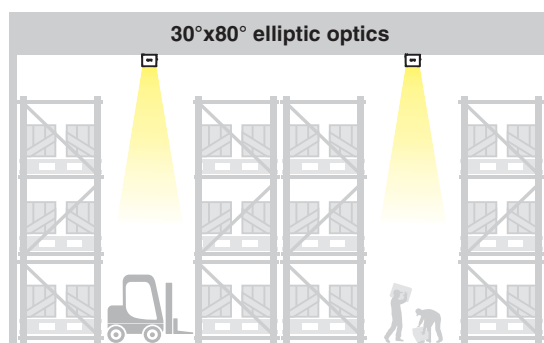
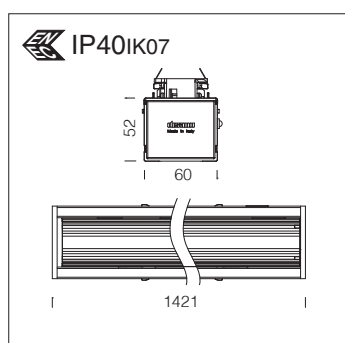
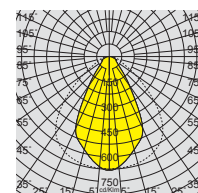
6605 Techno System						
wattage	L	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	1421	133052-00	133052-07	133052-0041	34	4000K - 3415lm - CRI 90
		133053-00	133053-07	133053-0041	68	4000K - 6831lm - CRI 90



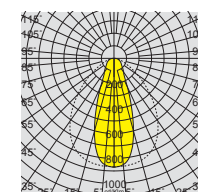
6600 Techno System						
wattage	L	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	1421	133002-00	133002-07	133002-0041	34	4000K - 3532lm - CRI 90
		133003-00	133003-07	133003-0041	68	4000K - 7065lm - CRI 90

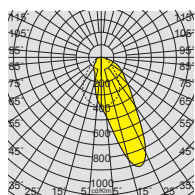
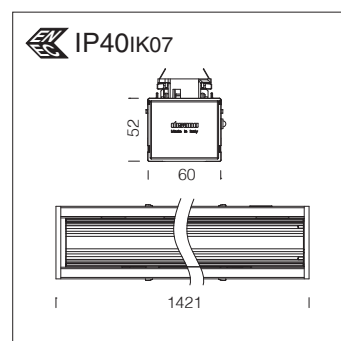
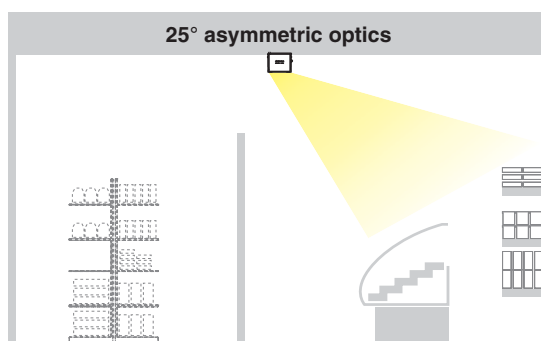


6604 Techno System						
wattage	L	CLD	CLD E	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	1421	code	code	code		K - ølm - CRI
		133042-00	133042-07	133042-0041	34	4000K - 3536lm - CRI 90
		133043-00	133043-07	133043-0041	68	4000K - 7073lm - CRI 90

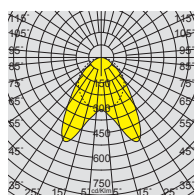
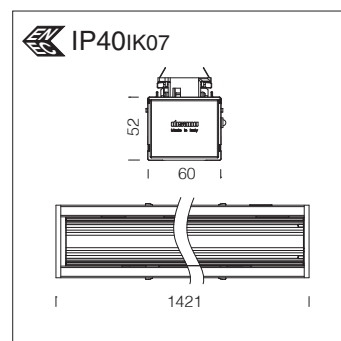
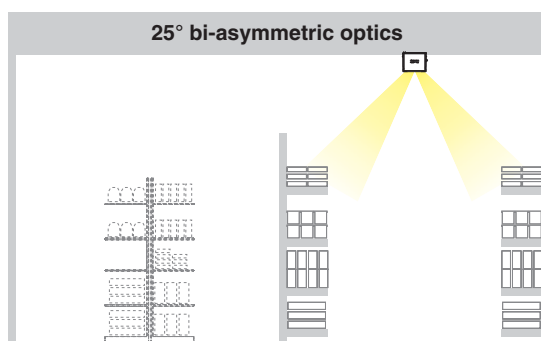


6603 Techno System						
wattage	L	CLD	CLD E	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	1421	code	code	code		K - ølm - CRI
		133032-00	133032-07	133032-0041	34	4000K - 3514lm - CRI 90
		133033-00	133033-07	133033-0041	68	4000K - 7029lm - CRI 90

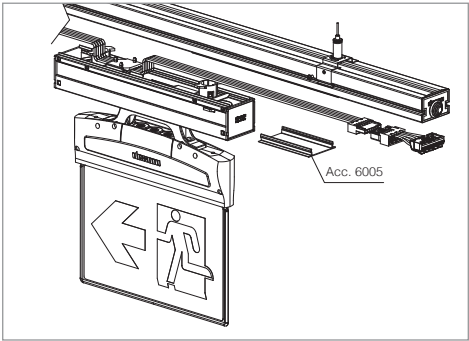
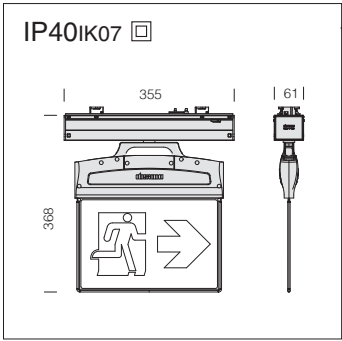




6601 Techno System						
wattage	L	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	1421	133012-00	133012-07	133012-0041	34	4000K - 3273lm - CRI 90
		133013-00	133013-07	133013-0041	68	4000K - 6547lm - CRI 90



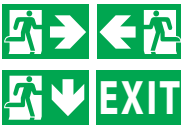
6602 Techno System						
wattage	L	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	1421	133022-00	133022-07	133022-0041	34	4000K - 3631lm - CRI 90
		133023-00	133023-07	133023-0041	68	4000K - 7263lm - CRI 90



Housing: in white plastic material.
Reflector: in transparent plexiglass.
Versions:
emergency run time: 60/180 minutes. When power is restored, the battery recharges automatically in 12/24h hours.

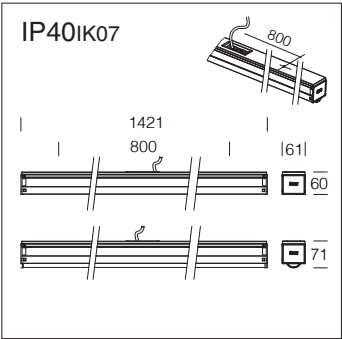
6610 Safety Flag S.A.				
		CLD CEM-L		LED (tj= 25 °C)
wattage	colour	weight	code	autonomy - K - CRI
LED	white	1.00	133100-00	1h - 6000K - CRI>80
			133101-00	3h - 6000K - CRI>80
Version for Techno System.				

acc. 470 labels - Self-adhesive pictograms available and visible up to 37 m. UNI EN1838



acc. 470 labels	
right out	995133-00
left out	995134-00
down out	995135-00
exit	995136-00

TECHNO SYSTEM LED DIRECTLY MOUNTED TO THE CEILING

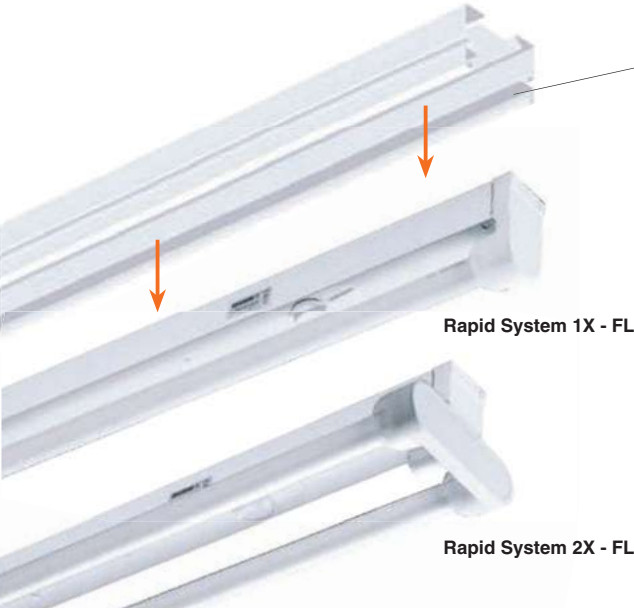


All versions of the **Techno System** LED series with subcode **-42** are equipped with a special upper cover for the direct mounting to the ceiling; this allows the installation of the ceiling lamp without using the cable track.



REPLACE YOUR RAPID SYSTEM FL FIXTURES WITH THE NEW TECHNO SYSTEM LED

All **Techno System LED** fixtures with **subcode -0059** are designed to directly replace Rapid System FL ceiling lamps. The special mounting clip will make relamping quick and easy.



Existing (previously installed)
6000 cable track





GENERAL CHARACTERISTICS

Highlighting the freshness, colours and appearance of the foods on display is fundamental to improve the shopping experience and increase the customer's purchase intention. The **LED** sources especially designed for the **FOOD** sector are the best solution to effectively illuminate the foods on display, such as: **MEAT, FISH, FRUIT, VEGETABLES, CHEESE, BREAD AND PASTRY.**

The range of products presented for the **FOOD** retailing sector ensures incredible results for any type of food product. Bright, lively and brilliant colours are guaranteed by **LED** lights combined with high colour renderings and dedicated colour spectrums.

This result is also achieved with high performance optics to further improve energy-efficiency and reduce consumption. **LEDs** are manufactured to have a low impact on the environment and ensure the correct energy classification of lighting fixtures.

LED technology offers over 50,000 hours of practically maintenance-free operation; furthermore **LED** sources are well suited to ensure food safety, because they do not emit infrared and ultraviolet radiations that have negative and degenerative effects on the food, accelerating the decay of the organoleptic properties of the product.

CATEGORY

FEATURES



Meat and meat products

Enhancing the red colour of meat adds a fresher look to the products.



Bread and bakery

Warm light enhances the gold hue of bakery products.



Cheese and dairy products

White light is also suitable for fresh cheese and attracts buyers.



Fruit and vegetables

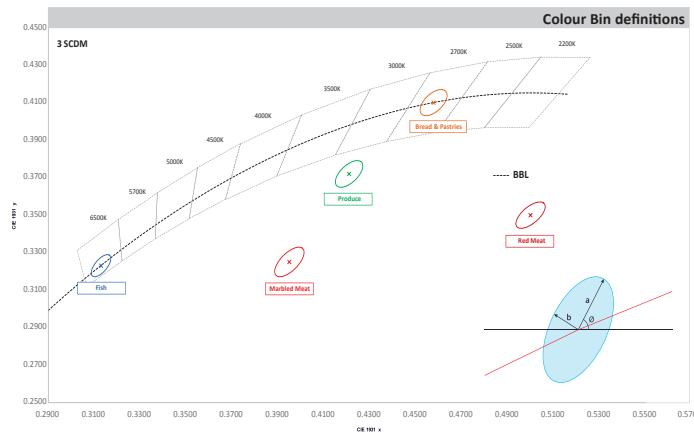
Bright white light enhances the colour of fresh vegetables, while warm colours make fruit look more attractive.



Fish and shellfish

Cold white light reflecting on the ice is perfect for fresh fish, adding to it the appearance of fish just out of the water.

Bins are colour delimitations of the **LED** source. New generation products like **FOOD LED** have a colour group area and an innovative position on the virtual white curve (BBL). Slightly higher costs mean increased lighting quality, more saleable wares and greater visual comfort.



PRODUCT	COLOUR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
Produce	Single 3-step MacAdam ellipse	(0.4210, 0.3720)	0.00834	0.00408	53.20°
Red Meat	Single 3-step MacAdam ellipse	(0.5000, 0.3500)	0.00862	0.00397	49.30°
Marbled Meat	Single 3-step MacAdam ellipse	(0.3950, 0.3250)	0.00939	0.00402	53.70°
Fish	Single 3-step MacAdam ellipse	(0.3130, 0.3230)	0.00669	0.00285	58.60°
Bread & Pastries	Single 3-step MacAdam ellipse	(0.4578, 0.4101)	0.00810	0.00420	53.70°

Graphic representation of BINNING: choice of **LEDs** to use in relation to their colour temperature.

UPON REQUEST

Versions with special **LEDs** for the **FOOD** industry (*Red Meat, Marbled Meat, Fish, Bread & Pastries and Produce*).



MEAT

subcode -00000036



BREAD - CHEESE

subcode -00000034



FRUIT - VEGETABLE

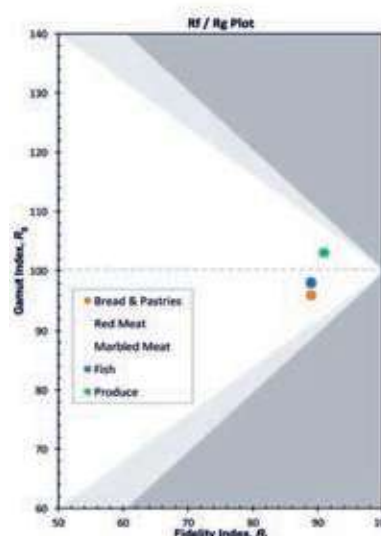
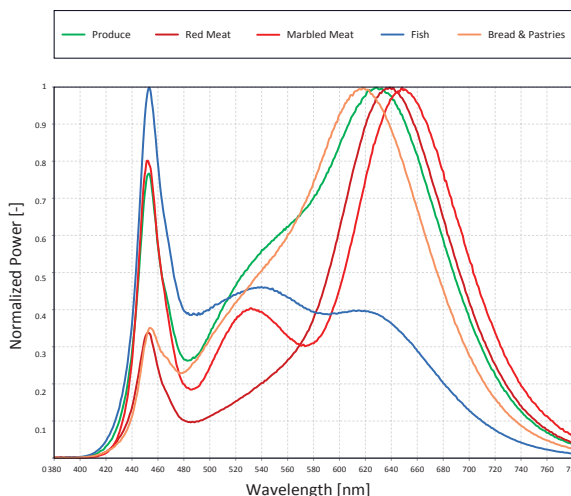
subcode -00000035



FISH

subcode -00000037

Spectral Power Distribution Characteristics



Measure

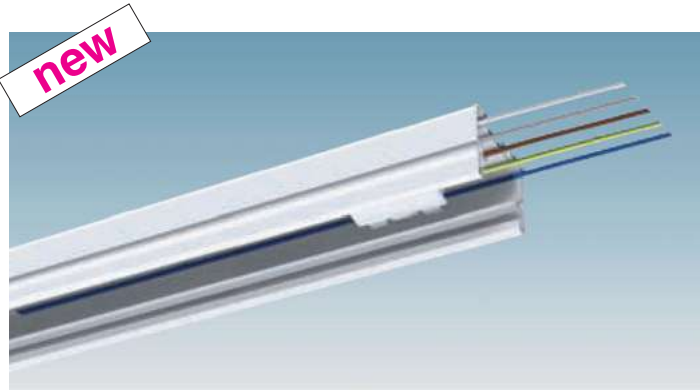
Fidelity Index - Rf: analogous to CIE Ra (CRI).

Characterizes the average color shift of the 99 CES to characterize the overall level of similarity between the test source and reference illuminant. Values range from 0 to 100.

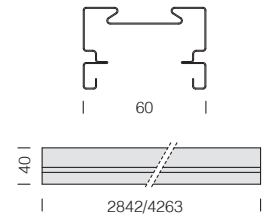
Gamut Index - Rg: compares the area enclosed by the average chromaticity coordinates in each of 16 hue bins to characterize the average saturation level of the test source compared to the reference illuminant. A neutral score is 100, with values greater than 100 indicating an increase in saturation and values less than 100 indicating a decrease in saturation. The range in values grows as fidelity decreases.

Rf and Rg form a complimentary two-measure system, which can be plotted to visually illustrate the tradeoff between fidelity and saturation. The blue points represent real sources, with the shaded areas approximating combinations that are not possible for sources on the blackbody locus (light gray) or not classified as white light (dark gray).

Track housing: painted rolled steel with rounded edges for hand safety and galvanized steel previously stove-enamelled with a UV-stabilised, anti-yellowing white polyester resin applied after phosphate treatment; supplied with cable 1,5 mm².

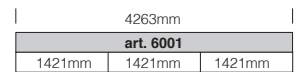
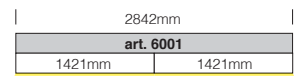


IP40IK08



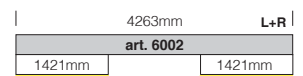
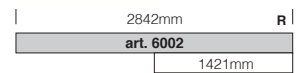
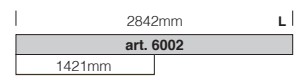
The **power track 6001** is available in two standard lengths, 2842 mm and 4263 m. These lengths correspond exactly to the length of 2 or 3 linear luminaires, so basically the track is made to be used with 2 or 3 connectors depending on the length chosen.

6001 power track - for continuous line					
			S		
size	colour	conductors	weight	code	
2842	white	5-pole	3.25	132960-00	
		7-pole		132961-00	
		11-pole		13296146011138	
4263	white	5-pole	4.70	132965-00	
		7-pole		132966-00	
		11-pole		13296600010923	
Designed to allow the quick continuous line mounting of luminaires of the Techno System series.					



The **power track 6002** is designed to be used with a lower number of connectors (1 or 2) for applications where continuous line mounting is not required. It will ensure aesthetic uniformity (due to the absence of unused connectors) and increase savings.

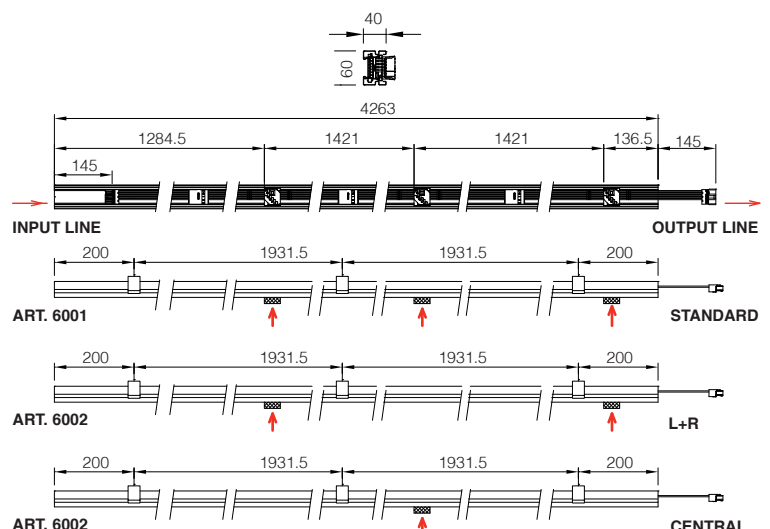
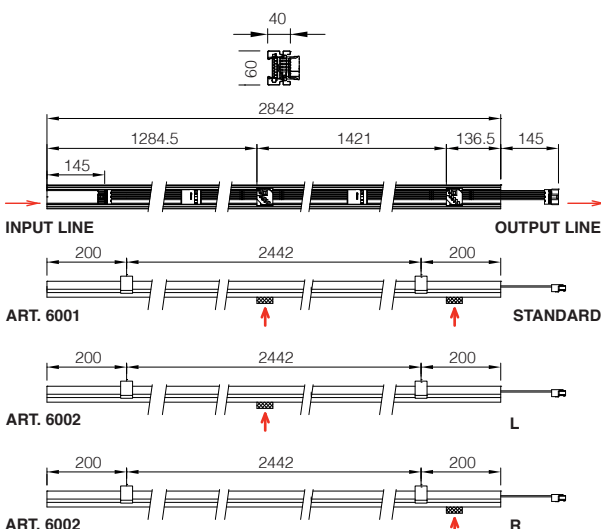
6002 power track - non-continuous line					
			S		
size	colour	conductors	weight	1 connector (L) code	1 connector (R) code
2842 1 connector	white	5-pole	3.25	13296046000200	13296046002265
		7-pole		13296100002265	13296100002021
		11-pole		13296100002266	13296100002267
				2 connectors (L+R) code	1 connector (CENTRAL) code
4263 1/2 connectors	white	5-pole	4.70	13296546000199	13296546002265
		7-pole		13296600002022	13296600002023
		11-pole		13296600002025	13296600002268
Designed to allow the quick non-continuous line mounting of luminaires of the Techno System series.					



The **power track 6003** is made to be used without any fixed connector. In this case luminaires are mounted with accessory 6620 (mobile disconnector), by positioning any number of luminaires anywhere along the track. Further lengths and special configurations can be ordered after verification upon the buyer's request.

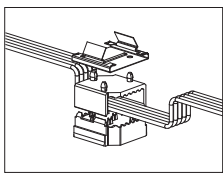
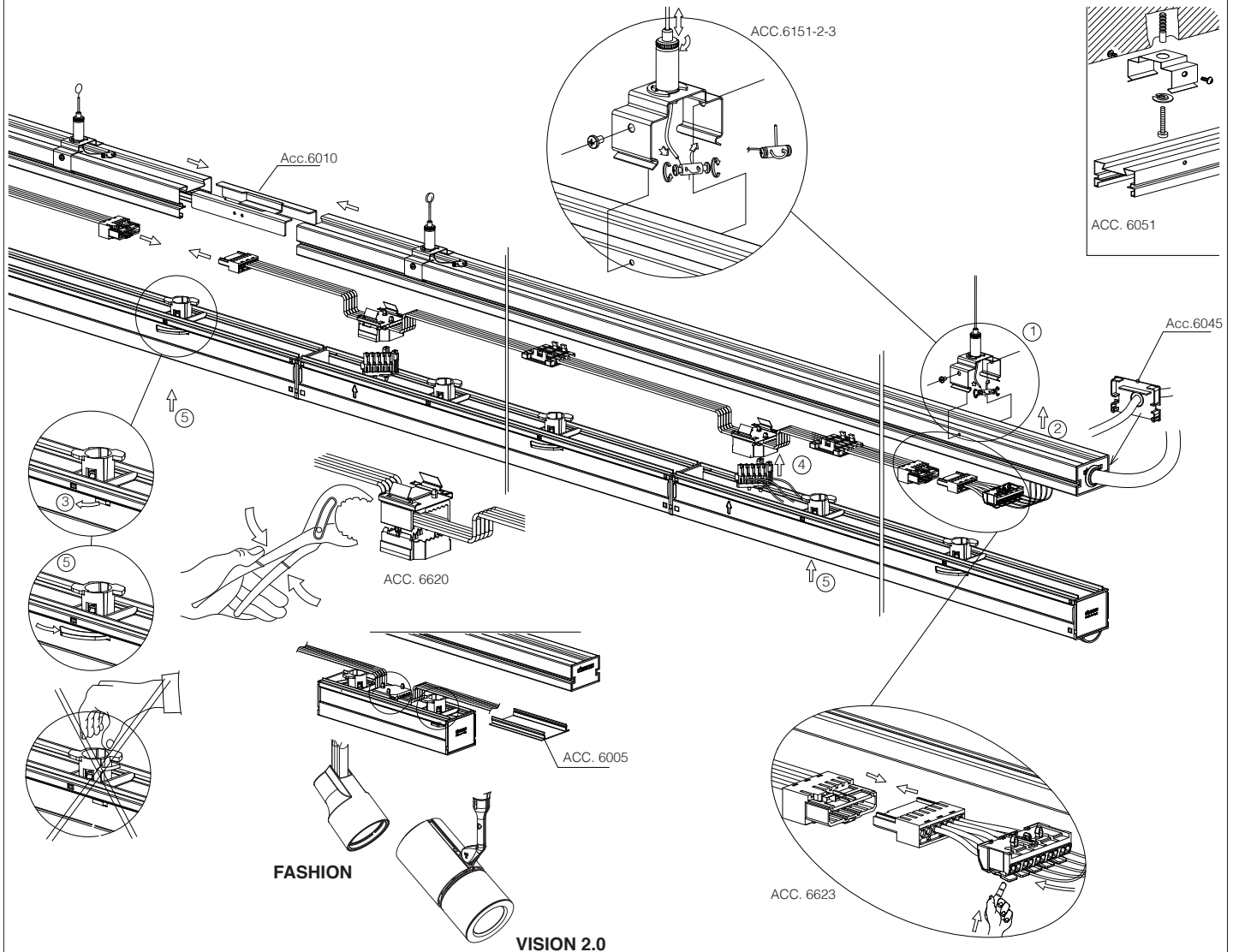
6003 power track - without connector				
		S		
size	colour	conductors	weight	code
2842	white	5-pole	3.25	132970-00
		7-pole		132971-00
		11-pole		132972-00
4263	white	5-pole	4.70	132975-00
		7-pole		132976-00
		11-pole		132977-00
Designed to allow the mounting of luminaires of the Techno System series anywhere along the track. Purchase acc. 6620 separately.				

Detail of fixed connector position with power track 6001 or 6002



Frame structure for the creation of continuous row of Techno System fixtures or in combination with other products (see table). Simple and quick mounting as a ceiling or a suspension fixture thanks to the wide range of accessories. The track is designed to house **5-pole** or **7-pole** terminal block (the latter to be used for the **EM**ergency and **DIMM**able **DALI** versions) or **11-pole** block with rapid connectors.

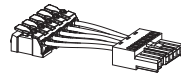
Mounting Techno System fixture on power track art. 6001 - 6002 - 6003



acc. 6620 insulator block

white	5-pole	994030-00
white	7-pole	994031-00
white	11-pole	994031-00001185

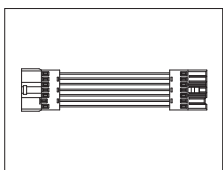
To mount an extra lamp to power track art. 6001-6002-6003.



acc. 6623 power supply

white	5-pole	994036-00
white	7-pole	994037-00
white	11-pole	994037-46001136

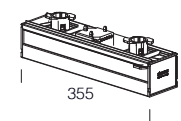
Always use for track power supply. Allowed lead cross-section 2.5 sqmm.



acc. 6621 electric joint

white	5-pole	994032-00
white	7-pole	994033-00
white	11-pole	994033-46001135

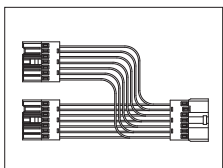
To be used as a angle, cross drop-counterdrop joint to electrical connect 2 tracks art. 6001-6002-6003. Recommended for use in combination with acc. 6015/6025/6070.



acc. 6624 insulator block cover

white	5-pole	994038-00
white	7-pole	994039-00
white	11-pole	994044-00

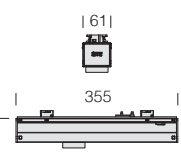
To cover not used insulator block.



acc. 6622 T electric joint

white	5-pole	994034-00
white	7-pole	994035-00
white	11-pole	994042-00

To be used as a T joint to electrical connect 3 tracks art. 6001-6002-6003. Recommended for use in combination with acc. 6020.



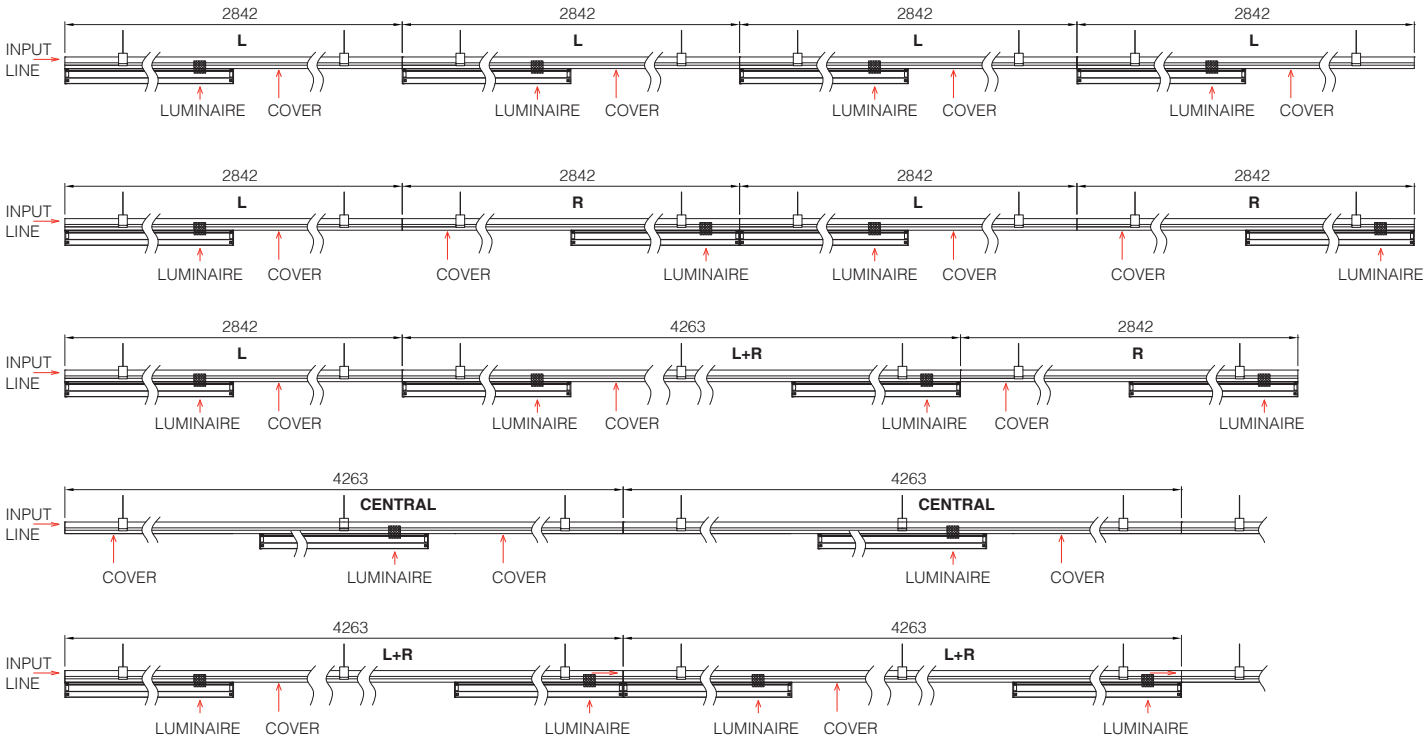
acc. 6625 presence and light sensor *

white	994046-00
-------	-----------

Complete with automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

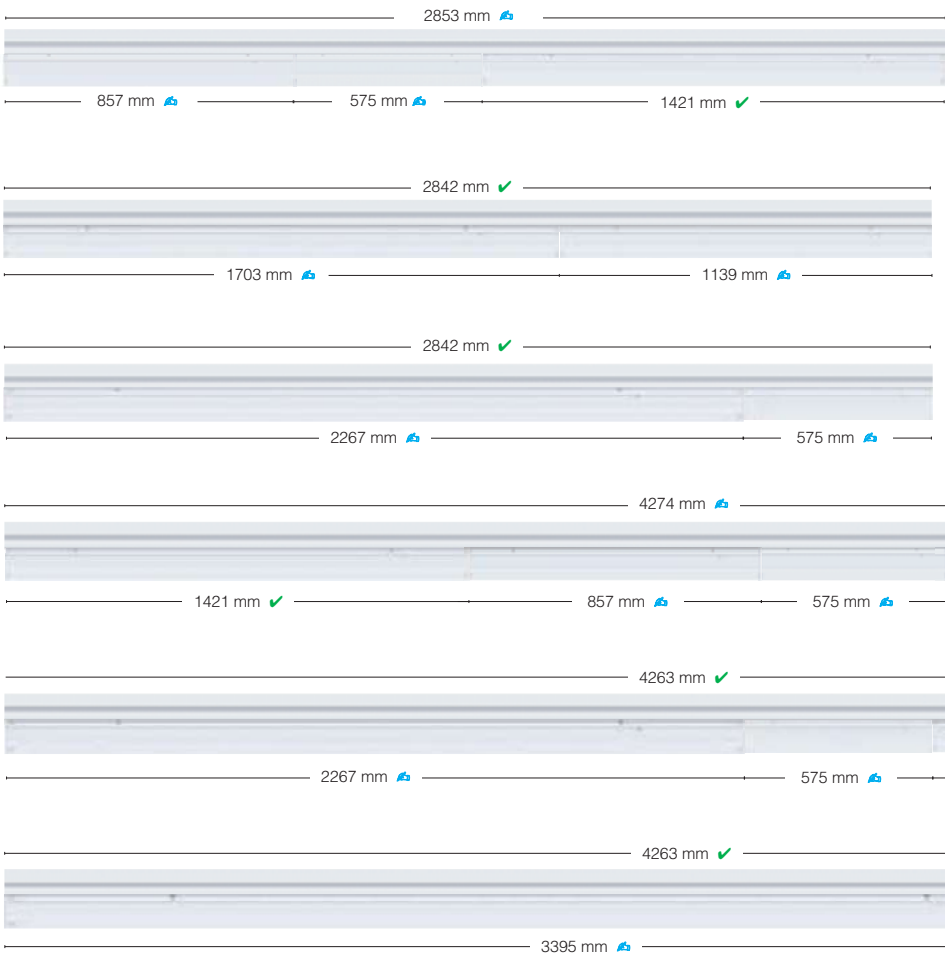
* For more info, see chapter Lighting management systems and recommendations

Possible combinations to obtain “**NOT CONTINUOUS LIGHT**” solutions with cable tracks in the standard version (2842 mm and 4263 mm) and in the ceiling lamp version (standard 1421 mm versions).



Overview of the possible combinations to obtain “**ALL LIGHT**” solutions with cable tracks in the standard version (2842 mm and 4263 mm) and in the ceiling lamp version (both standard 1421 mm version and custom size version).

✓ = standard version of Techno System cable track or ceiling lamp
🔧 = custom version of Techno System cable track or ceiling lamp

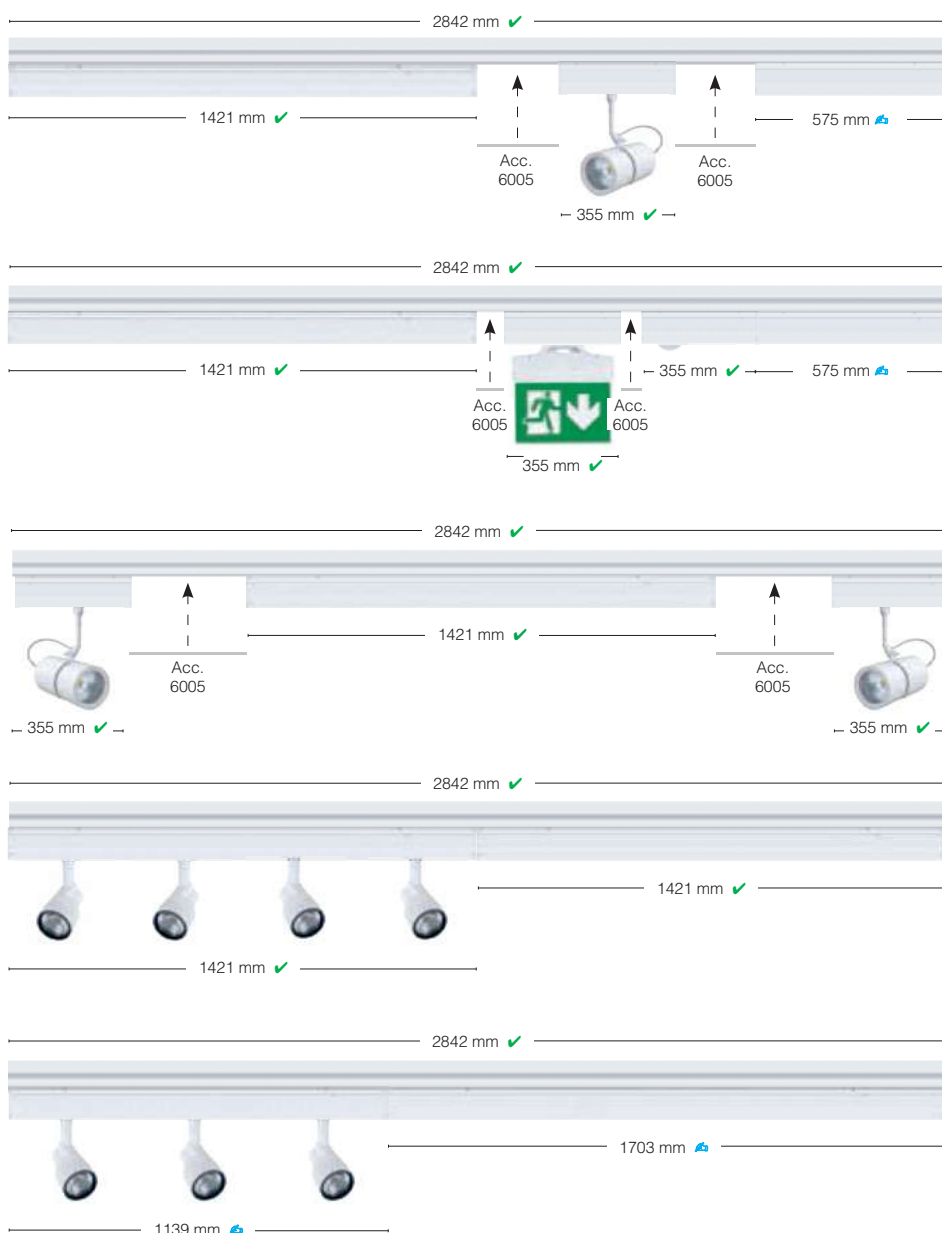


Size		
	✓ standard ceiling lamp	🔧 ceiling lamp on request
Techno System	1421 mm	575 mm
		857 mm
		1139 mm
		1703 mm
		2267 mm
		3395 mm
Power track art. 6001	2842 mm	2853 mm
	4263 mm	4274 mm



The following compositions require all the parts left exposed by the fixtures to be covered with Acc. 6005 that can be easily cut out to the desired size.

Thanks to the dedicated support box, the system can fit Fosnova spotlights from the **Fashion** (up to 30W-2500lm) **and Vision 2.0** (up to 54W-5500lm).

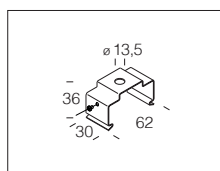
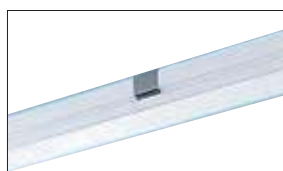
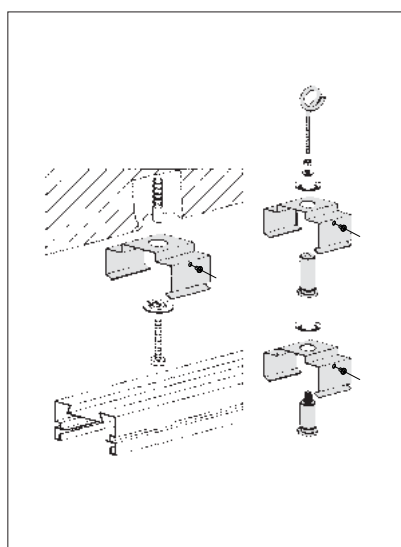
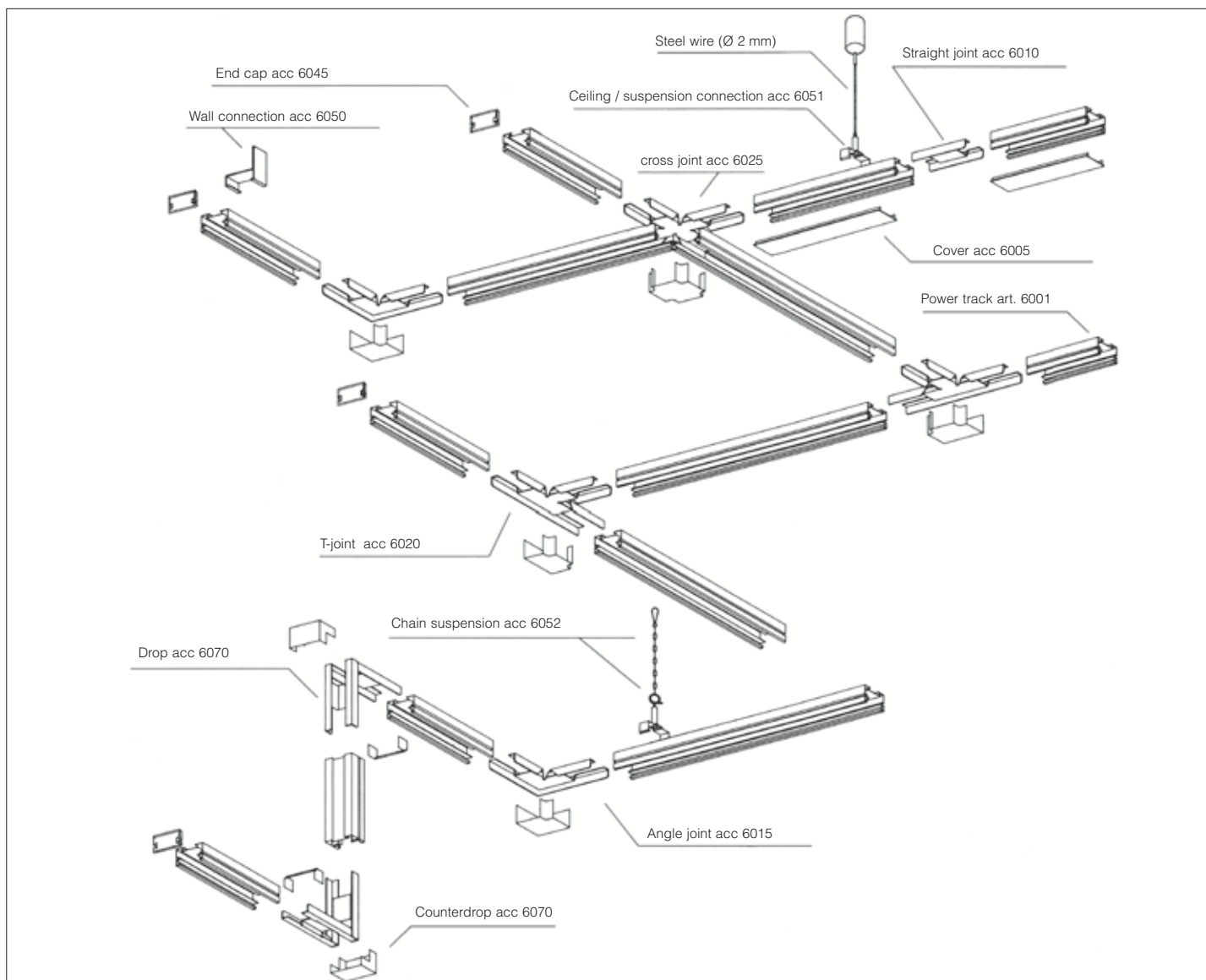


Absorbed power (W tot= LED+driver) with reference to the lengths of the ceiling lamps:

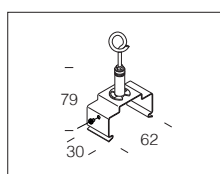
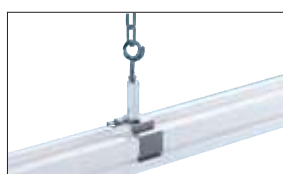
✓ standard: 1421 mm

📏 upon request: 575 mm - 857 mm - 1139 mm - 1703 mm - 2267 mm

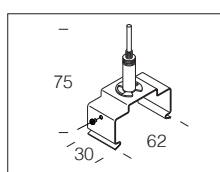
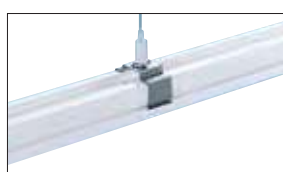
mm	Art.	W tot	
		STANDARD	HE
1421 mm standard ✔	6600	34 W	29 W
	6611 - 6617 HE	68 W	58 W
	6601 - 6612 HE	34 W	29 W
		68 W	58 W
	6602 - 6613 HE	34 W	29 W
		68 W	58 W
	6603 - 6614 HE	34 W	29 W
		68 W	58 W
	6604 - 6615 HE	34 W	29 W
68 W		58 W	
6605 - 6616 HE	34 W	29 W	
	68 W	58 W	
6606 HE	33 W	-	
		65 W	-
575 mm 🌀	6600	13 W	11 W
	6611 - 6617 HE	27 W	23 W
	6601 - 6612 HE	13 W	11 W
		27 W	23 W
	6602 - 6613 HE	13 W	11 W
		27 W	23 W
	6603 - 6614 HE	13 W	11 W
		27 W	23 W
	6604 - 6615 HE	13 W	11 W
27 W		23 W	
6605 - 6616 HE	13 W	11 W	
		27 W	23 W
857 mm 🌀	6600	20 W	17 W
	6611 - 6617 HE	41 W	35 W
	6601 - 6612 HE	20 W	17 W
		41 W	35 W
	6602 - 6613 HE	20 W	17 W
		41 W	35 W
	6603 - 6614 HE	20 W	17 W
		41 W	35 W
	6604 - 6615 HE	20 W	17 W
41 W		35 W	
6605 - 6616 HE	20 W	17 W	
		41 W	35 W
1139 mm 🌀	6600	27 W	23 W
	6611 - 6617 HE	54 W	46 W
	6601 - 6612 HE	27 W	23 W
		54 W	46 W
	6602 - 6613 HE	27 W	23 W
		54 W	46 W
	6603 - 6614 HE	27 W	23 W
		54 W	46 W
	6604 - 6615 HE	27 W	23 W
54 W		46 W	
6605 - 6616 HE	27 W	23 W	
		54 W	46 W
1703 mm 🌀	6600	41 W	35 W
	6611 - 6617 HE	81 W	70 W
	6601 - 6612 HE	41 W	35 W
		81 W	70 W
	6602 - 6613 HE	41 W	35 W
		81 W	70 W
	6603 - 6614 HE	41 W	35 W
		81 W	70 W
	6604 - 6615 HE	41 W	35 W
81 W		70 W	
6605 - 6616 HE	41 W	35 W	
		81 W	70 W
2267 mm 🌀	6600	54 W	46 W
	6611 - 6617 HE	108 W	92 W
	6601 - 6612 HE	54 W	46 W
		108 W	92 W
	6602 - 6613 HE	54 W	46 W
		108 W	92 W
	6603 - 6614 HE	54 W	46 W
		108 W	92 W
	6604 - 6615 HE	54 W	46 W
108 W		92 W	
6605 - 6616 HE	54 W	46 W	
		108 W	92 W
3395 mm 🌀	6600	81 W	69 W
	6611 - 6617 HE	162 W	138 W
	6601 - 6612 HE	81 W	69 W
		162 W	138 W
	6602 - 6613 HE	81 W	69 W
		162 W	138 W
	6603 - 6614 HE	81 W	69 W
		162 W	138 W
	6604 - 6615 HE	81 W	69 W
162 W		138 W	
6605 - 6616 HE	81 W	69 W	
		162 W	138 W



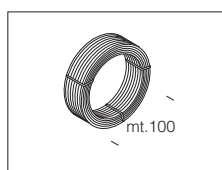
acc. 6051 ceiling / suspension connection	
stainless steel	132927-00
In steel. For direct ceiling mounting or suspension with rods. At least 2 pcs. per track.	



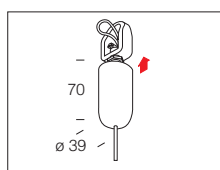
acc. 6052 chain suspension	
stainless steel	132928-00
In steel. For chain suspension. With track connection acc 6051. At least 2 pcs. per track.	



acc. 6053 wire suspension	
stainless steel	132929-00
In steel. For suspension with wire. With millimetric adjustment. Complete with acc 6051. Max load: 30 kg.	



acc. 6512 wire	
steel	132930-00
Steel wire. To be used when installation requires a longer wire than the one supplied with acc. 6510.	

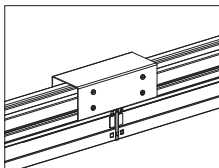


acc. 6510 suspension	
white	993914-00
Suspension supplied with Ø 2 mm steel wire, 1.5 m long. Max load: 30 kg. To suspend acc 6018.	

**acc. 6011 safety coupling**

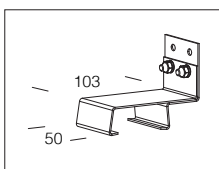
white 132907-00

Made of galvanized steel. We recommend using this coupling accessory when mounting the lamp near the joint of track art. 6001-6002-6003 to obtain greater mechanical safety.

**acc. 6050 wall bracket**

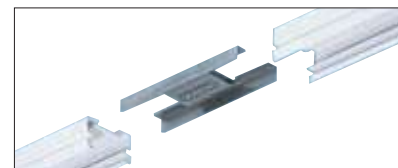
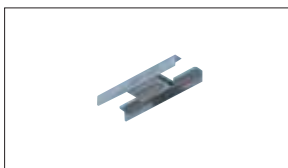
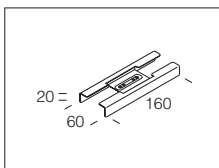
galvanized 132911-00

Zinc-plated steel bracket. For wall mounting of track art. 6001-6002-6003. 2 per pack.

**acc. 6010 straight joint**

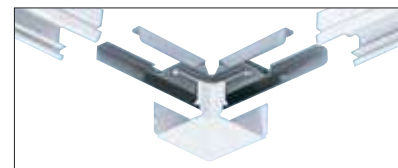
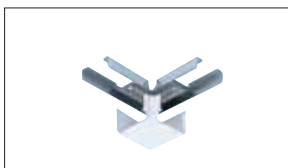
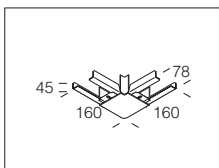
132902-00

Made of galvanized steel. For alignment of 2 tracks art. 6001-6002-6003. To be used in combination with acc. 6621.

**acc. 6015 angle joint**

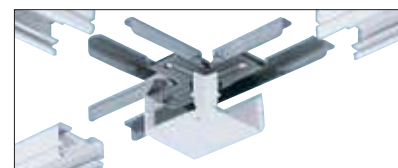
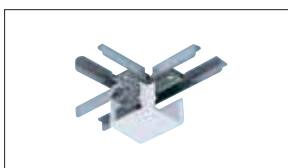
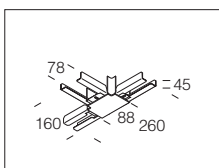
white 132903-00

Made of galvanized steel with a white thermoplastic material cover. For "L"- jointing of 2 tracks art. 6001-6002-6003. To be used in combination with acc. 6621.

**acc. 6020 T joint**

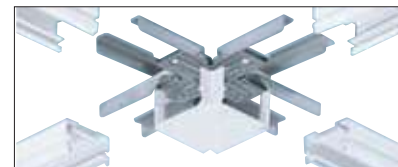
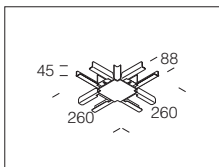
white 132904-00

Made of galvanized steel with a white thermoplastic material cover. For jointing of 3 tracks art. 6001-6002-6003. To be used in combination with acc. 6622.

**acc. 6025 cross joint**

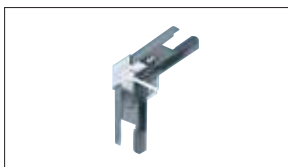
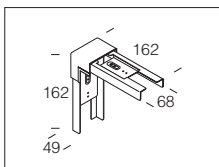
white 132905-00

Made of galvanized steel with a white thermoplastic material cover. For the jointing of 2/3/4 tracks art. 6001-6002-6003. To be used in combination with acc. 6621.

**acc. 6070 drop-counterdrop**

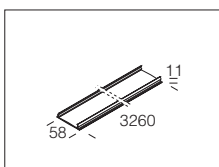
white 132914-00

Zinc plated steel joint with white thermoplastic material cover. To change the installation level of track art. 6001-6002-6003. To be used in combination with acc. 6621.

**acc. 6005 cover**

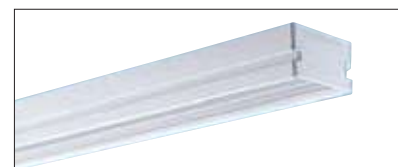
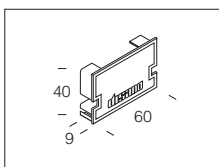
white 132901-00

V0 self-extinguishing PVC. To cover track art. 6001-6002-6003.

**acc. 6045 end cap**

white 132909-00

Made of white thermoplastic material. Used to close the end section of track art. 6001-6002-6003.





GENERAL CHARACTERISTICS

Fixture housing: galvanized steel previously stove-enamelled with UV-stabilised white polyester resin; rounded edges to prevent cutting; polycarbonate end caps.

Standard supply: nylon fastening pawl.

LED module: support in natural anodized extruded aluminium. Micro-fluted diffuser in methacrylate.

Upon request: 3000K versions, DIMM 1-10V and DALI.

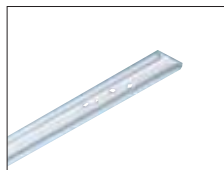
LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%: 80.000h (L80B20).
Photobiological safety class: Exempt group.



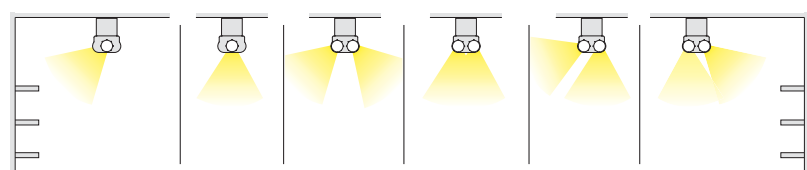
Rapid System accessories

acc. 6405 upper cover	
1x/2x - 628mm	237603-46
1x - 1186mm	237617-00
1x - 1486mm	237613-00
2x - 1186mm	237624-00
2x - 1486mm	237625-00

White steel. For ceiling mounting.



The LED tubes can be rotated to adjust light and therefore optimise the performance of optic accessories.

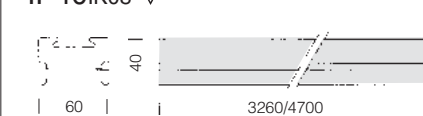


6000 Rapid system - track

		S	
length	colour	weight	code
3260	white	3.25	132900-00
4700	white	4.70	132923-00

Designed to be quickly attached to the Rapid System series luminaires.

IP40IK08



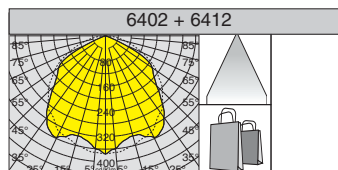
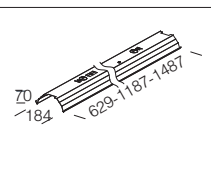
Provision for cable management



acc. 6412 wide-beam

L=629	237729-00
L=1187	237730-00
L=1487	237731-00

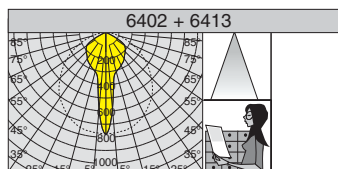
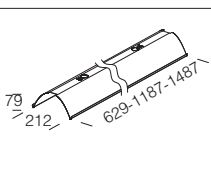
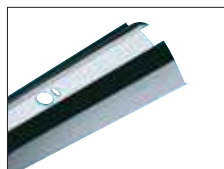
Polished matt gloss aluminium 99.85, anodised 2 μ .



acc. 6413 narrow-beam one/lamp

L=629	237732-00
L=1187	237733-00
L=1487	237736-00

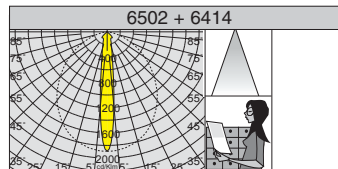
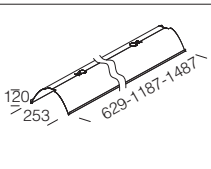
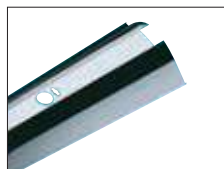
Polished high-gloss aluminium 99.85, anodised 2 μ .



acc. 6414 narrow-beam two-lamp

L=629	237766-00
L=1187	237764-00
L=1487	237765-00

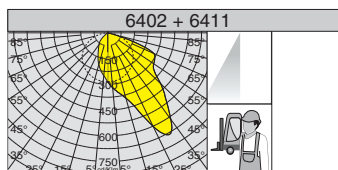
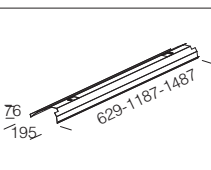
Polished high-gloss aluminium 99.85, anodised 2 μ .



acc. 6411 asymmetric reflector

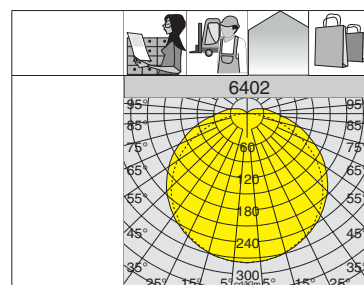
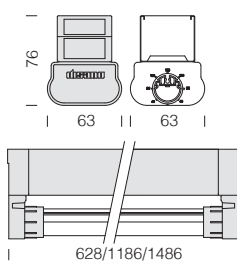
L=629	237623-00
L=1187	237619-00
L=1487	237622-00

Polished high-gloss aluminium 99.85, anodised 2 μ .



• = application examples

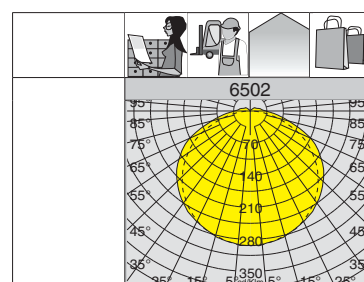
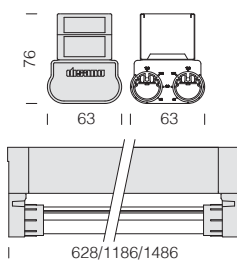
IP40IK07



6402 Rapid System - LED 1x

wattage	colour	CLD			CLD E			W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	L	code	weight	L	code		
LED 1x	white	1.10	628	237521-00				14	4000K - 1795lm - CRI≥80
		1.30	1186	237522-00	1.80	1186	237522-07	28	4000K - 3592lm - CRI≥80
		1.50	1486	237523-00	2.00	1486	237523-07	34	4000K - 4493lm - CRI≥80

IP40IK07



6502 Rapid System - LED 2x

wattage	colour	CLD			CLD E			W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	L	code	weight	L	code		
LED 2x	white	1.10	628	237541-00				28	4000K - 3496lm - CRI≥80
		1.30	1186	237542-00	1.80	1186	237542-07	56	4000K - 6694lm - CRI≥80
		1.50	1486	237543-00	2.00	1486	237543-07	68	4000K - 8743lm - CRI≥80



GENERAL CHARACTERISTICS

Highly flexible in use, Super provides maximum freedom to design lighting systems of any shape and structure. With few fastenings to be used, installation procedures are extremely easy and time saving.

Housing: in hot-dip galvanised rolled steel, with rounded profile to eliminate sharp edges.

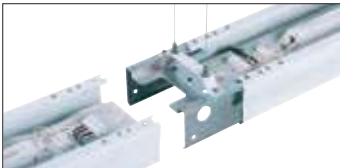
Reflector: satin aluminium. Not suitable for installation on ceiling

Coating: stove pre-enamelled with white polyester resin, UV-stabilized, upon phosphate treatment.

Standard supply: provision for the installation of power cable trunking (auxiliary services).

LED: Power factor ≥ 0.9
Luminous flux maintenance 80%: 80.000h (L80B20).
Photobiological safety class: Exempt group.

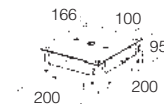
ACCESSORIES



acc. 1925 linear joint

galvanized	994649-00
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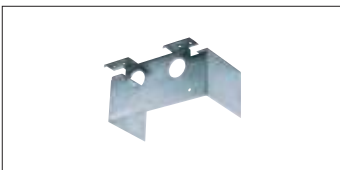
Made of galvanized steel. For suspension, continuous line or jointing of two fixtures, or used with acc. 1919 for "T" and cross jointing.



acc. 1911 cube

white	994641-00
-------	-----------

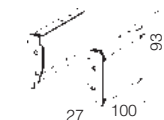
Made of steel. For joining of up to 4 fixtures. Supplied with two end caps. To be used with acc. 1914.



acc. 1919 angle joint

galvanized	994638-00
------------	-----------

Made of galvanized steel. For angle and T jointing.



acc. 1914 connecting bracket

galvanized	994637-00
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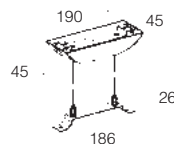
Made of galvanized steel. To be used with the cube acc. 1911. **2 per pack.**



acc. 1924 end cap

white	994636-00
-------	-----------

Made of white ABS. To be used as an end cap on modules when using acc. 1919/1925. **2 per pack.**



acc. 1916 plain suspension

white	994646-00
-------	-----------

Nylon cover with steel brackets. Supplied with steel wire (l=2.5 m) with millimeter adjustment device.

Super's great flexibility permits maximum freedom in designing any shape and layout.

Since it requires only a few mounting points, it is extremely easy and rapid to install providing excellent time savings.

10 -- B=L-110 B=L-110 110

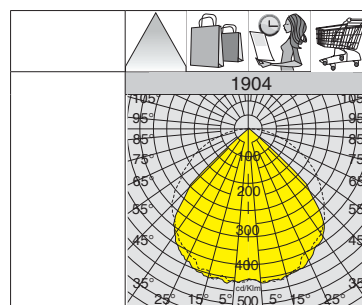
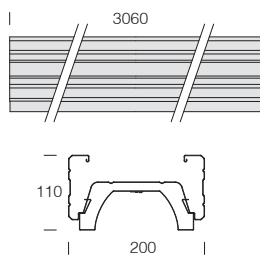


B =
Spacing for
suspensions
L =
Length of
modules

L 200 L
110 B=L-10 B=L-10 110



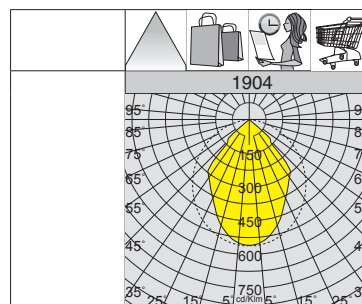
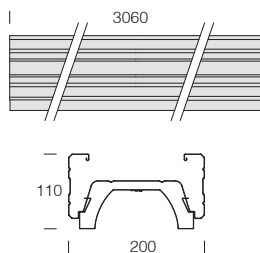
IP20IK03



1904 Super - LED 1x					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED 1x	white	9.00	124340-00	63	4000K - 6363lm - CRI≥80
			124340-39		3000K - 5918lm - CRI≥80

Upon request: DIMM 1-10V or DALI versions.

IP20IK03



1904 Super - LED 2x					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED 2x	white	9.00	124341-00	95	3000K - 10965lm - CRI≥80
			124342-00		4000K - 11732lm - CRI≥80



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Optics: made of PMMA with high temperature resistance and UV rays.

Diffuser: 4mm thick tempered glass, resistant to thermal shocks and impacts (art. 2882/83/84/88).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Equipment: The fixture is equipped with air recirculation valve and insulation connector for quick installation with **no need to open the fixture**; silicone rubber gasket; external screws and bolts in stainless steel.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Upon request: for **Class II** fixtures, protection up to 10KV.

OTHER CHARACTERISTICS



The heat dissipation system was designed to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.



Designed with an optical system capable of controlling the potential glare created by the growing light intensity of LEDs while achieving high photometric performance.



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION



Elliptical beam version come with the fixing bracket to allow a perfect mounting as a suspended fixture; Ideal version for warehouses and storage shelving.



Energy saving:

Saturno can save more energy compared to conventional discharge lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.

Registered Design **DM/100271** The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.



EM:
subcode -07

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Version **CLD D-D**
(**DALI**) wiring with
subcode **-0041**.



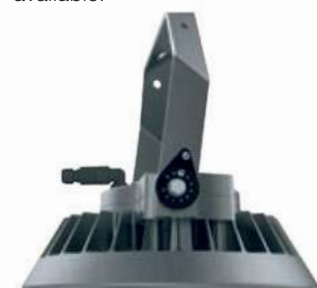
version with emergency wiring with centralized power supply **CLD EC** (subcode **-0050**).



Version with **AMBER LED 2200K** with subcode **-73**

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

Version equipped with bracket available.



Luminous flux maintenance Power factor ≥0.95		Wattage (tot.)	Allowed ambient temperature (min.°C ÷ max.°C)
80%	80.000h (L80B10) (art. 2882-2883-2884-2888)	64W	Ta = -20°C ÷ +45°C
		108W	Ta = -20°C ÷ +40°C
		151W	Ta = -20°C ÷ +35°C
80%	80.000h (L80B10) (art. 2885 HE)	69W	Ta = -20°C ÷ +45°C
		87W	Ta = -20°C ÷ +45°C
		89W	Ta = -20°C ÷ +45°C
		100W	Ta = -20°C ÷ +50°C
		129W	Ta = -20°C ÷ +40°C
		139W	Ta = -20°C ÷ +40°C
80%	60.000h (L80B20) (art. 2885 HP)	140W	Ta = -40°C ÷ +40°C
		186W	Ta = -40°C ÷ +45°C
		191W	Ta = -40°C ÷ +45°C
		230W	Ta = -40°C ÷ +45°C
80%	80.000h (L80B10) (art. 2895 HT)	100W	Ta = -40°C ÷ +60°C
		139W	Ta = -40°C ÷ +55°C
90%	40.000h (L90B10)	Ta = -20°C ÷ +35°C	

The table below shows the values for standard versions. For further information (expected life, temperatures) and/or for special versions, please contact our customer service.

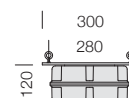
ACCESSORIES

acc. 1175 Box

997651-00

997654-00

To be used when purchasing Saturno EM version, with sub-code -07.

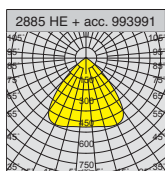
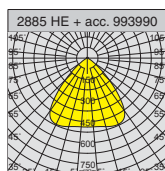




Saturno is the perfect alternative to get the best performance levels without wasting energy in environments where high power outputs are not needed. The reflector is built with carefully selected materials to last in time and designed to allow improved light control. In particular, the version with the opal or clear **Skirt** accessory (cod. 993978 - 993979) is ideal to reduce direct glare and ensure a rating of **UGR<22**.

The **coloured** versions of the **Skirt** accessory are particularly suited to be combined with Saturno in the elegant white colour for interiors; ideal to be used as an aesthetic and decorating finishing element for the lighting systems of shopping centres or showrooms.

SKIRT FOR SATURNO Ø320

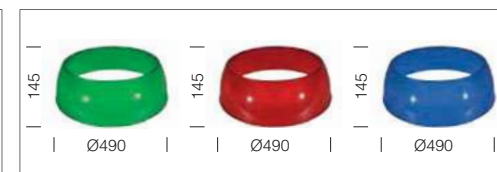
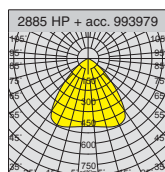
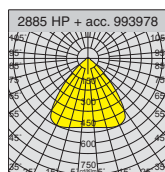


acc. 539 Skirt for Saturno Ø320	
opal	993990-00
In polycarbonate, internally grooved and anti-UV.	

acc. 539 Skirt for Saturno Ø320	
transparent	993991-00
In polycarbonate, internally grooved and anti-UV.	

acc. 539 Skirt for Saturno Ø320	
green	993992-00
red	993993-00
blue	993994-00
In polycarbonate, internally grooved and anti-UV.	

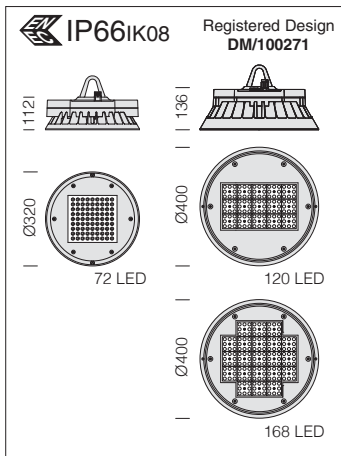
SKIRT FOR SATURNO Ø400



acc. 540 Skirt for Saturno Ø400	
opal	993978-00
In polycarbonate, internally grooved and anti-UV.	

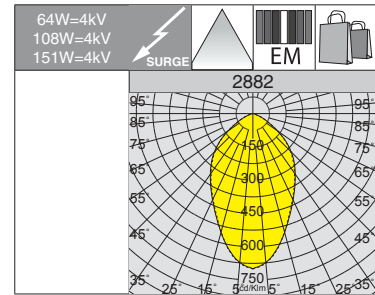
acc. 540 Skirt for Saturno Ø400	
transparent	993979-00
In polycarbonate, internally grooved and anti-UV.	

acc. 540 Skirt for Saturno Ø400	
green	993985-00
red	993986-00
blue	993987-00
In polycarbonate, internally grooved and anti-UV.	



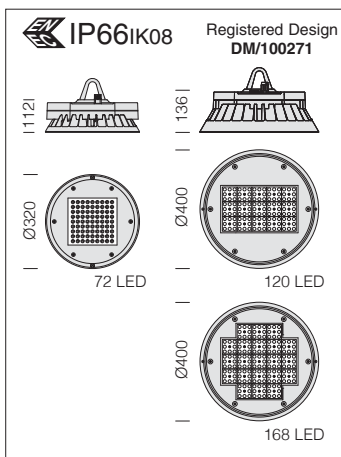
LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

Upon request: Ø320 version with
built-in **RADAR SENSOR** (sub-co-
de **-19** at an extra price).



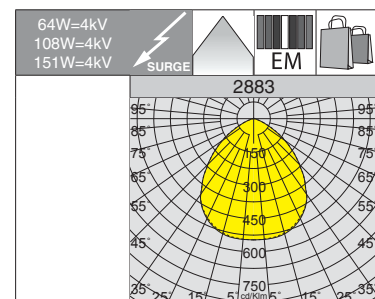
2882 Saturno - narrow beam						
			CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED	graphite	6.80	320	330730-00	330730-07	64
				330731-00	330731-07	108
LED	graphite	7.80	400	330732-00	330732-07	151

Emergency version: acc.1175 (997651-00) to be purchased separately. For code 330732-07, acc.1175 (997654-00) is to be purchased separately.



LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

Upon request: Ø320 version with
built-in **RADAR SENSOR** (sub-co-
de **-19** at an extra price).



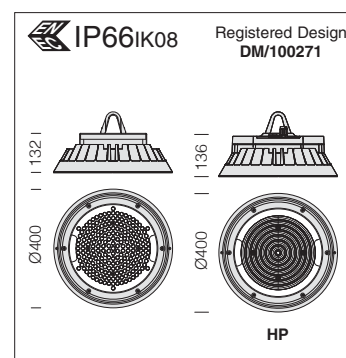
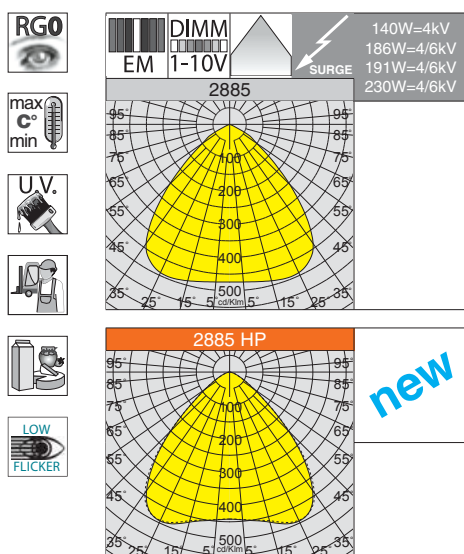
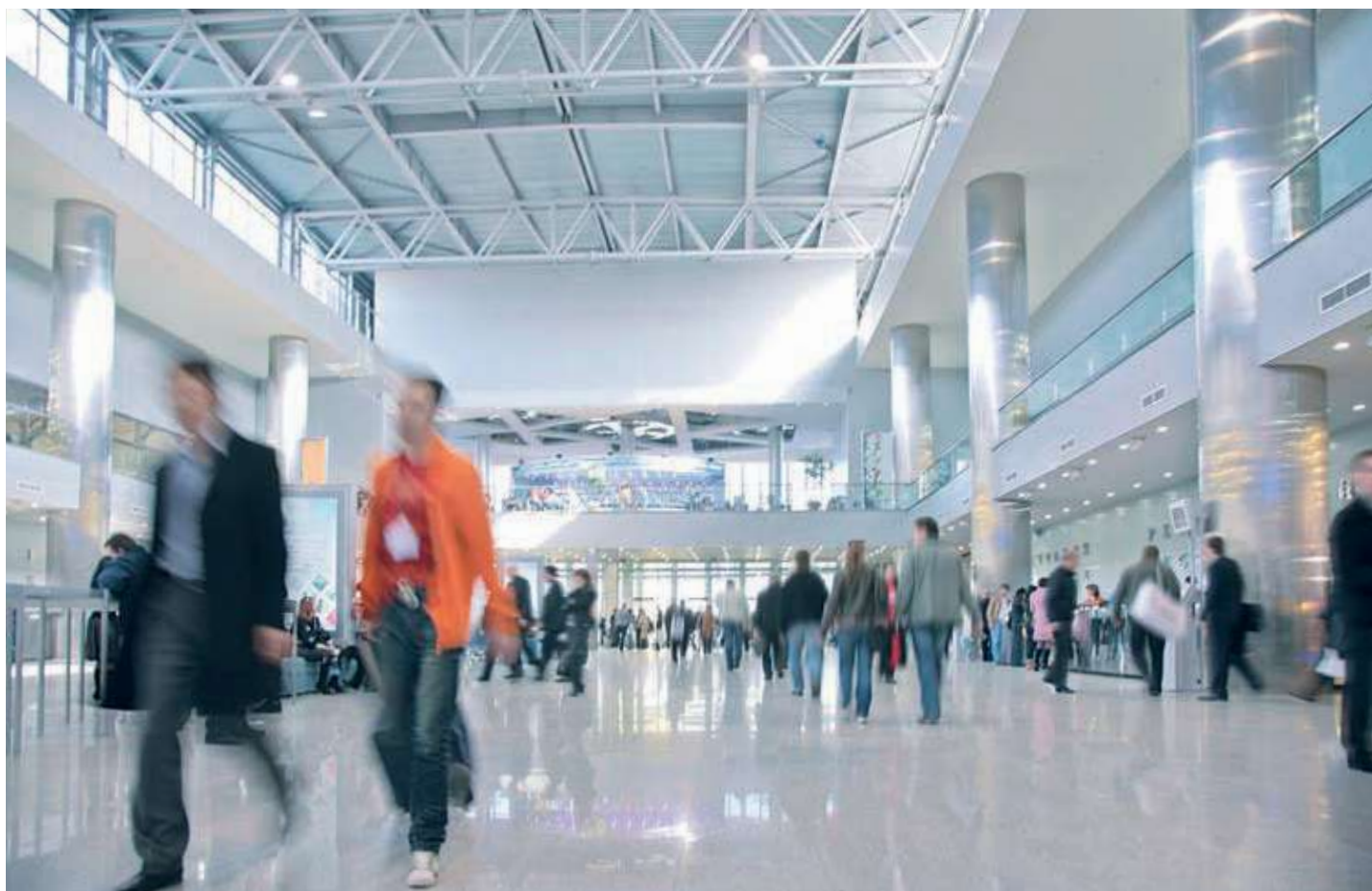
Upon request: in olive green colour.

2883 Saturno - wide beam						
			CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED	graphite	6.80	320	330740-00	330740-07	64
				330741-00	330741-07	108
LED	graphite	7.80	400	330742-00	330742-07	151

Emergency version: acc.1175 (997651-00) to be purchased separately. For code 330742-07, acc.1175 (997654-00) is to be purchased separately.

2888 Saturno white - wide beam						
			CLD		CLD E	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED	white	6.80	320	330743-00	330743-07	64
				330744-00	330744-07	108
LED	white	7.80	400	330745-00	330745-07	151

Emergency version: acc.1175 (997651-00) to be purchased separately. For code 330745-07, acc.1175 (997654-00) is to be purchased separately.



Diffuser: in clear polycarbonate, LEDs with protective lenses.

LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
60.000h (L80B20).

Upon request: version with **CLD D-D (DALI)** wiring with **sub-code -0041**.

* art. with ENEC.

2885 Saturno - wide beam

		CLD D (1-10V)		CLD D-E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED *	graphite	7.10	400	330751-00	330751-07	191 4000K - 24752lm - CRI 80
				330752-00	330752-07	230 4000K - 28605lm - CRI 80

Emergency version: acc.1175 (997654-00) to be purchased separately; for 330751-07 acc.1175 (997651-00)
Standard: Saturno with emergency wiring with centralized power supply (**sub-code -0050**).

2885 Saturno HP - high efficiency

		CLD		CLD D-E		LUMEN USCENTI (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED	graphite	7.10	400	330756-00	330756-07	140 4000K - 24480lm - CRI 80

		CLD D (1-10V)		CLD D-E		LUMEN USCENTI (tq= 25 °C)
wattage	colour	weight	Ø	code	code	K - ølm - CRI
LED	graphite	7.10	400	330757-00	330757-07	186 4000K - 29500lm - CRI 80

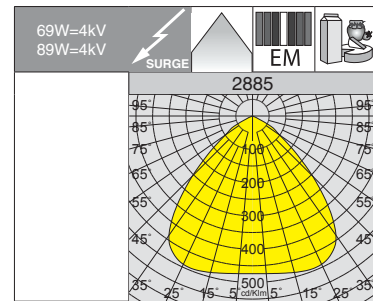
Emergency version: acc.1175 (997651-00) to be purchased separately.
Standard: Saturno with emergency wiring with centralized power supply (**sub-code -0050**).



Diffuser: in clear polycarbonate, LEDs with protective lenses.

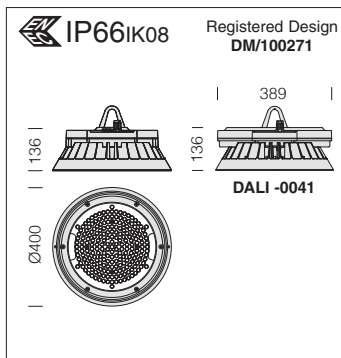
LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

Upon request: Ø320 version with built-in **RADAR SENSOR** (sub-code -19 at an extra price).



2885 Saturno Ø320 HE - wide beam						
		CLD		CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	W tot	K - ølm - CRI
LED	graphite	5.10	320	330755-00	330755-07	69 4000K - 10263lm - CRI 80
				330754-00	330754-07	89 4000K - 12670lm - CRI 80

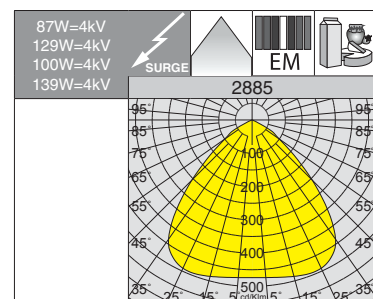
Emergency version: acc.1175 (997651-00) to be purchased separately.



Diffuser: in clear polycarbonate, LEDs with protective lenses.

LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

Upon request: version with **CLD D-D (DALI)** wiring with **sub-code -0041**.



2885 Saturno Ø400 HE - wide beam						
		CLD		CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	W tot	K - ølm - CRI
LED *	graphite	7.10	400	330753-00	330753-07	100 4000K - 16317lm - CRI 80
				330750-00	330750-07	139 4000K - 20765lm - CRI 80

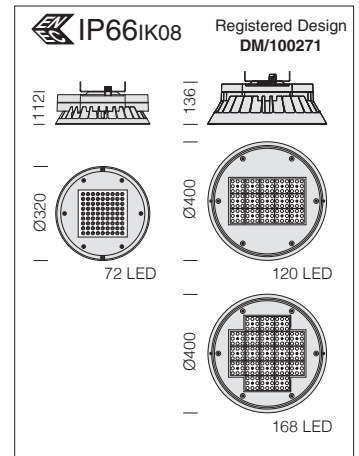
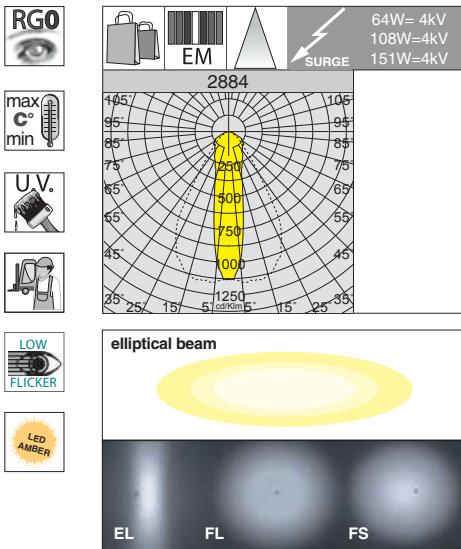
Emergency version: acc.1175 (997651-00) to be purchased separately.

* art. with ENEC.

2885 Saturno Ø400 HE - high efficiency						
		CLD		CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	W tot	K - ølm - CRI
LED	graphite	7.10	400	330758-00	330758-07	87 4000K - 16340lm - CRI 80
				330759-00	330759-07	129 4000K - 22024lm - CRI 80

Emergency version: acc.1175 (997651-00) to be purchased separately.

Standard: Saturno with emergency wiring with centralized power supply (**sub-code -0050**).

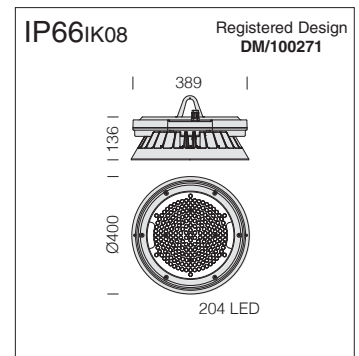
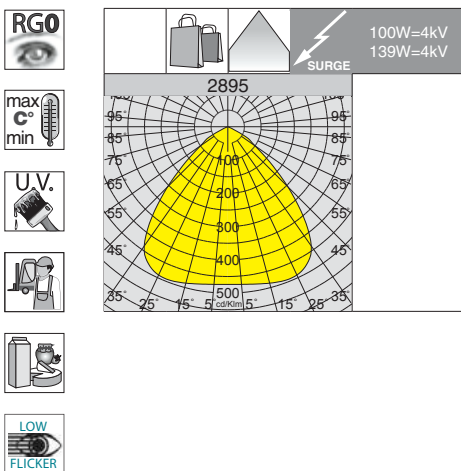


LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

Upon request: Ø320 version with
built-in **RADAR SENSOR** (sub-co-
de **-19** at an extra price).

2884 Saturno - elliptical beam						
wattage	colour	weight	Ø	CLD	CLD E	LUMEN OUTPUT (tq= 25 °C)
				code	code	K - ølm - CRI
LED	graphite	5.60	320	330760-00	330760-07	64 4000K - 7846lm - CRI 80
				330761-00	330761-07	108 4000K - 13078lm - CRI 80
				330762-00	330762-07	151 4000K - 18311lm - CRI 80

Emergency version: acc.1175 (997651-00) to be purchased separately. For code 330762-07, acc.1175 (997654-00) is to be purchased separately.



Diffuser: in clear polycarbonate,
LEDs with protective lenses.

LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
80.000h (L80B10).

HT version ideal for environments
where temperatures reach max **+60**
°C.

2895 Saturno HT - high temperature						
wattage	colour	weight	Ø	CLD	CLD E	LUMEN OUTPUT (tq= 25 °C)
				code	code	K - ølm - CRI
LED	graphite	6.00	400	330791-00	330791-07	100 4000K - 16137lm - CRI 80
				330790-00	330790-07	139 4000K - 20765lm - CRI 80

Presence sensors - ON/OFF

Upon request with sub-code -19: Saturno with easy-to-use, safe and convenient stand-alone presence sensor; available in the 1/10V version (with sub-code -1219).

TECHNICAL SPECIFICATIONS

Power source	220-240 Vac - 50/60Hz
High frequency	5.8GHz±75MHz, ISM wave band, <0.5mW
Detection angle	ceiling: 360° - wall: 150°
Detection area	8 max (choice)
Detection motion speed	0.5~3m/s
Installing height	ceiling: 3-15 m max.
Power consumption	≤0.5W (standby), <1W (operation)
IP degree	IP65
Technology	PIR
Operating temperature (sensor)	-35 ... +70 °C
Hold time (choice)	5s / 30s / 90s / 3min / 20min / 30min
Ambient light (choice)	5lux / 15lux / 30lux / 50lux / 100lux / 150lux / Disable

(Optional cod. **81420019**) remote control to change parameters after installation, without opening the fixture

**SENSOR
STAND-ALONE**

SUSPENSION



ON		1	
I	ON	100%	
II	-	50%	

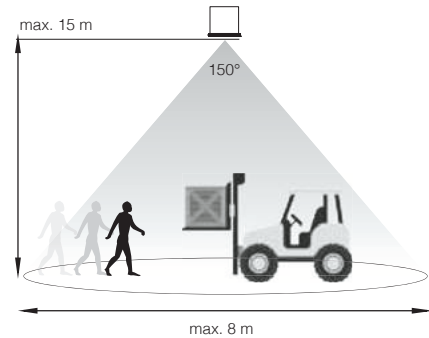
SCAN AREA:

can be reduced by selecting the relevant combination on the DIP switches to set sensor data for each application.

ON		2	3	4	
I	ON	ON	ON	5s	
II	-	ON	ON	30s	
III	ON	-	ON	90s	
IV	-	-	ON	3min	
V	ON	ON	-	20min	
VI	-	-	-	30min	

HOLD TIME:

refers to the amount of time the lamp stays on at 100% of the light level after no motion is detected.

**Presence and light sensors - DIMM DALI**

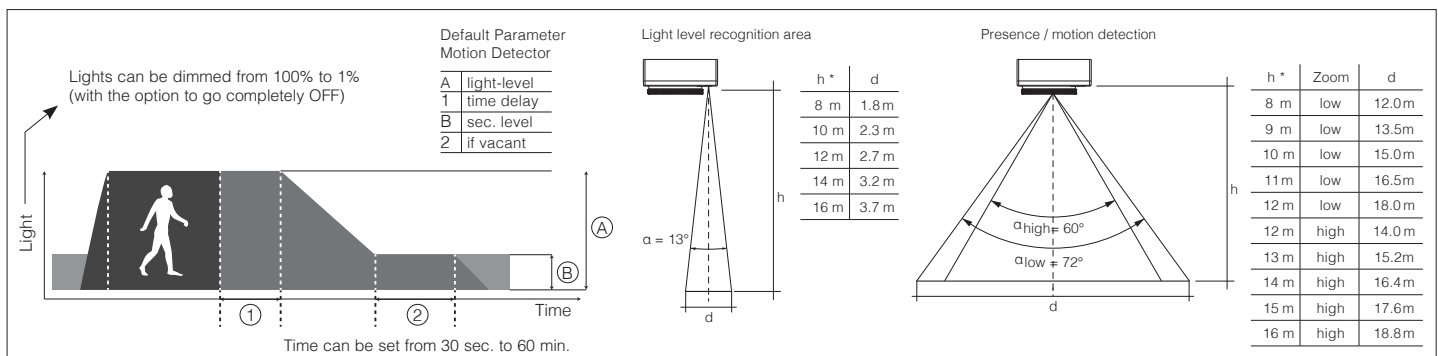
Upon request with sub-code -0061: Saturno DALI version with easy-to-use, safe and convenient automatic presence and light sensor.

TECHNICAL SPECIFICATIONS

Rated supply voltage	220-240 Vac - 50/60Hz	
Power consumption	2 W	
Output, stand-by	0,5 W	
Operating temperature (sensor)	0 ... +60 °C	
IP degree	IP65	
Time delay (regolabile)	min: 30sec - max: 60min	
Technology	PIR	
Max. installation height	16m	
Light detection angle	13 °	
Motion detection angle	high	low
	72°	60°

Momentary-action switch input for on/off switching and dimming

All functions can be set by request or with the (optional cod. **81420022**) remote control

**SENSOR
DIMM DALI**



GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins integrated into the cover and designed with a very small surface exposed to wind.

Diffuser: tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard supply: temperature control inside the device with automatic resetting. Complete with quick watertight connector for line connection.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

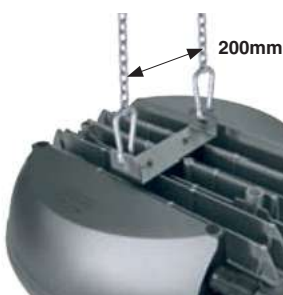
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Upon request: for **Class II** fixtures, protection up to 10KV.

OTHER CHARACTERISTICS



Astro has all the qualities of the new LED technology. With a functional and highly recognisable design, it is also very versatile thanks to multiple versions with different optics featuring narrow-beam, wide-beam or elliptical lenses for great design flexibility.



The versions with **UGR<22**, **UGR<25** and **elliptical lenses** come with the fixing bracket to allow a perfect mounting as a suspended fixture. Chains and/or supporting rods are to be ordered separately.

OTHER INFORMATION



The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.



Standard version **CLD D-D (DALI)** wiring with **subcode -0041**: thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



EM:
subcode -07

UPON REQUEST



Possibility of centralized lighting control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Version **CLD EC** wiring with **subcode -0050**: permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.



Ideal version for spaces with a high concentration of particular volatile chemicals around the luminaires (see chemical compatibility table in chapter *Legend and Info*).



Astro HP: 30° version (sub-code **-22**).



Version with **LED 6500K** with subcode **-0083**.

Luminous flux maintenance Power factor ≥0.95		Wattage (tot.)	Allowed ambient temperature (min.°C ÷ max.°C)
90%	100.000h (L90B10) (art. 1788-1789-2785-2786-2787-2789)	101W	Ta = -40°C ÷ +45°C
		135W	Ta = -40°C ÷ +45°C
		203W	Ta = -40°C ÷ +40°C
		235W	Ta = -40°C ÷ +40°C
		251W	Ta = -40°C ÷ +40°C
90%	50.000h (L90B10) (art. 2783-2784 HP)	109W	Ta = -25°C ÷ +45°C
		139W	Ta = -25°C ÷ +40°C
		177W	Ta = -25°C ÷ +45°C
		189W	Ta = -25°C ÷ +40°C
		258W	Ta = -25°C ÷ +40°C
90%	50.000h (L90B10) (art. 2790-2792 HE)	124W	Ta = -25°C ÷ +50°C
		132W	Ta = -25°C ÷ +45°C
		151W	Ta = -25°C ÷ +45°C
		167W	Ta = -25°C ÷ +45°C
		195W	Ta = -25°C ÷ +45°C
80%	100.000h (L80B10) (art. 2791 HT - 2793 HT)	111W	Ta = -40°C ÷ +70°C
		128W	Ta = -40°C ÷ +65°C
		168W	Ta = -40°C ÷ +65°C

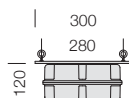
The table below shows the values for standard versions. For further information (expected life, temperatures) and/or for special versions, please contact our customer service.

ACCESSORIES

acc. 1175 EM box

997651-00

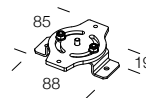
To be used when purchasing Astro EM version, with sub-code -07.



acc. 533 adjustable connector

993975-00

Adjustable connector - 120°





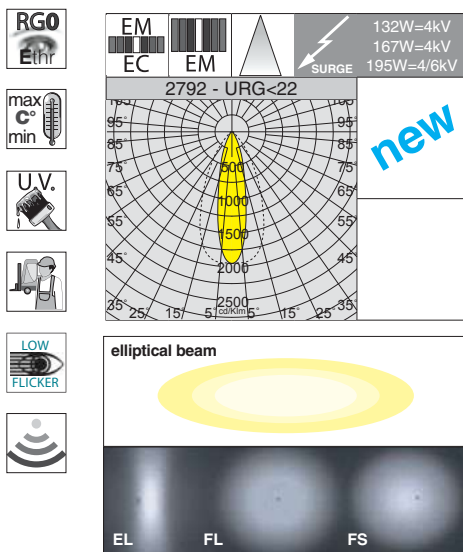
The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30**; **the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

Classification of UGR values by applications

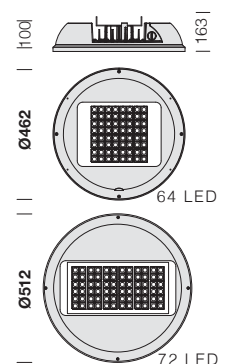
UGR	≤ 16	Very demanding applications (technical drawings)
	≤ 19	Offices and schools (reading, business meetings, computer work)
	≤ 22	Industrial applications, craftsmen
	≤ 25	Transit areas
	> 28	High glare

Below are some examples of industrial environments requiring the installation of fixtures with UGR<22 in compliance with standard **UNI-EN 12464-1**:

- General areas inside buildings – storage areas
- Industrial and manufacturing activities
- Chemical and pharmaceutical industry
- Mechanical, electronic and electro-technical industry
- Paper mills



IP66IK08



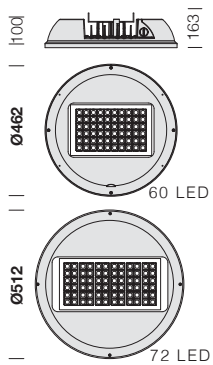
2792 Astro HE - elliptical beam - UGR<22 - high efficiency

wattage	colour	weight	Ø	CLD	CLD E	W tot	LUMEN OUTPUT (tq= 25 °C)
				code	code		K - ølm - CRI
LED	graphite	8.30	462	330266-00	330266-07	132	4000K - 19202lm - CRI 80
				330267-00	330267-07	167	4000K - 22618lm - CRI 80
LED	graphite	9.80	512	330268-00	330268-07	195	4000K - 26524lm - CRI 80

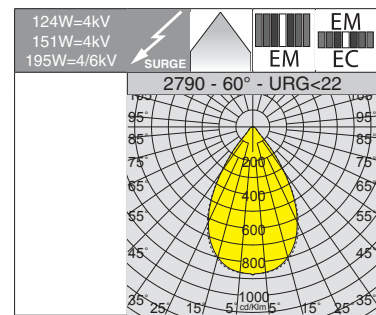
Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

Optics: in PMMA, highly resistant to temperature and UV radiation.



Optics: in PMMA, highly resistant to temperature and UV radiation.



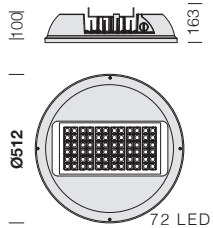
2790 Astro HE - 60° - UGR<22 - high efficiency							
		CLD			CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	W tot	K - ølm - CRI - degrees
LED	graphite	8.30	462	330137-00	330137-07	124	4000K - 18135lm - CRI 80 - 60°
				330138-00	330138-07	151	4000K - 22236lm - CRI 80 - 60°
LED	graphite	9.80	512	330139-00	330139-07	195	4000K - 27488lm - CRI 80 - 60°

Emergency version: acc. 1175 (997651-00) to be purchased separately.

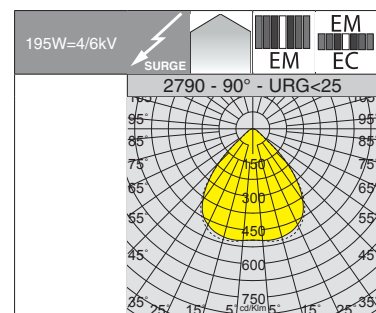
Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (**sub-code -0050**).



Optics: in PMMA, highly resistant to temperature and UV radiation.



2790 Astro HE - 90° - UGR<25 - high efficiency							
		CLD			CLD E		LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	Ø	code	code	W tot	K - ølm - CRI - degrees
LED	graphite	9.80	512	330149-00	330149-07	195	4000K - 27185lm - CRI 80 - 90°
Emergency version: acc. 1175 (997651-00) to be purchased separately. Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).							

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (**sub-code -0050**).



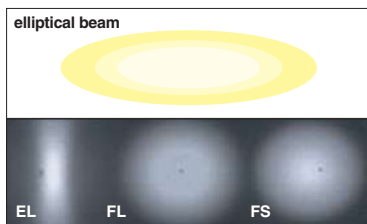
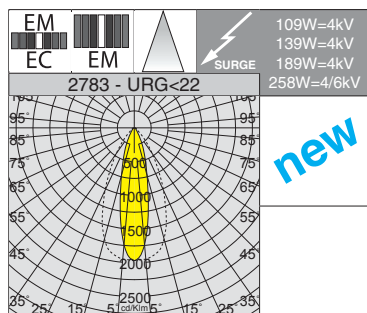
The **UGR** (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30**; **the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

Classification of UGR values by applications

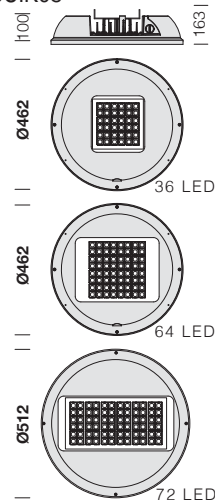
UGR	≤ 16	Very demanding applications (technical drawings)
	≤ 19	Offices and schools (reading, business meetings, computer work)
	≤ 22	Industrial applications, craftsmen
	≤ 25	Transit areas
	> 28	High glare

Below are some examples of industrial environments requiring the installation of fixtures with UGR<22 in compliance with standard **UNI-EN 12464-1**:

- General areas inside buildings – storage areas
- Industrial and manufacturing activities
- Chemical and pharmaceutical industry
- Mechanical, electronic and electro-technical industry
- Paper mills



IP66IK08



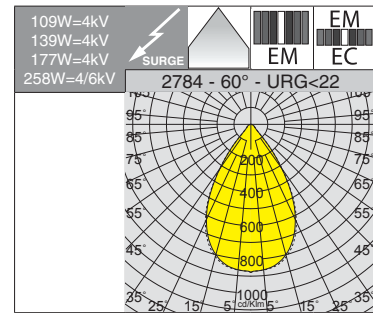
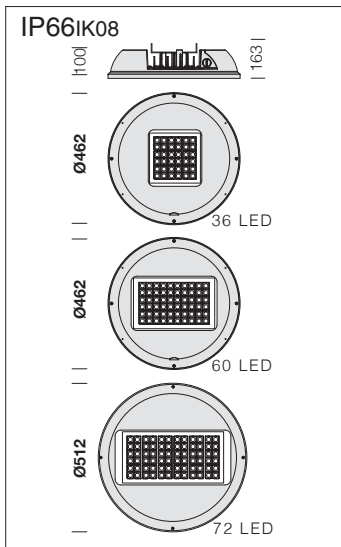
2783 Astro HP - elliptical beam - UGR<22 - high performance

wattage	colour	weight	Ø	CLD	CLD E	LUMEN OUTPUT (tq= 25 °C)
				code	code	K - ølm - CRI
LED	graphite	8.30	462	330270-00	330270-07	109 4000K - 14844lm - CRI 80
				330271-00	330271-07	139 4000K - 18083lm - CRI 80
				330272-00	330272-07	189 4000K - 25580lm - CRI 80
LED	graphite	9.80	512	330273-00	330273-07	258 4000K - 33764lm - CRI 80

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

Optics: in PMMA, highly resistant to temperature and UV radiation.

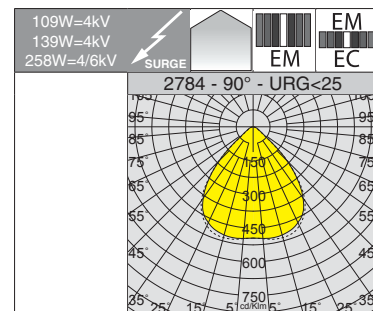
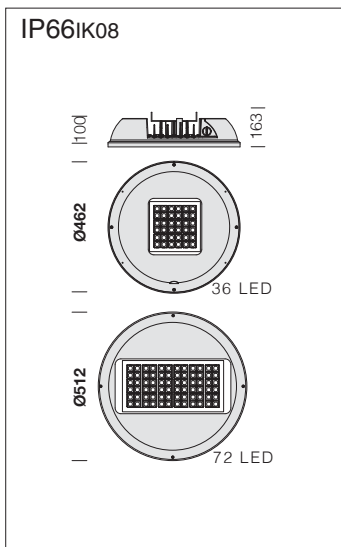


Optics: in PMMA, highly resistant to temperature and UV radiation.

Upon request: 30° version (sub-code -22).

2784 Astro HP - 60° - UGR<22 - high performance							
wattage	colour	weight	Ø	CLD	CLD E	LUMEN OUTPUT (tq= 25 °C)	
				code	code	W tot	K - ølm - CRI - degrees
LED	graphite	8.30	462	330131-00	330131-07	109	4000K - 15131lm - CRI 80 - 60°
				330136-00	330136-07	139	4000K - 17816lm - CRI 80 - 60°
				330133-00	330133-07	177	4000K - 23236lm - CRI 80 - 60°
LED	graphite	9.80	512	330135-00	330135-07	258	4000K - 34987lm - CRI 80 - 60°

Emergency version: acc. 1175 (997651-00) to be purchased separately.
Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

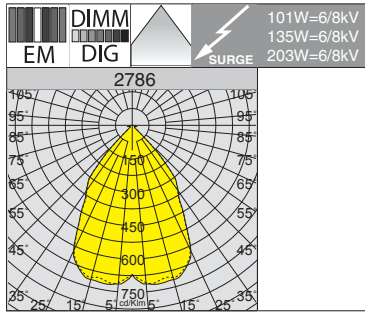


Optics: in PMMA, highly resistant to temperature and UV radiation.

Upon request: 30° version (sub-code -22).

2784 Astro HP - 90° - UGR<25 - high performance							
wattage	colour	weight	Ø	CLD	CLD E	LUMEN OUTPUT (tq= 25 °C)	
				code	code	W tot	K - ølm - CRI - degrees
LED	graphite	8.30	462	330178-00	330178-07	109	4000K - 14949lm - CRI 80 - 90°
				330179-00	330179-07	139	4000K - 17602lm - CRI 80 - 90°
				330148-00	330148-07	258	4000K - 34601lm - CRI 80 - 90°

Emergency version: acc. 1175 (997651-00) to be purchased separately.
Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

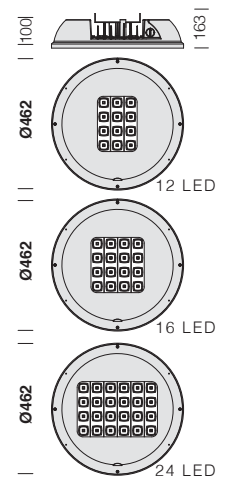


Optics : in high-performance metallic V0 polycarbonate with micro-faceted finish.

UGR<22
100.000h
L90B10



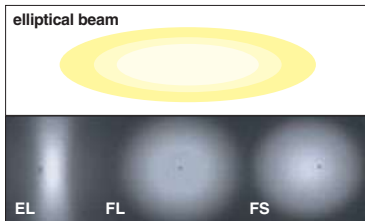
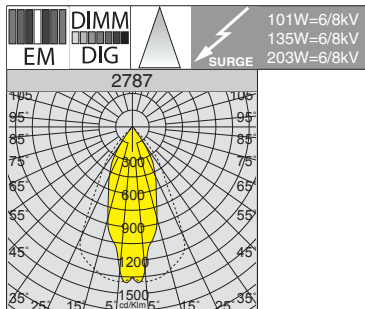
IP66IK08



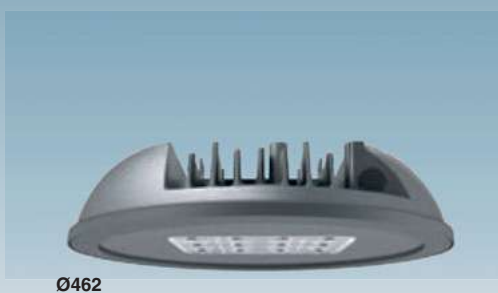
2786 Astro - UGR<22 - wide beam							
wattage	colour	weight	Ø	CLD code	CLD E code	CLD D-D (DALI) code	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	9.20	462	330160-00	330160-07	330160-0041	101 4000K - 10919lm - CRI 80
	graphite			330164-00	330164-07	330164-0041	
LED	grey	9.20	462	330161-00	330161-07	330161-0041	135 4000K - 14559lm - CRI 80
	graphite			330165-00	330165-07	330165-0041	
LED	grey	10.20	462	330162-00	330162-07	330162-0041	203 4000K - 21839lm - CRI 80
	graphite			330166-00	330166-07	330166-0041	

Emergency version: acc. 1175 (997651-00) to be purchased separately.

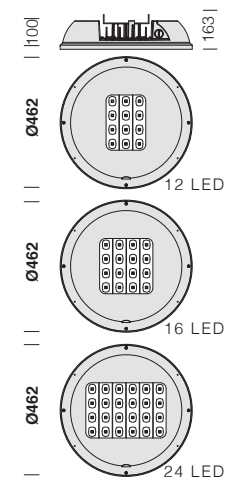
Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).



UGR<22
100.000h
L90B10



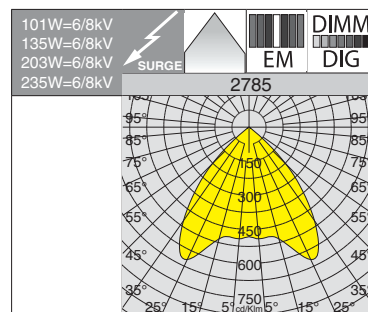
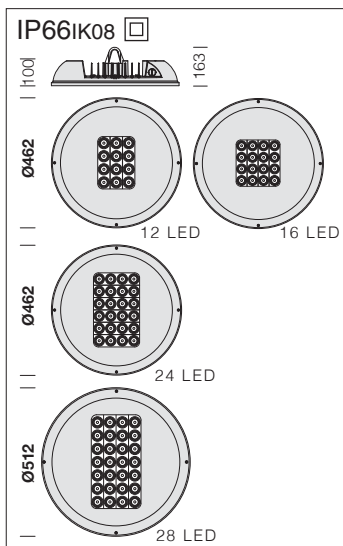
IP66IK08



2787 Astro - UGR<22 - elliptical beam							
wattage	colour	weight	Ø	CLD code	CLD E code	CLD D-D (DALI) code	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	8.80	462	330170-00	330170-07	330170-0041	101 4000K - 11237lm - CRI 80
	graphite			330174-00	330174-07	330174-0041	
LED	grey	8.80	462	330171-00	330171-07	330171-0041	135 4000K - 14982lm - CRI 80
	graphite			330175-00	330175-07	330175-0041	
LED	grey	9.80	462	330172-00	330172-07	330172-0041	203 4000K - 22474lm - CRI 80
	graphite			330176-00	330176-07	330176-0041	

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).



Diffuser: Injection moulded, in V2 self-extinguishing, UV stabilized, **vandal-resistant** clear polycarbonate, **ideal for the food industry**.

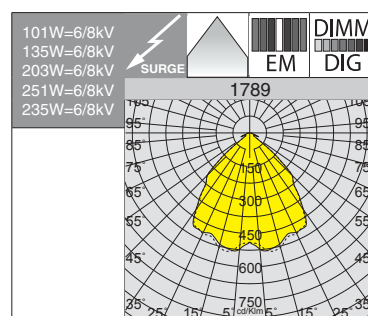
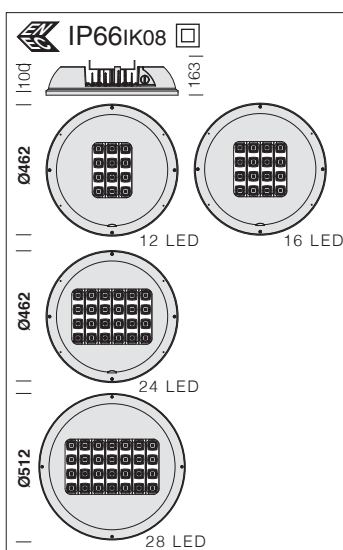
Upon request: version with diffuser in special polycarbonate material, ideal for the food industry with special processing methods (contact the customer service to check compatibility between materials and food products).



2785 Astro - wide beam - with polycarbonate diffuser							
wattage	colour	weight	Ø	CLD	CLD E	CLD D-D (DALI)	LUMEN OUTPUT (tq= 25 °C)
LED	grey	9.20	462	330156-00	330156-07	330156-0041	101
	graphite			330157-00	330157-07	330157-0041	
LED	grey	9.20	462	330150-00	330150-07	330150-0041	135
	graphite			330153-00	330153-07	330153-0041	
LED	grey	10.20	462	330151-00	330151-07	330151-0041	203
	graphite			330154-00	330154-07	330154-0041	
LED	grey	10.50	512	330152-00	330152-07	330152-0041	235
	graphite			330155-00	330155-07	330155-0041	

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).



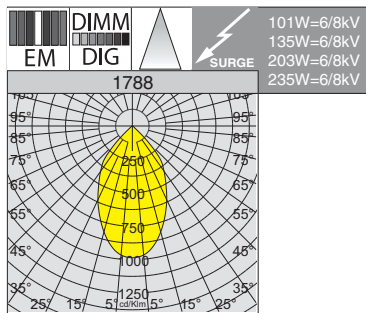
Optics : in high-performance metallic V0 polycarbonate with micro-faceted finish.

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).



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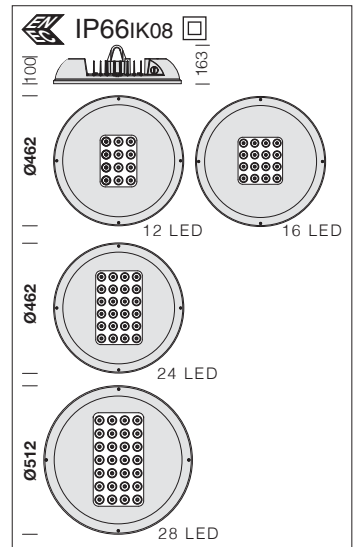


Optics : made of PMMA with high temperature resistance and UV rays.

100.000h
L90B10



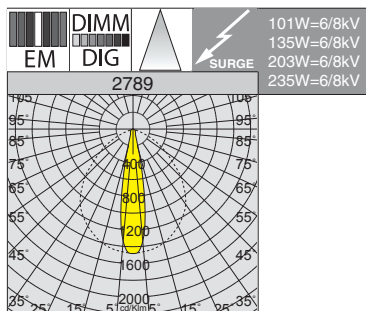
Ø512



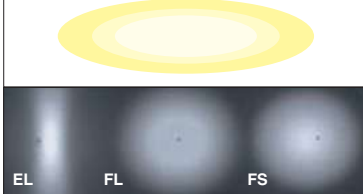
1788 Astro - narrow beam								
wattage	colour	weight	Ø	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	9.50	462	330086-00	330086-07	330086-0041	101	4000K - 10534lm - CRI 80
	graphite			330087-00	330087-07	330087-0041		
LED	grey	9.50	462	330080-00	330080-07	330080-0041	135	4000K - 14046lm - CRI 80
	graphite			330083-00	330083-07	330083-0041		
LED	grey	10.00	462	330081-00	330081-07	330081-0041	203	4000K - 21069lm - CRI 80
	graphite			330084-00	330084-07	330084-0041		
LED	grey	10.50	512	330082-00	330082-07	330082-0041	235	4000K - 26424lm - CRI 80
	graphite			330085-00	330085-07	330085-0041		

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).



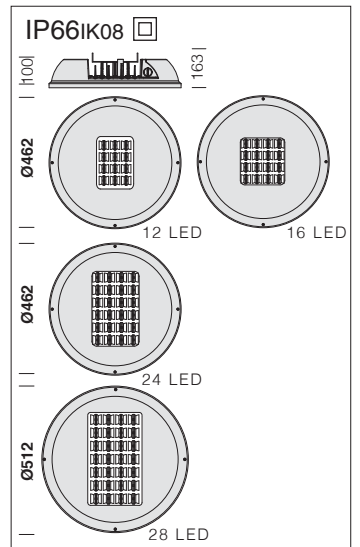
elliptical beam



EL FL FS

100.000h
L90B10

Ø512



2789 Astro - elliptical beam								
wattage	colour	weight	Ø	CLD code	CLD E code	CLD D-D (DALI) code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	grey	9.20	462	330143-00	330143-07	330143-0041	101	4000K - 10558lm - CRI 80
	graphite			330147-00	330147-07	330147-0041		
LED	grey	9.20	462	330140-00	330140-07	330140-0041	135	4000K - 14078lm - CRI 80
	graphite			330144-00	330144-07	330144-0041		
LED	grey	9.40	462	330141-00	330141-07	330141-0041	203	4000K - 21117lm - CRI 80
	graphite			330145-00	330145-07	330145-0041		
LED	grey	10.90	512	330142-00	330142-07	330142-0041	235	4000K - 26477lm - CRI 80
	graphite			330146-00	330146-07	330146-0041		

Emergency version: acc. 1175 (997651-00) to be purchased separately.

Upon request: Astro with emergency wiring with centralized power supply (sub-code -0050).

Presence sensors - ON/OFF

Upon request with sub-code -19: Astro with easy-to-use, safe and convenient stand-alone presence sensor; available in the 1/10V version (with sub-code -1219).

TECHNICAL SPECIFICATIONS

Power source	220-240 Vac - 50/60Hz
High frequency	5.8GHz±75MHz, ISM wave band, <0.5mW
Detection angle	ceiling: 360° - wall: 150°
Detection area	8 max (choice)
Detection motion speed	0.5~3m/s PIR
Installing height	ceiling: 3-15 m max.
Power consumption	≤0.5W (standby), <1W (operation)
IP degree	IP65
Technology	Microwave
Operating temperature (sensor)	-35 ... +70 °C
Hold time (choice)	5s / 30s / 90s / 3min / 20min / 30min
Ambient light (choice)	5lux / 15lux / 30lux / 50lux / 100lux / 150lux / Disable

(Optional cod. **81420019**) remote control to change parameters after installation, without opening the fixture

SENSOR
DIMM 1/10V



SUSPENSION



ON	I	ON	100%
II	-	-	50%

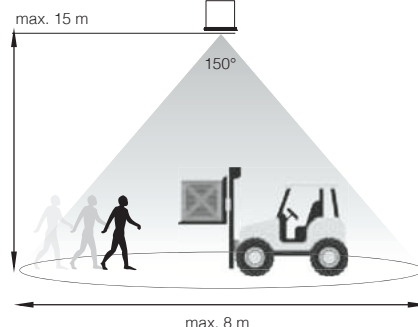
SCAN AREA:

can be reduced by selecting the relevant combination on the DIP switches to set sensor data for each application.

ON	I	ON	ON	ON	5s
II	-	ON	ON	ON	30s
III	ON	-	ON	ON	90s
IV	-	-	ON	ON	3min
V	ON	ON	-	-	20min
VI	-	-	-	-	30min

HOLD TIME:

refers to the amount of time the lamp stays on at 100% of the light level after no motion is detected.



Presence and light sensors - DIMM DALI

Upon request with sub-code -0061: Astro DALI version with easy-to-use, safe and convenient automatic presence and light sensor.

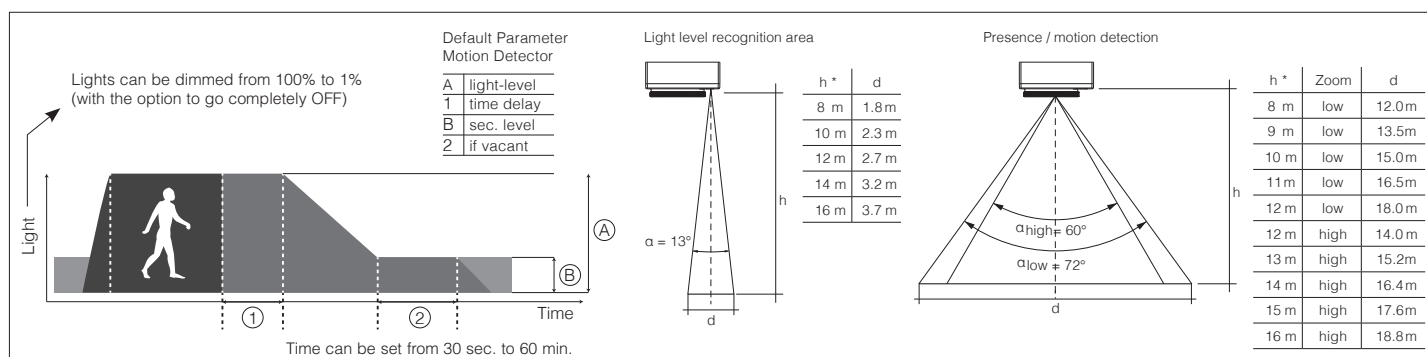
TECHNICAL SPECIFICATIONS

Rated supply voltage	220-240 Vac - 50/60Hz
Power consumption	2 W
Output, stand-by	0,5 W
Operating temperature (sensor)	0 ... +60 °C
IP degree	IP65
Time delay (regolabile)	min: 30sec - max: 60min
Technology	PIR
Max. installation height	16m
Light detection angle	13 °
Motion detection angle	high 72° low 60°

Momentary-action switch input for on/off switching and dimming

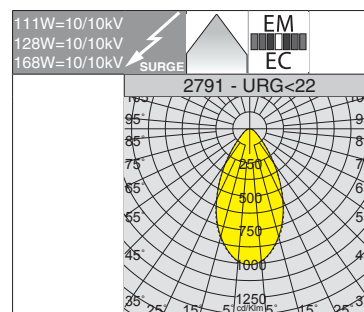
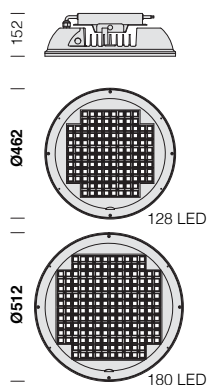
All functions can be set by request or with the (optional cod. **81420022**) remote control

SENSOR
DIMM DALI





IP66IK08



Optics: in PMMA, highly resistant to temperature and UV radiation.

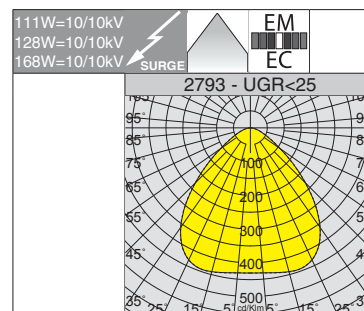
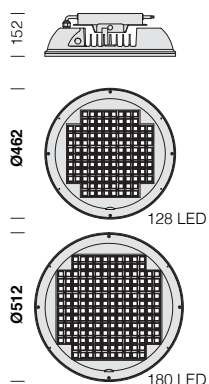
HT version ideal for environments where temperatures reach max **+70 °C**.

2791 Astro HT - UGR<22 - high temperature

wattage	colour	weight	Ø	codice	W tot	LUMEN OUTPUT (tq= 25 °C)
						K - olm - CRI
LED	graphite	9.80	462	330280-00	111	4000K - 17517lm - CRI 80
				330281-00	128	4000K - 19661lm - CRI 80
LED	graphite	12.20	512	330282-00	168	4000K - 26203lm - CRI 80

Upon request: Astro with emergency wiring with centralized power supply (**sub-code -0050**).

IP66IK08



Optics: in PMMA, highly resistant to temperature and UV radiation.

HT version ideal for environments where temperatures reach max **+70 °C**.

2793 Astro HT - UGR<25 - high temperature

wattage	colour	weight	Ø	codice	W tot	LUMEN OUTPUT (tq= 25 °C)
						K - olm - CRI
LED	graphite	9.90	462	330190-00	111	4000K - 17037lm - CRI 80
				330191-00	128	4000K - 19108lm - CRI 80
LED	graphite	12.30	512	330192-00	168	4000K - 25551lm - CRI 80

Upon request: Astro with emergency wiring with centralized power supply (**sub-code -0050**).

Equipment level protection (EPL)

ZONE	EPL
0	"Ga"
1	"Ga" o "Gb"
2	"Ga", "Gb" o "Gc"
20	"Da"
21	"Da" o "Db"
22	"Da", "Db" o "Dc"

Hazardous places according to Legislative Decree 233/03

Business	Places
chemical and petrochemical industry	gas-fuelled heating plants with P>35Kw
pharmaceutics industry	garages, repair shops, body shops
metal processing	fuel distribution
food industry (storage and processing of cereals, flour and sugar)	bread baking ovens
processing of wood	places where painting processes occur
fabric and spinning industry	distilleries, production of alcoholic beverages

ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE GAS:

Ex =	Electrical system built and tested for utilization in an atmosphere filled with explosive gasses.
nA =	The electrical system does not produce sparks when operating normally.
II =	Electrical system suitable for areas with a potentially explosive atmosphere, different from mines, with firedamp.
Gc =	Enhanced protection level
T4 =	Maximum internal or external surface temperature; classification according to regulation cei en 60079-0 table 2
IP66 =	Housing entirely protected against dust and the water jets

ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE POWDERS:

Ex =	Electrical system built and tested for utilization in an atmosphere containing powders.
IIIC	Electrical equipment for premises with potentially explosive atmospheres due to the presence of combustible dust, other than mines with the presence of firedamp
Dc	Enhanced protection level
tc	Protection against explosive atmospheres due to the presence of dust where the electrical equipment is equipped with an enclosure
22 =	Permitted hazardous area.
IP6X =	Housing entirely protected against dust
T 135°C =	Maximum temperature in a dust-free environment

SELECTION OF ELECTRICAL SYSTEMS
IN RELATION TO HAZARDOUS AREAS

HAZARDOUS AREA	CLASSIFICATION	EPL	PROTECTIONS PERMITTED
	0	Ga	"ia" Intrinsic safety "ma" Encapsulation Two independent EPLs "Gb"
ATMOSPHERE CONTAINING GAS	1	Gb	"d" Explosion proof "e" Increased safety "ib" Intrinsic safety "m" "mb" Encapsulation "o" Oil immersion "p, px, py" Pressurisation "q" Powder filling Field bus intrinsically safe concept (FISCO) Optical radiation safety
	2	Gc	"ic" Intrinsic safety "mc" Encapsulation "n, nA" Non sparking "nR" Restricted breathing "nL" Energy limitation "nC" Sparking device and components "pz" Pressurisation Field bus non-incendive concept Optical radiation safety
ATMOSPHERE CONTAINING GAS	20	Da	"Da" "Id" Intrinsic safety "md" Encapsulation "tD" Protection by enclosure
	21	Db	"iD" Intrinsic safety "mD" Encapsulation "tD" Protection by enclosure "pD" Pressurisation
	22	Dc	"iD" Intrinsic safety "mD" Encapsulation "tD" Protection by enclosure "pD" Pressurisation

RELEVANT REGULATIONS

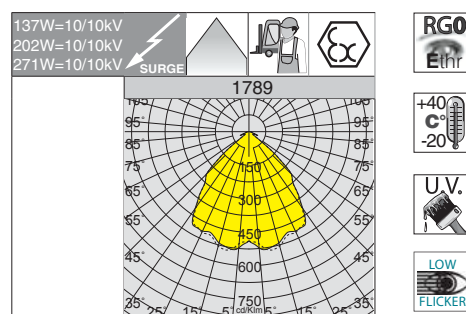
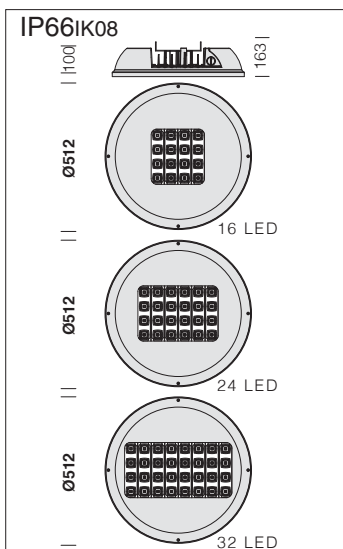
Directive 94/9/CE entrusts conformed European regulations with the task of setting out basic technical requirements to guarantee safety in explosion-prone areas, replacing contrasting national and European regulations belonging to the same sector.

IEC 60079-0	Electrical systems for potentially explosive atmospheres GENERAL REGULATIONS
IEC 60079-15	Electrical systems for potentially explosive atmospheres. PROTECTION METHOD "n"
IEC 60079-10-1	Explosive atmospheres Classification of hazardous locations. Explosive atmospheres due to the presence of gas
IEC 60079-14	Explosive atmospheres Design, selection and installation of electrical equipment
IEC 60079-10-2	Explosive atmospheres Classification of hazardous locations. Explosive atmospheres due to the presence of dust
IEC 60079-31	Explosive atmospheres Fixtures with protection by "t" enclosure for use in the presence of combustible dust
IEC 60079-28	Explosive atmospheres Protection of equipment and transmission systems using optical radiation



1789 ATEX

Protection against explosions	II 3G Ex nA OP IS IIC T4 IP66 Gc II 3D Ex tc IIIC T135°C IP66 Dc
Allowed dangerous area	Zone 2; Zone 22
Allowed room temperature	-20°C ÷ +40°C
Degree of protection	IP66
Installation	suspension
Casing mechanical resistance	IK08
Reference regulations	EN 60079-0; EN 60079-15; EN 60079-31; EN 60079-28
Certifications	CE, AR19ATEX036 (TYPE EXAMINATION CERTIFICATE)



Optics : in high-performance metallic V0 polycarbonate with micro-faceted finish.

1789 Astro ATEX - UGR<25 - wide beam						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	Ø	code	W	K - ølm - CRI
LED	grey	11.50	512	330296-00	137	4000K - 14856lm - CRI 80
	graphite			330297-00		
LED	grey	11.90	512	330290-00	202	4000K - 22298lm - CRI 80
	graphite			330293-00		
LED *	grey	12.20	512	330291-00	271	4000K - 29730lm - CRI 80
	graphite			330294-00		



GENERAL CHARACTERISTICS

Housing and frame: pressed in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Optics: made of PMMA with high temperature resistance and UV rays. Flow recovery in V0 polycarbonate, metallized high yield. Group risk-free according to EN62471.

Diffuser: in plexiglass.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Standard supply: supplied with double insulation switch. Automatic temperature control device. In the event of an unexpected LED temperature rise caused by particular weather conditions or a LED failure, the system will reduce the luminous flux to lower the working temperature and guarantee proper operation. Equipped with an air-circulation valve.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Standard version equipped with connector and wire for suspension installation. The heat dissipation system was designed to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.



Product with a very low flicker; uniform light for greater eye protection.

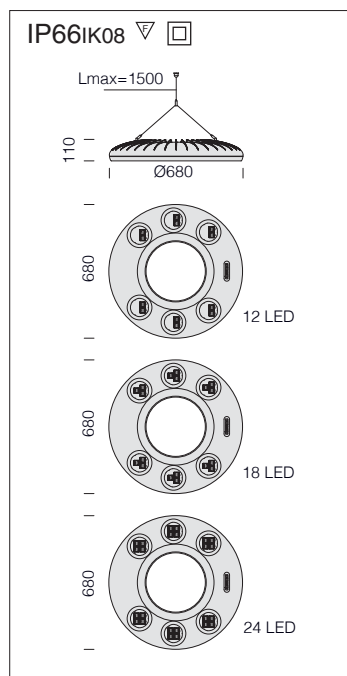
UPON REQUEST



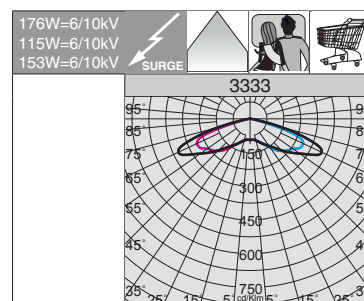
Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

The fixture can be equipped with several light dimmers:

- 1-10V (dimnable from 20% to 100%) or DALI dimmable driver
- power line carrier (PLC) remote control
- wireless control system



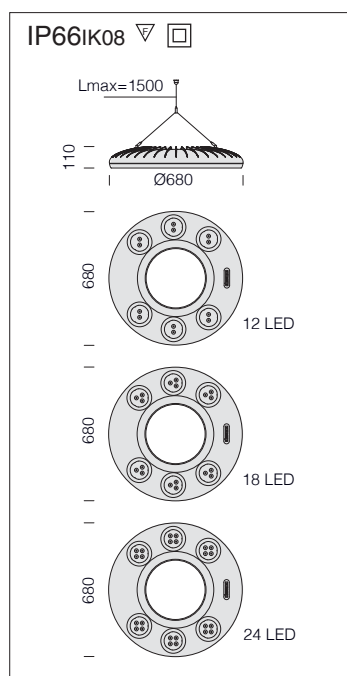
LED: Power factor $\geq 0,9$
Luminous flux maintenance 80%:
80.000h (L80B10).



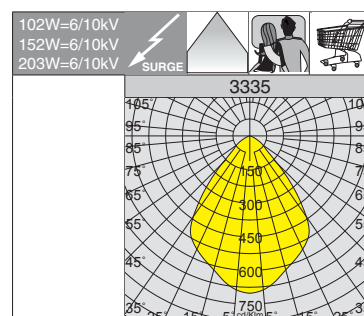
SUSPENSION

3333 Disco 4					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	grey 9007	10.00	330030-00	76	4000K - 7788lm - CRI 80
			330031-00	115	4000K - 11684lm - CRI 80
LED	grey 9007	11.20	330032-00	153	4000K - 14495lm - CRI 80
Upon request: possibility to choose different lighting point management systems (see page XVI-XX).					

	Power supply	n.LED	W	ølm
Upon request	700mA	12	102	8917lm
		18	152	13376lm
		24	203	17835lm



LED: Power factor $\geq 0,9$
Luminous flux maintenance 80%:
80.000h (L80B10).



3335 Disco 6 - wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey 9007	10.00	330033-00	102	4000K - 8917lm - CRI 80
			330034-00	152	4000K - 13376lm - CRI 80
LED	grey 9007	11.20	330035-00	203	4000K - 17835lm - CRI 80
Upon request: possibility to choose different lighting point management systems (see page XVI-XX).					

	Power supply	n.LED	W	ølm
Upon request	530mA	12	76	7788lm
		18	115	11684lm
		24	153	14495lm



GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins.

Optics : in high-performance metallic V0 polycarbonate with micro-faceted finish.

Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard Supply: complete with suspension bracket. Version equipped with IP66 airtight connector for mains connection. With dedicated electronic device to protect the LED module.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is installed on a metal pole.

OTHER CHARACTERISTICS

LED current	Allowed ambient temperature (min.°C ÷ max.°C)
700 mA	Ta = -20°C ÷ +50°C
1050mA	Ta = -20°C ÷ +45°C
1200mA	Ta = -20°C ÷ +40°C

The table below shows the values for standard versions. For further information (expected life, temperatures) and/or for special versions, please contact our customer service.



UNI EN ISO 9227 Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Registered Design DM/100271 The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.



Product with a very low flicker; uniform light for greater eye protection.

OTHER INFORMATION



The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission International de l'Eclairage) to assess the direct glare generated by

a lighting system. The European standard regulating the lighting of indoor work places (**UNI-EN 12464-1**) recommends a specific UGR value for different applications ranging between **10 and 30; the lower the UGR value, the lower the glare**. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

The fixture can be equipped with several light dimmers:

- 1-10V (dimnable from 20% to 100%) or DALI dimmable driver
- power line carrier (PLC) remote control
- wireless control system

UPON REQUEST

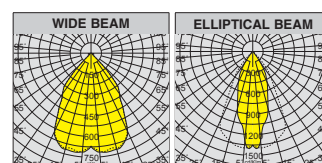
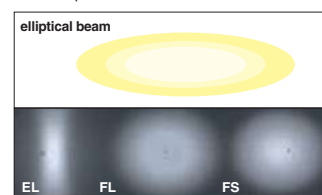


Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

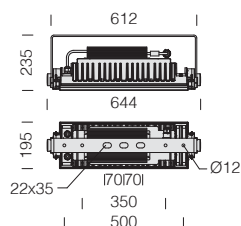


Ideal version for spaces with a high concentration of particular volatile chemicals around the luminaires (see chemical compatibility table in chapter *legend and Info*).

Other photometric distributions:



IP66IK08

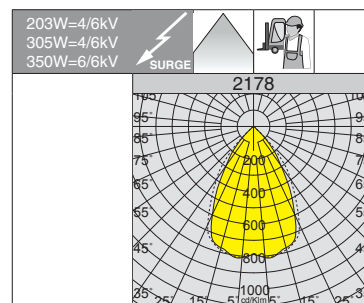
Registered Design
DM/100271

LED: power factor ≥ 0.92 .
Luminous flux maintenance:

70%	120.000h (L70B20)	700mA
70%	100.000h (L70B20)	1050mA
70%	70.000h (L70B20)	1200mA
80%	100.000h (L80B10)	700mA
80%	80.000h (L80B10)	1050mA
80%	50.000h (L80B10)	1200mA

***UGR<22**
700mA

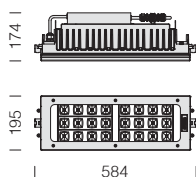
UGR<25

**2178 Forum - WITH BRACKET UGR<25**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		K - ølm 700mA - CRI
LED *	graphite	11.50	412900-00	203	4000K - 21852lm - CRI 80
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	11.50	412901-00	305	4000K - 30196lm - CRI 80
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	14.00	412902-00	350	4000K - 33536lm - CRI 80

Wiring: 220-240V 50/60Hz power supply; with external IP66 driver applied to the fixture.

IP66IK08

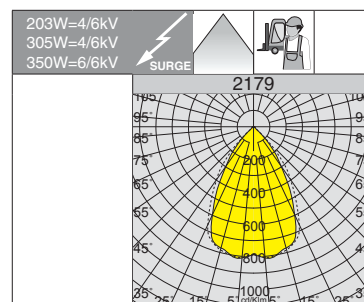
Registered Design
DM/100271

LED: power factor ≥ 0.92 .
Luminous flux maintenance:

70%	120.000h (L70B20)	700mA
70%	100.000h (L70B20)	1050mA
70%	70.000h (L70B20)	1200mA
80%	100.000h (L80B10)	700mA
80%	80.000h (L80B10)	1050mA
80%	50.000h (L80B10)	1200mA

***UGR<22**
700mA

UGR<25

**2179 Forum - UGR<25**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		K - ølm 700mA - CRI
LED *	graphite	9.50	412910-00	203	4000K - 21852lm - CRI 80
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	9.50	412911-00	305	4000K - 30196lm - CRI 80
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412912-00	350	4000K - 33536lm - CRI 80

Wiring: 220-240V 50/60Hz power supply; with external IP66 driver applied to the fixture; designed to be suspended with chain (to be ordered separately).



GENERAL CHARACTERISTICS

Housing: die-cast aluminium with wide cooling fins.

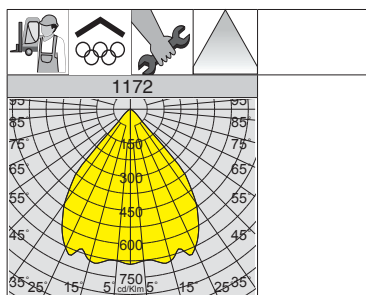
Reflector: pressed prismatic aluminium, anodised (3 μ) and polished for higher luminous efficiency.

Diffuser: 5 mm thick, thermal shock and impact resistant protective tempered glass and vandal resistant.

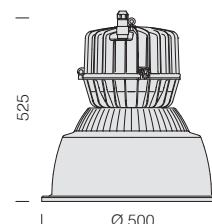
Standard supply: complete with IP67 airtight connector for mains connection.

Upon request: DIMM DALI and 1-10V versions.

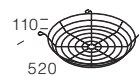
LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%: 50.000h (L80B20).



IP65 IK08 ▽



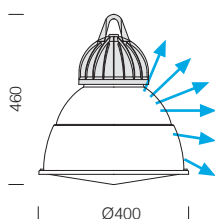
1172 Argon					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	s. silver	9.00	322652-00	129	5000K - 12129lm - CRI>70
			322653-00		4000K - 10500lm - CRI>80



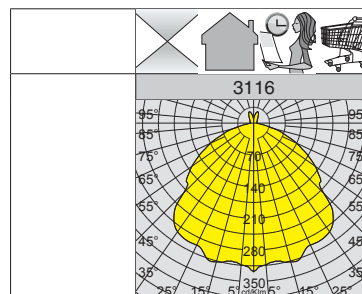
acc. 1122 protection guard

0.60	321012-00
Black plastic-coated steel rod protection guard. Screw mounting.	

IP43IK08 ▽



CRI 90

RG0
E_hrUV_A**GENERAL CHARACTERISTICS**

Housing: in die-cast aluminium, with wide cooling fins.

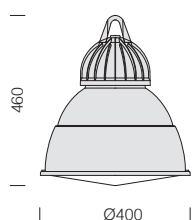
Diffuser: all in clear polycarbonate with anti-glare silking. Prismatic faceting inside for better light control.

LED: Power factor $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B20).

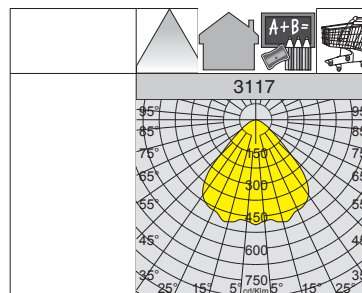
3116 Ghost - prismatic diffuser

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	s. silver	4.00	322928-00	28	4000K - 2661lm - CRI 90
			322929-00	38	4000K - 3697lm - CRI 90

IP43IK08 ▽



CRI 90

RG0
E_hrUV_A**GENERAL CHARACTERISTICS**

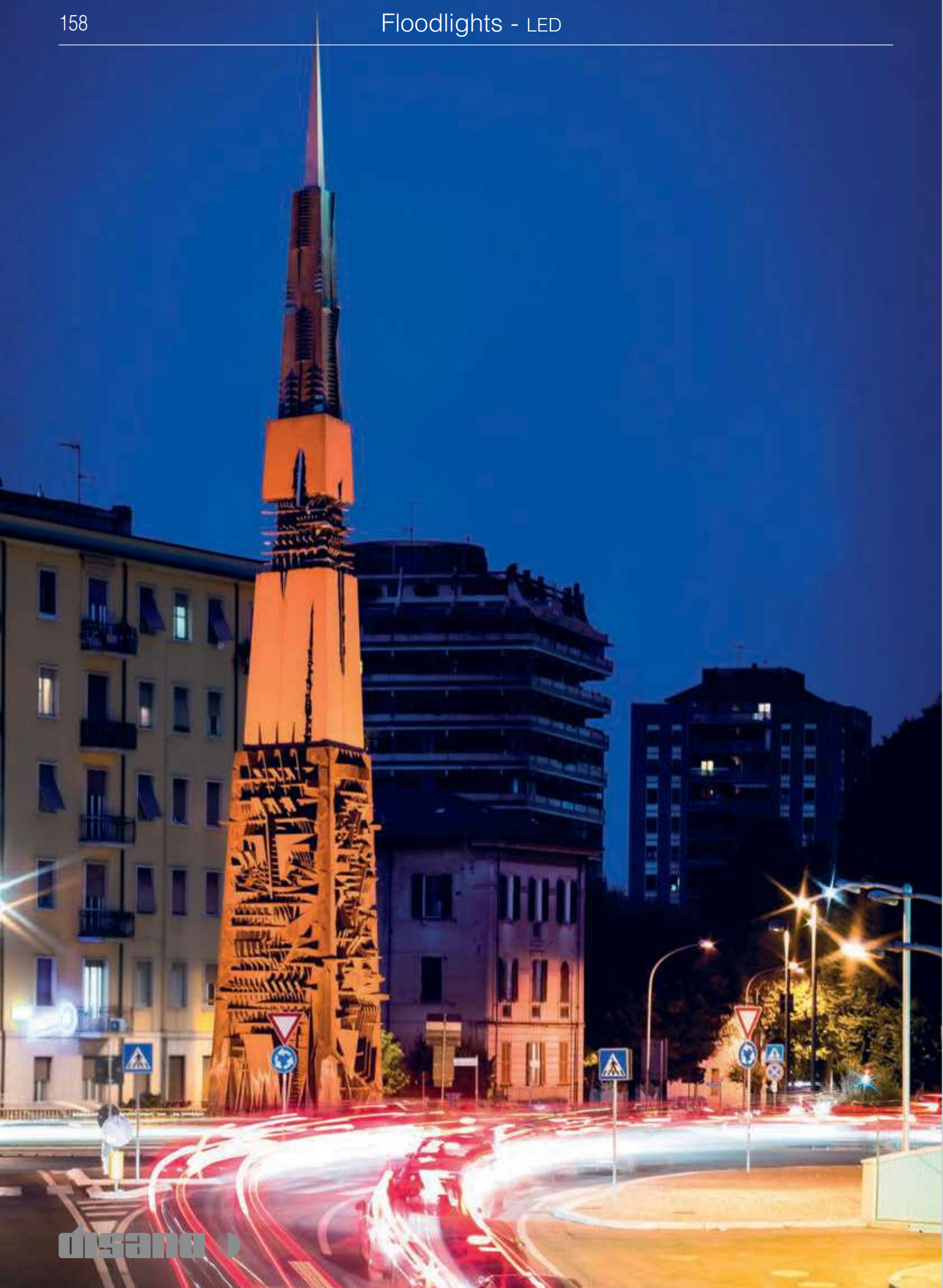
Housing: in die-cast aluminium, with wide cooling fins.

Diffuser: all in clear polycarbonate with anti-glare silking. Prismatic faceting inside for better light control. Smooth dust-proof and impact resistant finish outside, vandal-resistant and V2 self-extinguishing, UV-stabilised with a non-scratch and finger mark-proof.

LED: Power factor $\geq 0,95$.
Luminous flux maintenance 80%:
50.000h (L80B20).

3117 Ghost - painted diffuser

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	s. silver	4.00	323128-00	28	4000K - 2040lm - CRI 90
			323129-00	38	4000K - 2900lm - CRI 90



CRIPTO



Cripto [p. 160](#)

MICRO RODIO



MINI RODIO



Micro Rodio [p. 174](#)

Mini Rodio [p. 176](#)

RODIO



RODIO HP



Rodio [p. 180](#)

CROMO



Cromo [p. 194](#)

SATURNO



ASTRO



Saturno [p. 198](#)

Astro [p. 200](#)

RADON



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FORUM



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Forum 3 [p. 228](#)

SICURA



MODOLED



Sicura [p. 236](#)

Modoled [p. 238](#)



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Diffuser: tempered glass, 4 mm thick, resistant to thermal shock and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard Supply: complete with galvanised and coated bracket, Cripto small with electrical cable (L = 1m). Cripto medium/big with double insulation switch.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Upon request: protection up to 10KV (Cripto small, medium, big).

OTHER CHARACTERISTICS



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.



Complete with protractor scale. Aiming visor for precise aiming of the floodlight.

OTHER INFORMATION



Precision optics that allow broad design flexibility guaranteeing high levels of light quality.



Version with **AMBER COB LED 2200K** with subcode **-73**

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



Product with a very low flicker; uniform light for greater eye protection.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



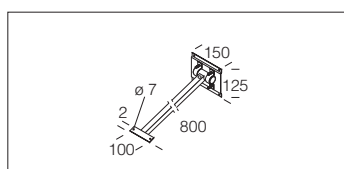
Version **DIMM 1-10V**, dimmable from 10% to 100% with **subcode -12**.



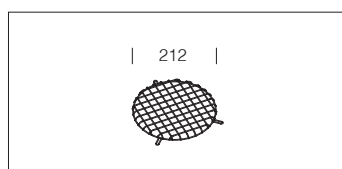
Upon request **Cripto big** supplied with a separate gear box for additional module of remote control system.



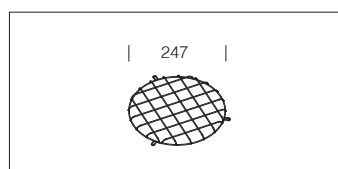
ACCESSORIES



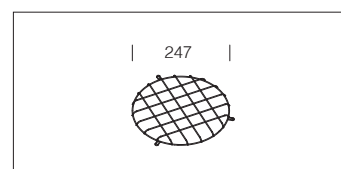
acc. 41 adjustable-angle arm	
graphite	995506-00
white	995508-00
Adjustable-angle arm galvanized steel. For Cripto micro.	



acc. 306 protection guard	
black	145515-00
Plastic-coated steel rod. For protection against impact of Cripto medium (except COB version).	



acc. 306 protection guard	
black	145516-00
Plastic-coated steel rod. For protection against impact of Cripto big with 12-25 LED (except COB version).	



acc. 306 protection guard	
black	145517-00
Plastic-coated steel rod. For protection against impact of Cripto big with 16 LED (except COB version).	

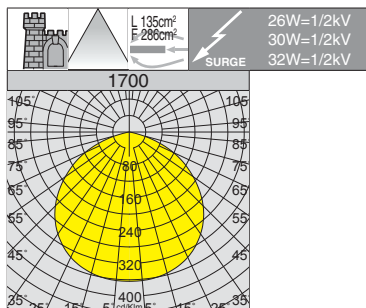
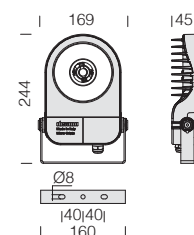

Built-in RADAR SENSOR (sub-code -19 at an extra price):

is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

FACTORY SETTINGS

Alimentazione	220-240V AC 50/60 Hz
Frequency	5,8GHz CW Radar ISM band - 0,2 - <10 mW
Detection area	ceiling: 360°
Detection distance	ceiling: Ø 4 m
Motion detection speed	0,6-1-1,5 m/s
Mounting height	ceiling: 1,5-3,5 m
Energy consumption	<0,9 W
Hold time	6 min
Ambient light	135 Lux

N.B.: factory settings cannot be changed; contact the manufacturer for different settings.


IP66IK08


Reflector: in pre-anodised aluminium.

LED: Power factor: $\geq 0,92$.

Luminous flux maintenance 80%: 50.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

Upon request version with:

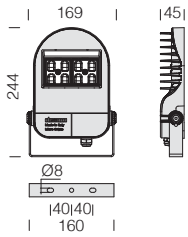
• **CLD D-D (DALI)** wiring with **sub-code -0041**.

* 230V version with **built-in radar sensor**.

1700 Cripto micro - COB

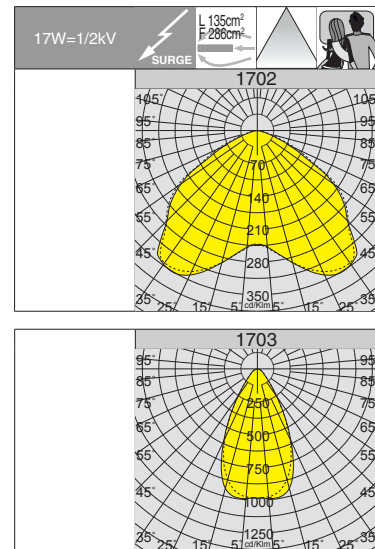
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	1.10	412960-00	26	4000K - 3023lm - CRI 90
	white		412963-00		
LED COB	graphite	1.10	412960-39	26	3000K - 2811lm - CRI 90
	white		412963-39		
LED COB	graphite	1.10	412962-00	32	4000K - 3755lm - CRI 90
	white		412964-00		
LED COB	graphite	1.10	412962-39	32	3000K - 3492lm - CRI 90
	white		412964-39		
wattage (230V)					K - ølm 230V - CRI
LED COB *	graphite	1.10	412962-19	30	4000K - 2661lm - CRI 80
	white		412964-19		

IP66IK08

**Optics:** in high efficiency PMMA.**LED:** Power factor: $\geq 0,92$.Luminous flux maintenance 80%:
90.000h (L80B20).**Equipment:** complete with electrical cable for mains connection
L=0,6m.**Upon request** version with:

• CLD D-D (DALI) wiring with sub-code -0041.

90.000h

RG0
E_hr+40
C°
-20

U.V.

LOW
FLICKER

90°

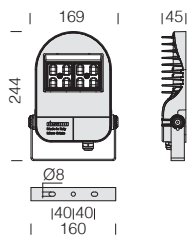
LOW
FLICKERLOW
FLICKER**1702 Cripto micro - symmetric wide beam**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED	graphite	1.10	412975-00	17	4000K - 2010lm - CRI 80
	white		412976-00		

1703 Cripto micro - symmetric narrow beam

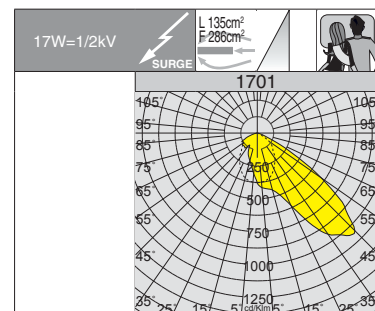
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED	graphite	1.10	412980-00	17	4000K - 2049lm - CRI 80
	white		412981-00		

IP66IK08

**Optics:** in high efficiency PMMA.**LED:** Power factor: $\geq 0,92$.Luminous flux maintenance 80%:
90.000h (L80B20).**Equipment:** complete with electrical cable for mains connection
L=0,6m.**Upon request** version with:

• CLD D-D (DALI) wiring with sub-code -0041.

90.000h

RG0
E_hr+40
C°
-20

U.V.

LOW
FLICKER

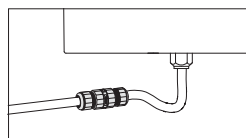
90°

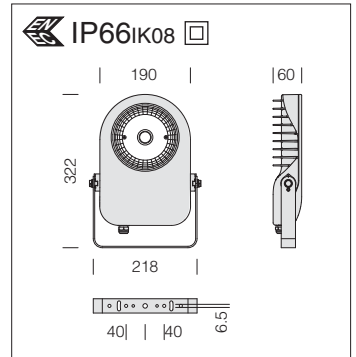
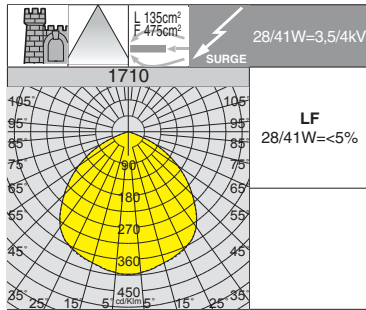
LOW
FLICKERLOW
FLICKER**1701 Cripto micro - asymmetric**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED	graphite	1.10	412970-00	17	4000K - 2063lm - CRI 80
	white		412971-00		

acc. 339 Connector (3-pole)

993854-00

To be used for mains connection of
Cripto micro.



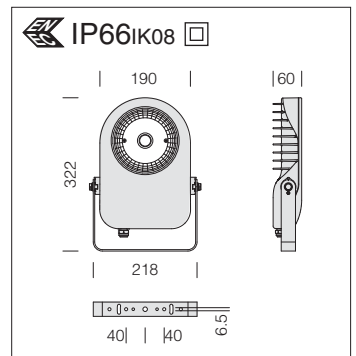
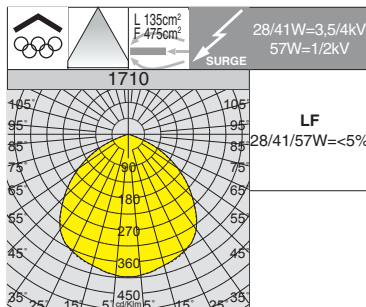
Reflector: in pre-anodised aluminium.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 50.000h (L80B20).

Equipment: complete with electrical cable for mains connection.

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1710 Cripto small - wide beam					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED COB AMBER	graphite	2.50	413000-73	28	2200K - 3264lm - AMBER
	grey 9006		413001-73		
	white		413002-73		
	anthracite		413003-73		
LED COB AMBER	graphite	2.50	413050-73	41	2200K - 4453lm - AMBER
	grey 9006		413051-73		
	white		413054-73		
	anthracite		413056-73		

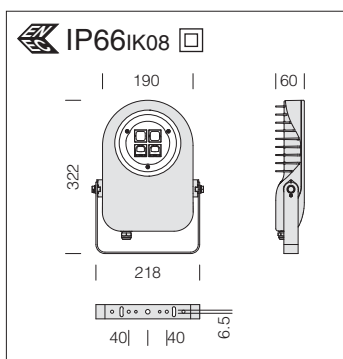


Reflector: in pre-anodised aluminium.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 50.000h (L80B20).

Equipment: complete with electrical cable for mains connection.

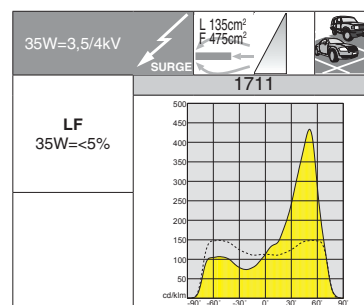
1710 Cripto small - wide beam					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED COB	graphite	2.50	413000-00	28	4000K - 2654lm - CRI 90
	grey 9006		413001-00		
	white		413002-00		
	anthracite		413003-00		
LED COB	graphite	2.50	413050-00	41	4000K - 3907lm - CRI 90
	grey 9006		413051-00		
	white		413054-00		
	anthracite		413056-00		
LED COB	graphite	2.50	413052-00	57	4000K - 5237lm - CRI 90
	grey 9006		413053-00		
	white		413055-00		
	anthracite		413057-00		



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

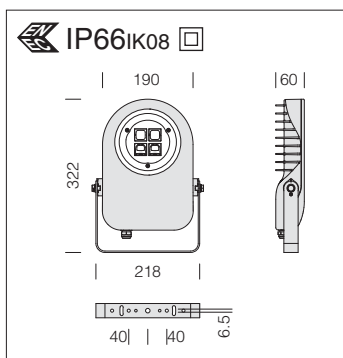
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).

Equipment: complete with electrical cable for mains connection.



1711 Cripto small - asymmetric					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.00	413010-00	35	4000K - 3293lm - CRI 80
	grey 9006		413011-00		
	anthracite		413012-00		

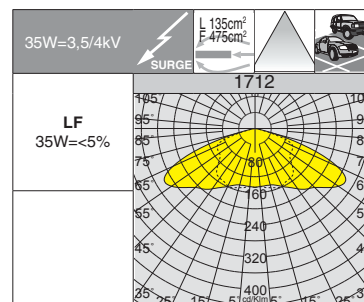
	Power supply	W tot	ølm
Upon request	550mA	27	2587lm



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).

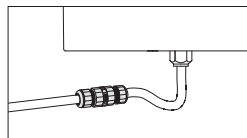
Equipment: complete with electrical cable for mains connection.

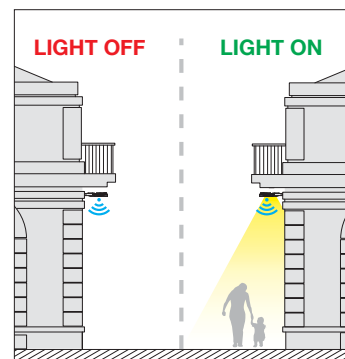


1712 Cripto small - symmetric					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.00	413020-00	35	4000K - 3483lm - CRI 80
	grey 9006		413021-00		
	anthracite		413022-00		

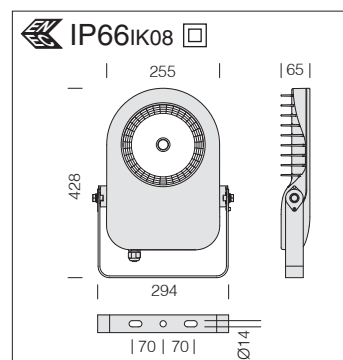
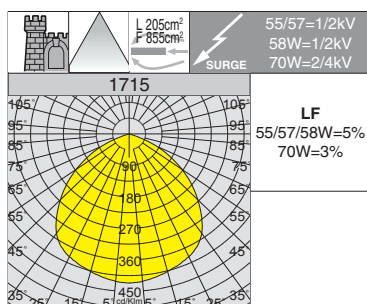
	Power supply	W tot	ølm
Upon request	550mA	27	2737lm

acc. 339 Connector
993836-00
To be used for mains connection of Cripto small.





Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

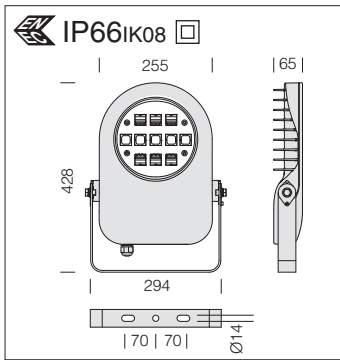


Reflector: in pre-anodised aluminium.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 50.000h (L80B20).

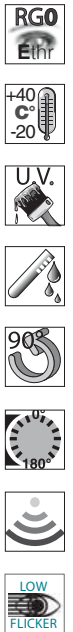
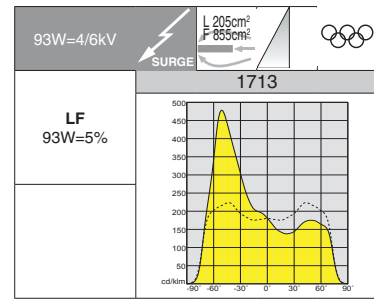
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1715 Cripto medium - wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	5.50	413062-00	55	4000K - 6673lm - CRI 80
	grey 9006		413063-00		
LED COB	graphite	5.50	413060-00	57	4000K - 5347lm - CRI 90
	grey 9006		413061-00		
LED COB AMBER	graphite	5.50	413060-73	58	2200K - 6149lm - AMBER
	grey 9006		413061-73		
LED COB	graphite	5.50	413064-00	70	4000K - 9306lm - CRI 80
	grey 9006		413065-00		



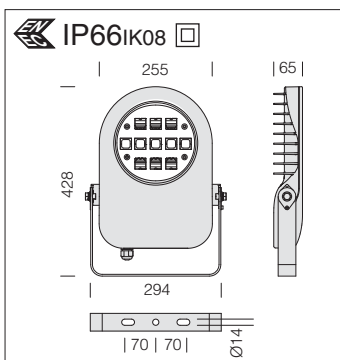
Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).



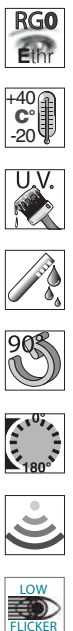
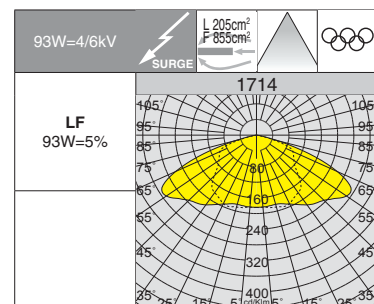
1713 Cripto medium - asymmetric					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	5.50	413030-00	93	4000K - 9121lm - CRI 80
	grey 9006		413031-00		

	Power supply	W tot	ølm
Upon request	530mA	70	6906lm



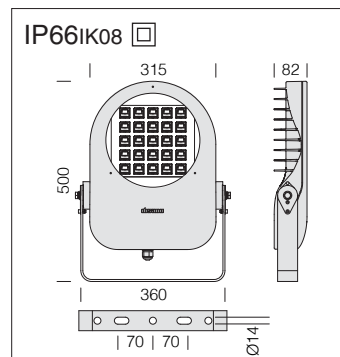
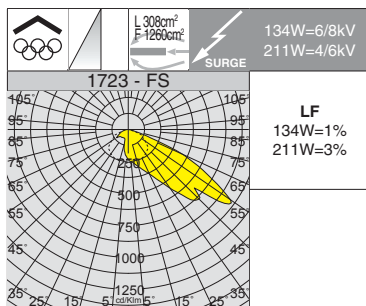
Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).



1714 Cripto medium - symmetric					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	5.50	413040-00	93	4000K - 9583lm - CRI 80
	grey 9006		413041-00		

	Power supply	W tot	ølm
Upon request	530mA	70	7256lm

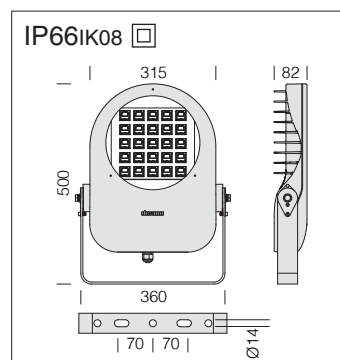
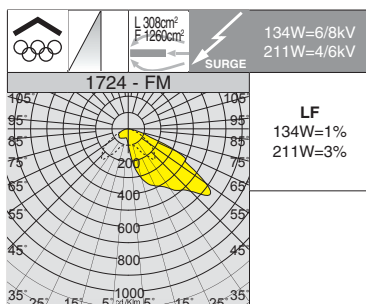


Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$. Luminous flux maintenance 80%: 80.000h (L80B10).

Installation is recommended in places where the ambient temperature is:
max 40° C - outdoor
max 30° C - indoor

1723 Cripto big - asymmetric - FS					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	7.50	413070-00	134	4000K - 12169lm - CRI 80
	grey 9006		413074-00		
LED	graphite	8.00	413071-00	211	4000K - 19014lm - CRI 80
	grey 9006		413075-00		

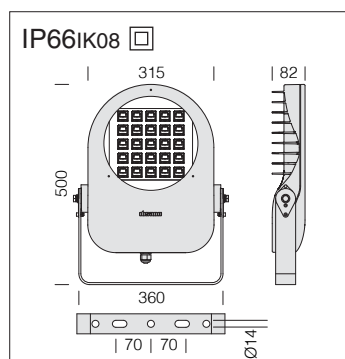


Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$. Luminous flux maintenance 80%: 80.000h (L80B10).

Installation is recommended in places where the ambient temperature is:
max 40° C - outdoor
max 30° C - indoor

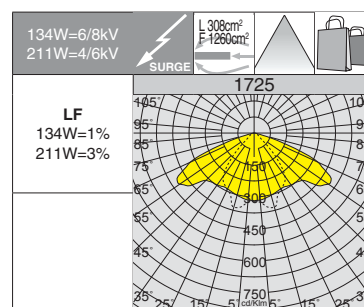
1724 Cripto big - asymmetric - FL					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	7.50	413080-00	134	4000K - 12682lm - CRI 80
	grey 9006		413084-00		
LED	graphite	8.00	413081-00	211	4000K - 19816lm - CRI 80
	grey 9006		413085-00		



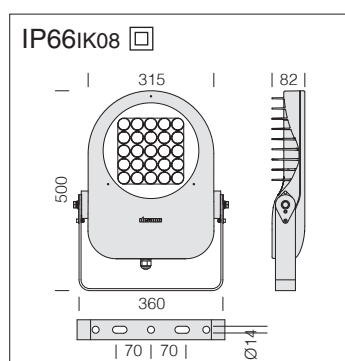
Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).

Installation is recommended in places where the ambient temperature is:
max 40° C - outdoor
max 30° C - indoor



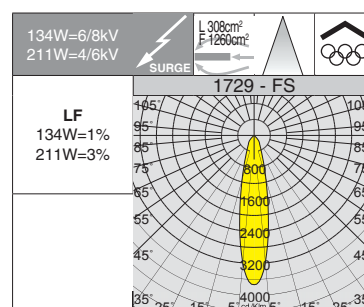
1725 Cripto big - symmetric					
wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI
LED	graphite	7.50	413090-00	134	4000K - 12988lm - CRI 80
	grey 9006		413094-00		
LED	graphite	8.00	413091-00	211	4000K - 20259lm - CRI 80
	grey 9006		413095-00		



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V0 polycarbonate.

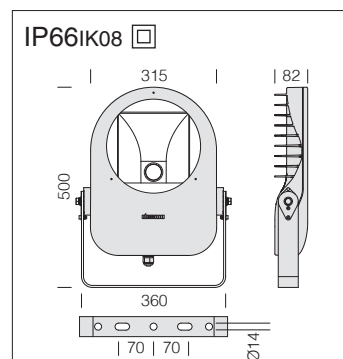
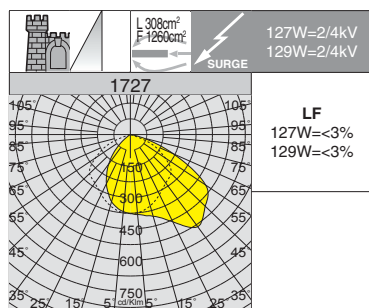
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B10).

Installation is recommended in places where the ambient temperature is:
max 40° C - outdoor
max 30° C - indoor



1729 Cripto big - symmetric 20° - FS					
wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI
LED	graphite	7.50	413170-00	134	4000K - 14026lm - CRI 80
	grey 9006		413174-00		
LED	graphite	8.00	413171-00	211	4000K - 22003lm - CRI 80
	grey 9006		413175-00		



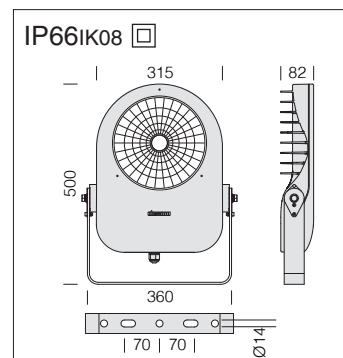
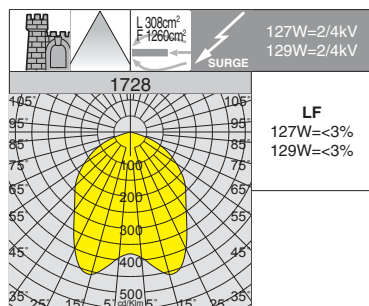


Reflector: asymmetric and faceted, made from aluminium 99.98.

LED: Power factor: ≥ 0.92 .
Luminous flux maintenance 80%:
50.000h (L80B20).

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1727 Cripto big - asymmetric					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED COB	graphite	6.00	413150-00	129	4000K - 12738lm - CRI 80
	grey 9006		413152-00		
LED COB AMBER	graphite	6.00	413150-73	127	2200K - 14266lm - AMBER
	grey 9006		413152-73		

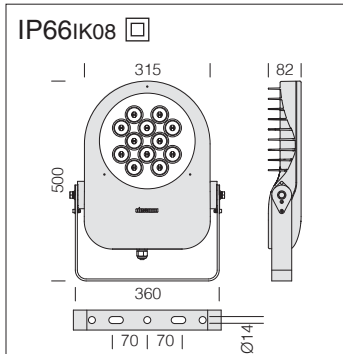


Reflector: in pre-anodized aluminium.

LED: Power factor: ≥ 0.92 .
Luminous flux maintenance 80%:
50.000h (L80B20).

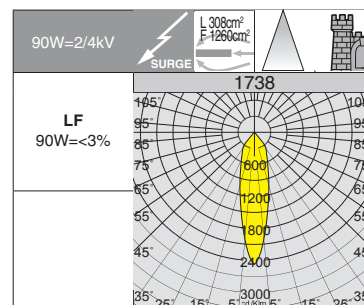
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1728 Cripto big - wide beam					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED COB	graphite	6.00	413160-00	129	4000K - 12292lm - CRI 80
	grey 9006		413162-00		
LED COB AMBER	graphite	6.00	413160-73	127	2200K - 13767lm - AMBER
	grey 9006		413162-73		

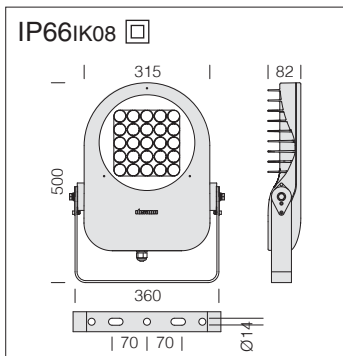


Optics: in high-performance metallic V2 polycarbonate with micro-faceted finish.

LED: Power factor: $\geq 0,92$.
Luminous flux maintenance 80%:
80.000h (L80B10).

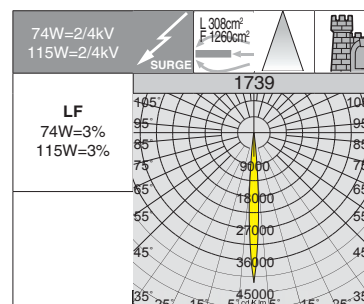


1738 Cripto big - 24°					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	7.50	413180-00	90	4000K - 6511lm - CRI 80
	grey 9006		413181-00		



Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor: $\geq 0,92$.
Luminous flux maintenance 80%:
80.000h (L80B10).



1739 Cripto big - 7°					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	7.50	413190-00	74	4000K - 5872lm - CRI 80
	grey 9006		413191-00		
LED	graphite	8.00	413192-00	115	4000K - 9176lm - CRI 80
	grey 9006		413193-00		





GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Diffuser: 4mm thick tempered glass, resistant to thermal shocks and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Equipment: complete with galvanised and coated bracket; silicone rubber gasket; external screws and bolts in stainless steel; complete with electrical cable for mains connection **Mini Rodio**, with knife switch supplied to interrupt the line during maintenance.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

OTHER CHARACTERISTICS



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.



Precision optics that allow broad design flexibility guaranteeing high levels of light quality.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.



The fixture's design is configured to minimise wind exposure

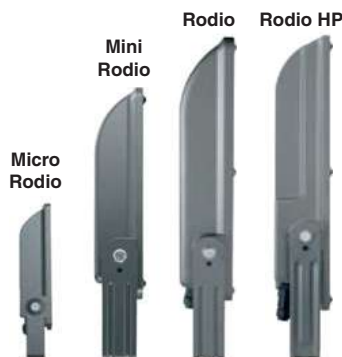
surfaces:

Micro Rodio = L:86cm² F:278cm²

Mini Rodio = L:242cm² F:807cm²

Rodio = L:390cm² F:1420cm²

Rodio HP = L:455cm² F:1529cm²



Registered Design **DM/100271** The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



Version **CLD D-D (DALI)** wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

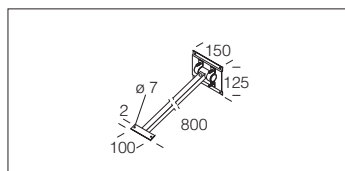


Version with **AMBER LED 2200K** with subcode **-73**

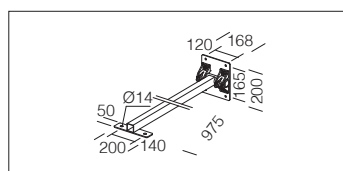
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



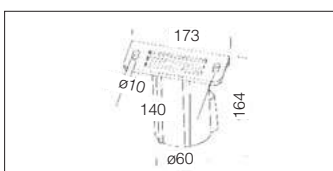
ACCESSORIES



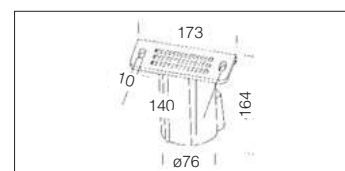
acc. 41 adjustable-angle arm	
graphite	995506-00
white	995508-00
anthracite	995509-00
Adjustable-angle arm galvanized steel. For Micro Rodio.	



acc. 42 adjustable-angle arm	
graphite	995504-00
Adjustable-angle arm galvanized steel. For Mini Rodio.	



acc. 333 60 pole mounting	
graphite	997915-00
Made of aluminium. To be used to apply Mini Rodio on a 60 pole.	



acc. 334 76 pole mounting	
graphite	997916-00
Made of aluminium. To be used to apply Mini Rodio on a 76 pole.	



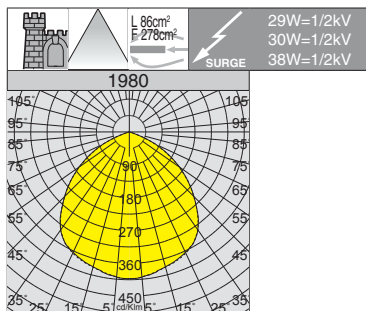
Built-in RADAR SENSOR (sub-code -19 at an extra price):

is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.

FACTORY SETTINGS

Alimentazione	220-240V AC 50/60 Hz
Frequency	5,8GHz CW Radar ISM band - 0,2 - <10 mW
Detection area	ceiling: 360°
Detection distance	ceiling: Ø 4 m
Motion detection speed	0,6-1-1,5 m/s
Mounting height	ceiling: 1,5-3,5 m
Energy consumption	<0,9 W
Hold time	6 min
Ambient light	135 Lux

N.B.: factory settings cannot be changed; contact the manufacturer for different settings.

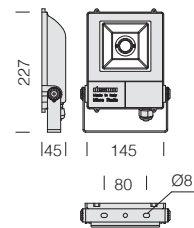


50.000h
CRI 90
* SENSOR



IP66IK08

Registered Design
DM/100271



Reflector: in anodized 99.85 aluminium.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

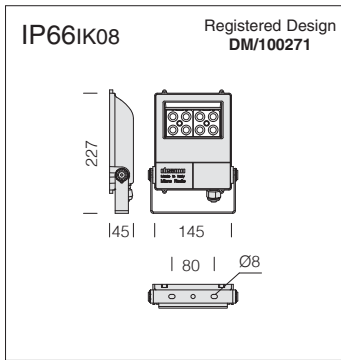
Equipment: complete with electrical cable for mains connection L=0,6m.

On request version with:
• **LED AMBER 2200K** with sub-code **-73**.
• double insulation class with sub-code **-14**.
• **CLD D-D (DALI)** wiring with sub-code **-0041**.

* 230V version with **built-in radar sensor**.

1980 Micro Rodio - COB

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	1.10	414860-00	29	4000K - 2483lm - CRI 90
	white		414861-00		
	anthracite		414862-00		
LED COB	graphite	1.10	414860-39	29	3000K - 2309lm - CRI 90
	white		414861-39		
	anthracite		414862-39		
LED COB	graphite	1.10	414865-00	38	4000K - 3023lm - CRI 90
	white		414866-00		
	anthracite		414867-00		
LED COB	graphite	1.10	414865-39	38	3000K - 2811lm - CRI 90
	white		414866-39		
	anthracite		414867-39		
wattage (230V)					K - ølm 230mA - CRI
LED COB *	graphite	1.10	414863-19	30	4000K - 2661lm - CRI 80
	white		414864-19		
	anthracite		414867-19		



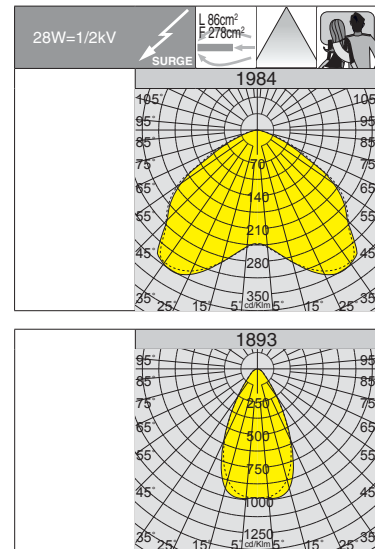
Optics: in high efficiency PMMA.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
50.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

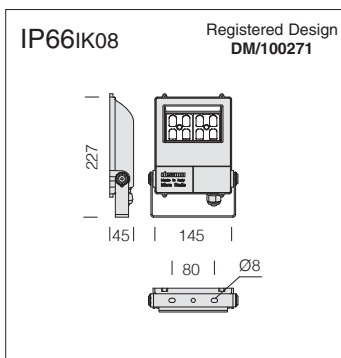
On request version with:

- double insulation class with sub-code -14.
- **CLD D-D (DALI)** wiring with sub-code -0041.



1984 Micro Rodio - symmetric wide beam					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	graphite	1.10	414890-00	28	4000K - 3056lm - CRI 80
	white		414891-00		
	anthracite		414892-00		

1983 Micro Rodio - symmetric narrow beam					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	graphite	1.10	414880-00	28	4000K - 3097lm - CRI 80
	white		414881-00		
	anthracite		414882-00		



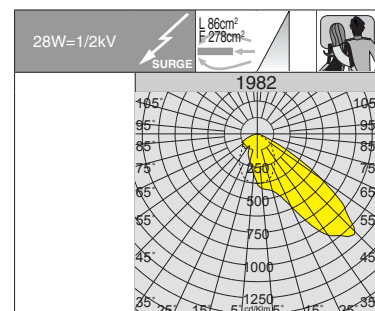
Optics: in high efficiency PMMA.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
50.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

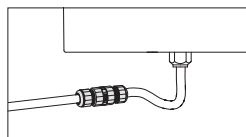
On request version with:

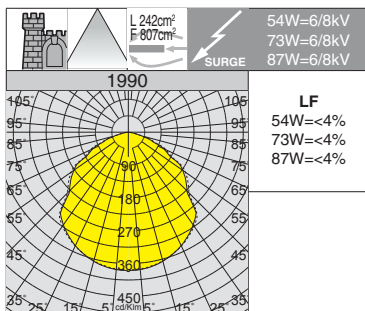
- double insulation class with sub-code -14.
- **CLD D-D (DALI)** wiring with sub-code -0041.



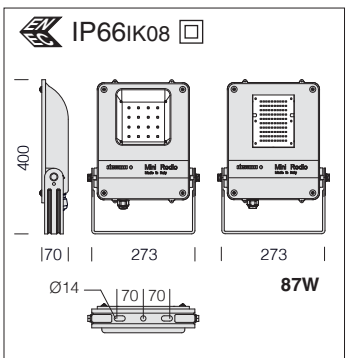
1982 Micro Rodio - asymmetric					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED	graphite	1.10	414870-00	28	4000K - 3118lm - CRI 80
	white		414871-00		
	anthracite		414872-00		

acc. 339 Connector (3-pole)
993854-00
To be used for mains connection of Micro Rodio





80.000h



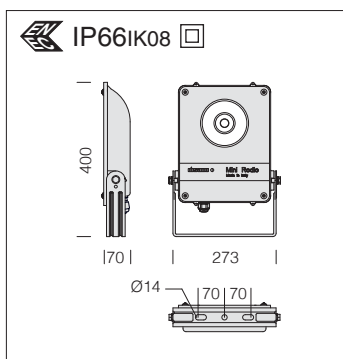
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

1990 Mini Rodio - symmetric wide beam

wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	graphite	4.50	414900-00	54	4000K - 5999lm - CRI 80
			414901-00	73	4000K - 7375lm - CRI 80
LED*	graphite	4.50	414902-00	87	4000K - 9512lm - CRI 80

* CLASS INSULATION I version.

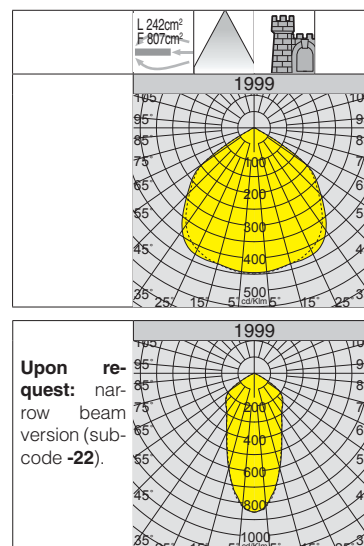


Reflector: in pressed 99.85 aluminium, anodically oxidized and polished.

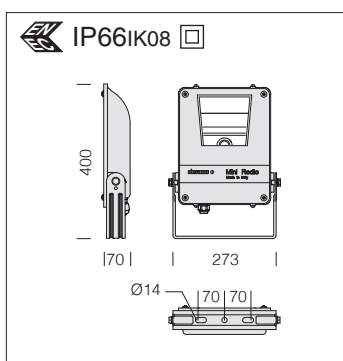
LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

Upon request: narrow beam version (sub-code -22).



1999 Mini Rodio - COB symmetric					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	4.50	414840-00	39	4000K - 5334lm - CRI 80
			414840-39		3000K - 5067lm - CRI 80
LED COB	graphite	4.50	414841-00	54	4000K - 6710lm - CRI 80
			414841-39		3000K - 6375lm - CRI 80
LED COB	graphite	4.50	414842-00	66	4000K - 7901lm - CRI 80
			414842-39		3000K - 7427lm - CRI 80

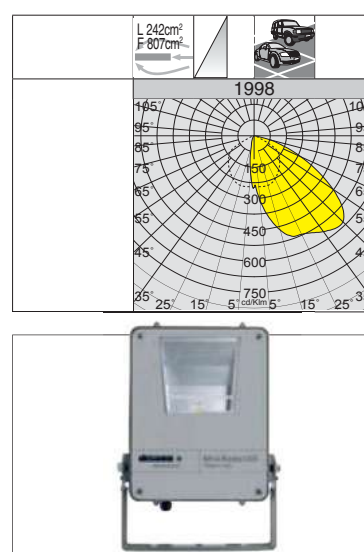


Reflector: in high-grade 99.99 aluminium with PVD treatment.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

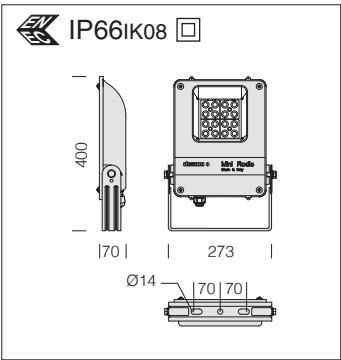
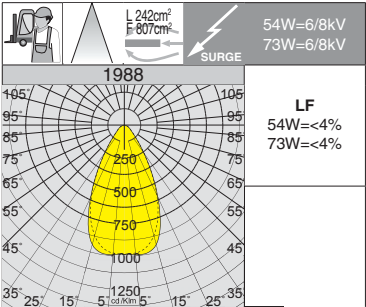
Equipment: complete with electrical cable for mains connection L=0,6m.

Upon request: narrow beam version (sub-code -22).



1998 Mini Rodio - COB asymmetric					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	4.50	414850-00	39	4000K - 4971lm - CRI 80
			414850-39		3000K - 4721lm - CRI 80
LED COB	graphite	4.50	414851-00	54	4000K - 6236lm - CRI 80
			414851-39		3000K - 5924lm - CRI 80
LED COB	graphite	4.50	414852-00	66	4000K - 7153lm - CRI 80
			414852-39		3000K - 6724lm - CRI 80

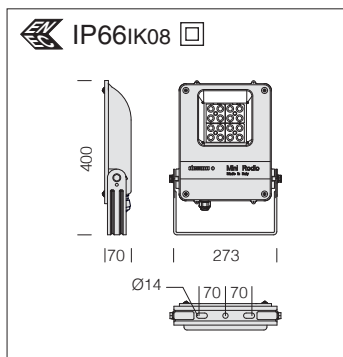




Optics: in high efficiency PMMA.
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 80.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.

1988 Mini Rodio - symmetric narrow beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.50	414930-00	54	4000K - 6564lm - CRI 80
			414931-00	73	4000K - 8070lm - CRI 80

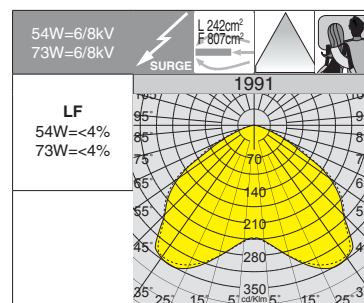


Optics: in high efficiency PMMA.

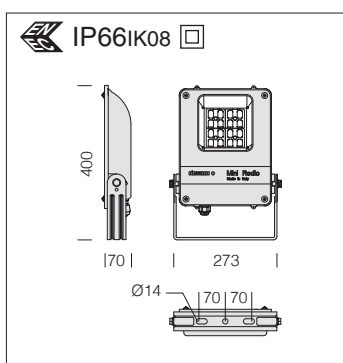
LED: Power factor: $\geq 0,9$.

Luminous flux maintenance 80%: 80.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.



1991 Mini Rodio - symmetric wide beam					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.50	414940-00	54	4000K - 6478lm - CRI 80
			414941-00	73	4000K - 7964lm - CRI 80

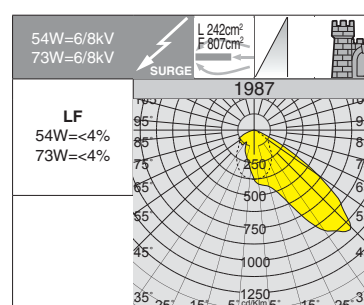


Optics: in high efficiency PMMA.

LED: Power factor: $\geq 0,9$.

Luminous flux maintenance 80%: 80.000h (L80B20).

Equipment: complete with electrical cable for mains connection L=0,6m.



1987 Mini Rodio - asymmetric					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.50	414910-00	54	4000K - 6606lm - CRI 80
			414911-00	73	4000K - 8122lm - CRI 80





GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Diffuser: 5mm thick tempered glass, resistant to thermal shocks and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Equipment: complete with galvanised and coated bracket. Silicone rubber gasket; external screws and bolts in stainless steel; air recirculation valve. Airtight connector for quick installation with **no need to open the fixture.**



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

OTHER CHARACTERISTICS



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.



Precision optics that allow broad design flexibility guaranteeing high levels of light quality.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.



Virtual midnight sub-code -30: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise).

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.



Rodio is also available in the RGBW - DMX/ RDM version (see chapter *Lighting management systems - DMX solution for LED RGBW*).

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

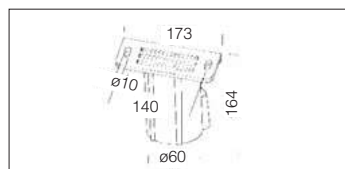


Version with **AMBER LED 2200K** with sub-code **-73:** lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

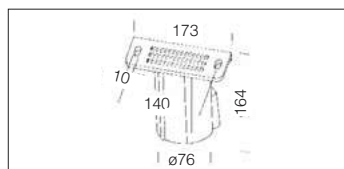
Available special version with **AMBER colour LED** sources for wine processing and storage facilities. **Note:** when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



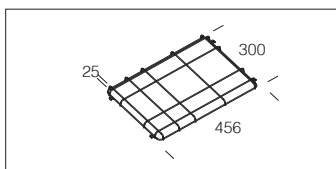
ACCESSORIES



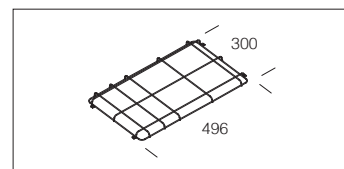
acc. 333 ø60 pole mounting	
graphite	997915-00
Made of aluminium. To be used to apply the fixture on a ø 60 pole.	



acc. 334 ø76 pole mounting	
graphite	997916-00
Made of aluminium. To be used to apply the fixture on a ø 76 pole.	

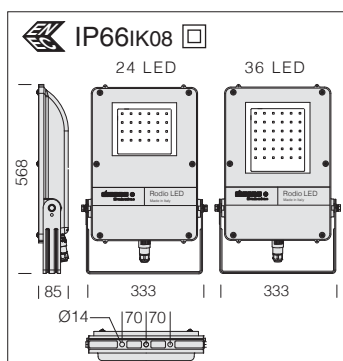


acc. 350 protection guard	
black	997925-00
Plastic-coated steel rod. For protection against impact.	

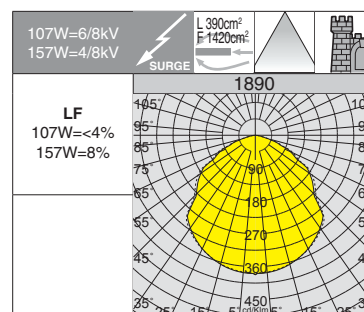


acc. 350 protection guard	
black	997928-00
Plastic-coated steel rod. For protection against impact of Rodio HP.	

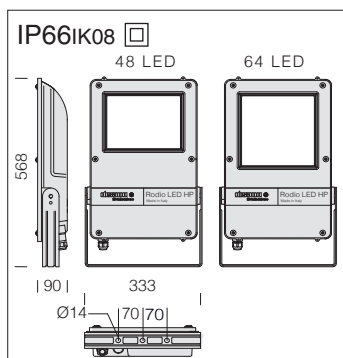




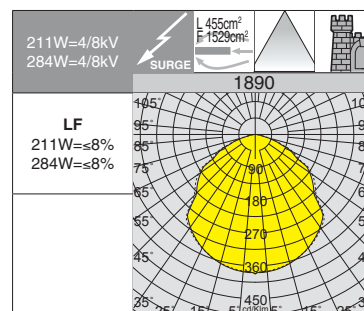
LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



1890 Rodio - symmetric wide beam					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	graphite	6.30	414790-00	107	4000K - 11068lm - CRI 80
			414791-00	157	4000K - 16602lm - CRI 80

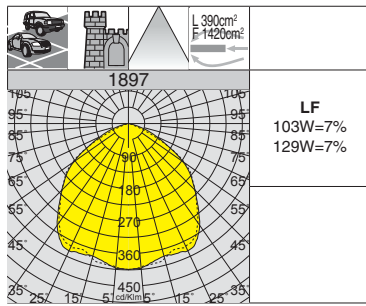


LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

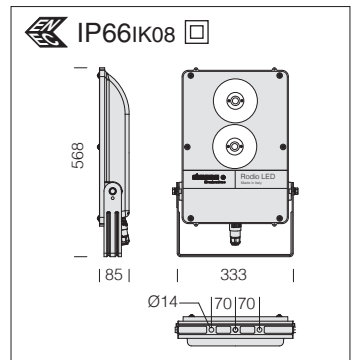


1890 Rodio HP - symmetric wide beam					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	graphite	8.00	414794-00	211	4000K - 25900lm - CRI 80
		9.60	414795-00	284	4000K - 35260lm - CRI 80





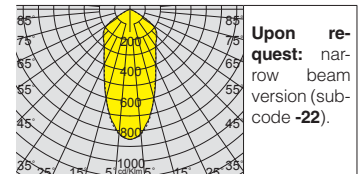
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
79	2200K - 8173lm
114	2200K - 10956lm
120	2200K - 20610lm



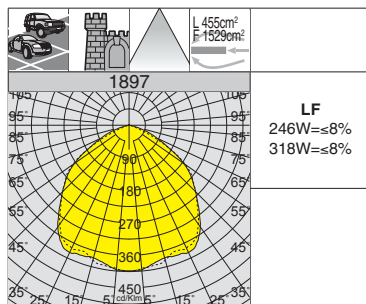
Reflector: in pressed 99.85 aluminium, anodically oxidized and polished.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 50.000h (L80B20).

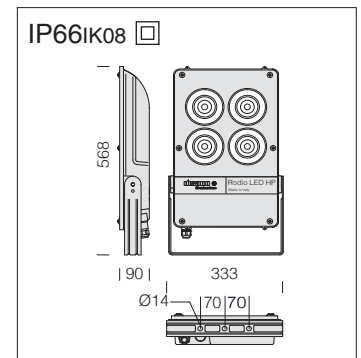
1897 Rodio - COB					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	graphite	6.20	414820-00	79	4000K - 9831lm - CRI 80
			414820-39		3000K - 9340lm - CRI 80
			414821-00		4000K - 12308lm - CRI 80
LED COB	graphite	6.20	414821-39	103	3000K - 11693lm - CRI 80
			414822-00		4000K - 15802lm - CRI 80
LED COB	graphite	6.20	414822-39	129	3000K - 14854lm - CRI 80
			414823-00	196	4000K - 23245lm - CRI 80



Upon request: narrow beam version (sub-code -22).



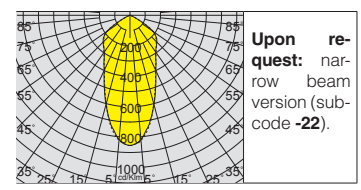
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
220	2200K - 22714lm
328	2200K - 34668lm



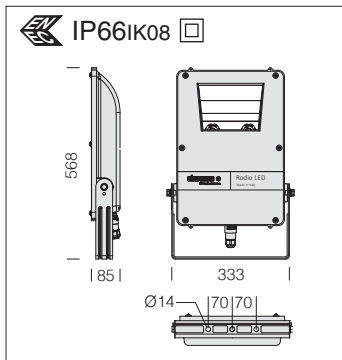
Reflector: in pressed 99.85 aluminium, anodically oxidized and polished.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%: 50.000h (L80B20).

1897 Rodio HP - COB					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	graphite	7.60	414825-00	246	4000K - 31640lm - CRI 80
			414825-39		3000K - 29425lm - CRI 80
			414826-00	318	4000K - 41110lm - CRI 80
LED COB	graphite	8.90	414826-39		3000K - 38232lm - CRI 80

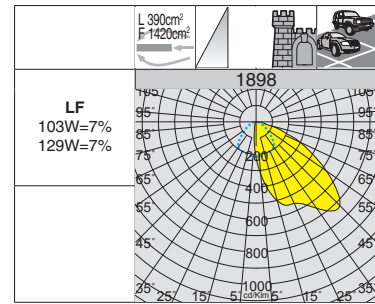


Upon request: narrow beam version (sub-code -22).



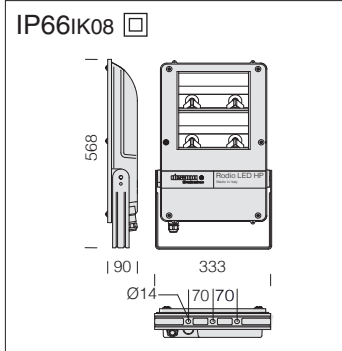
Reflector: in high-grade 99,99 aluminium with PVD treatment.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
50.000h (L80B20).



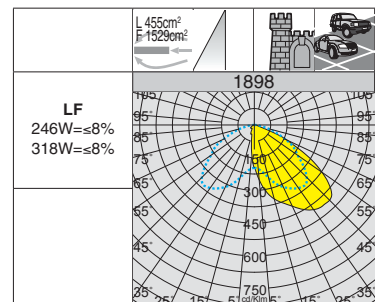
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
79	2200K - 7110lm
114	2200K - 9371lm
196	2200K - 18663lm

1898 Rodio - COB asymmetric					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED COB	graphite	6.20	414920-00	79	4000K - 8553lm - CRI 80
			414920-39		3000K - 8125lm - CRI 80
LED COB	graphite	6.20	414921-00	103	4000K - 10932lm - CRI 80
			414921-39		3000K - 10386lm - CRI 80
LED COB	graphite	6.20	414922-00	129	4000K - 14199lm - CRI 80
			414922-39		3000K - 13347lm - CRI 80
LED COB	graphite	6.20	414923-00	196	4000K - 21050lm - CRI 80



Reflector: in high-grade 99,99 aluminium with PVD treatment.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
50.000h (L80B20).

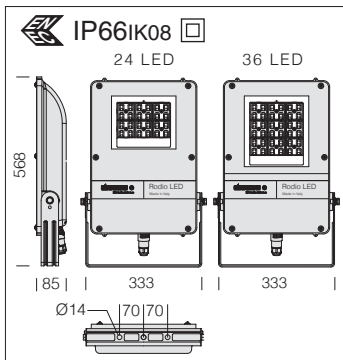


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
220	2200K - 21736lm
328	2200K - 34227lm

1898 Rodio HP - COB asymmetric					
wattage	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm - CRI
LED COB	graphite	7.60	414925-00	246	4000K - 30277lm - CRI 80
			414925-39		3000K - 28157lm - CRI 80
LED COB	graphite	8.90	414926-00	318	4000K - 40586lm - CRI 80
			414926-39		3000K - 37745lm - CRI 80
LED COB	graphite	8.90	414927-00	318	4000K - 44645lm - CRI 70

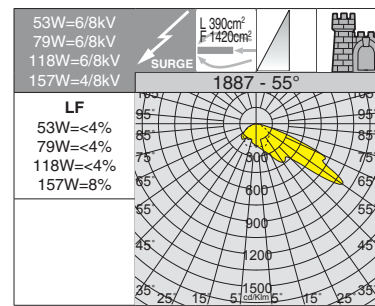






Optics: in high efficiency PMMA.

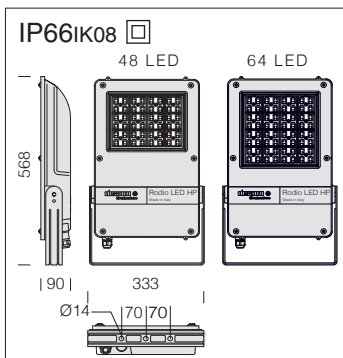
LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
53	2200K - 6049lm - 45°
79	2200K - 8105lm - 45°
118	2200K - 11869lm - 45°
	2200K - 11785lm - 55°
157	2200K - 14822lm - 45°
	2200K - 14453lm - 55°

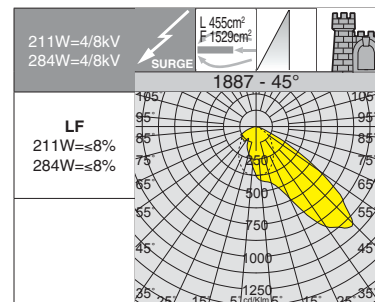
Upon request: special version (with *conformal coating* treatment with **subcode -38**) featuring high chemical resistance for environments with high chlorine content.

1887 Rodio - asymmetric					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	graphite	6.30	414754-00	53	4000K - 6874lm - CRI 80 - 45°
LED	graphite	6.30	414755-00	79	4000K - 9210lm - CRI 80 - 45°
LED	graphite	6.30	414756-00	118	4000K - 13488lm - CRI 80 - 45°
			414752-00		4000K - 13392lm - CRI 80 - 55°
LED	graphite	6.30	414757-00	157	4000K - 16843lm - CRI 80 - 45°
			414753-00		4000K - 16424lm - CRI 80 - 55°



Optics: in high efficiency PMMA.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
211	2200K - 22440lm - 45°
284	2200K - 22282lm - 45°
211	2200K - 33466lm - 55°
284	2200K - 29709lm - 55°

Upon request: special version (with *conformal coating* treatment with **subcode -38**) featuring high chemical resistance for environments with high chlorine content.

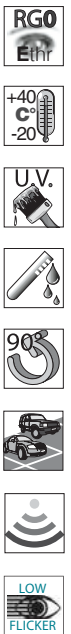
1887 Rodio HP - asymmetric					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI - gradi
LED	graphite	8.00	414758-00	211	4000K - 25500lm - CRI 80 - 45°
			414761-00		4000K - 25320lm - CRI 80 - 55°
LED	graphite	9.60	414759-00	284	4000K - 34620lm - CRI 80 - 45°
			414762-00		4000K - 33760lm - CRI 80 - 55°

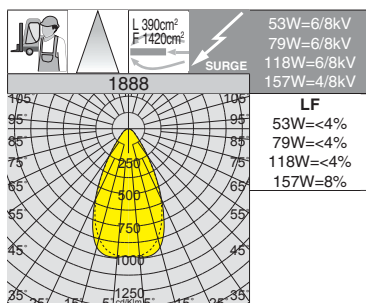


Upon request: version with special **AMBER** colour LED sources for wine processing and storage facilities.

AMBER LED light spectrum with no blue or violet wavelengths.

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

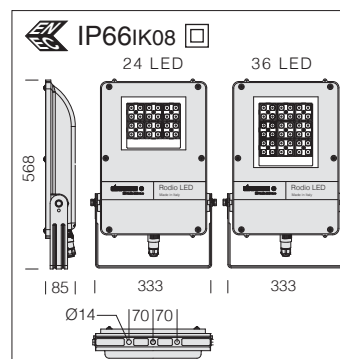




2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
53	2200K - 6010lm
79	2200K - 8054lm
118	2200K - 11759lm
157	2200K - 14727lm

1888 Rodio - symmetric narrow beam					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	graphite	6.30	414764-00	53	4000K - 6830lm - CRI 80
			414765-00	79	4000K - 9152lm - CRI 80
			414766-00	118	4000K - 13362lm - CRI 80
			414767-00	157	4000K - 16735lm - CRI 80

80.000h

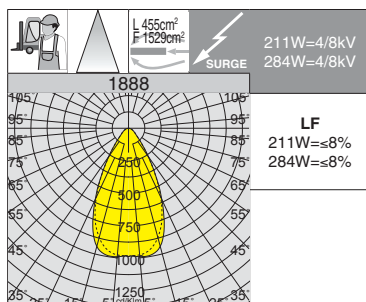


Optics: in high efficiency PMMA.

LED: Power factor: $\geq 0,9$.

Luminous flux maintenance 80%: 80.000h (L80B20).

Upon request: special version (with conformal coating treatment with subcode -38) featuring high chemical resistance for environments with high chlorine content.

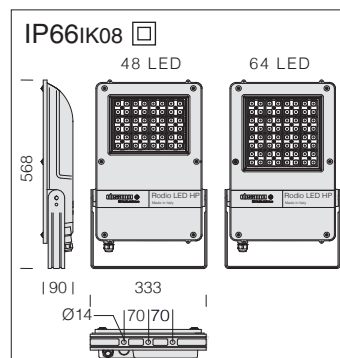


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
211	2200K - 22264lm
284	2200K - 30972lm

1888 Rodio HP - symmetric narrow beam					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI
LED	graphite	8.00	414768-00	211	4000K - 25300lm - CRI 80
		9.60	414769-00	284	4000K - 35195lm - CRI 80

80.000h

HP

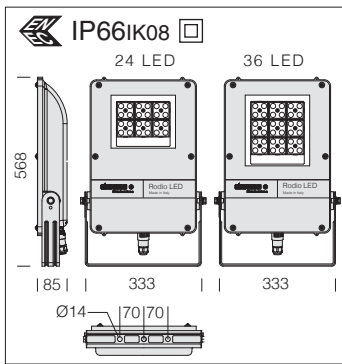


Optics: in high efficiency PMMA.

LED: Power factor: $\geq 0,9$.

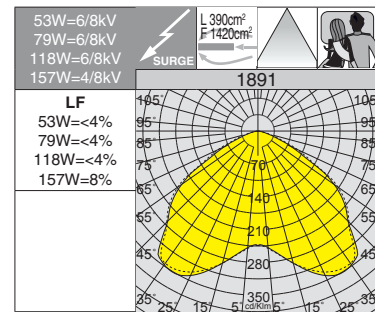
Luminous flux maintenance 80%: 80.000h (L80B20).

Upon request: special version (with conformal coating treatment with subcode -38) featuring high chemical resistance for environments with high chlorine content.



Optics: in high efficiency PMMA.

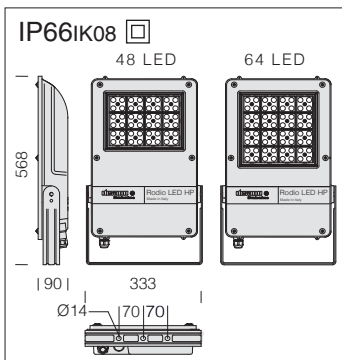
LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
53	2200K - 5931lm
79	2200K - 7948lm
118	2200K - 11605lm
157	2200K - 14534lm

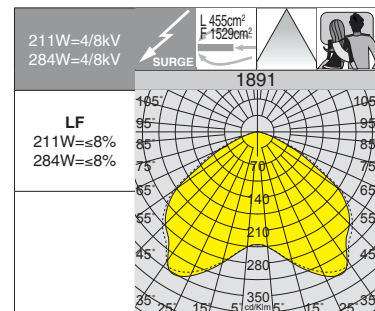
Upon request: special version (with conformal coating treatment with subcode -38) featuring high chemical resistance for environments with high chlorine content.

1891 Rodio - symmetric wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.30	414784-00	53	4000K - 6740lm - CRI 80
			414785-00	79	4000K - 9032lm - CRI 80
			414786-00	118	4000K - 13188lm - CRI 80
			414787-00	157	4000K - 16516lm - CRI 80



Optics: in high efficiency PMMA.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

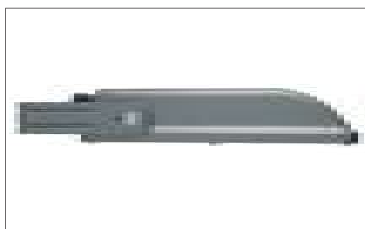
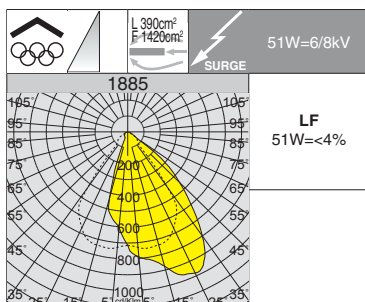


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
211	2200K - 22783lm
284	2200K - 30422lm

Upon request: special version (with conformal coating treatment with subcode -38) featuring high chemical resistance for environments with high chlorine content.

1891 Rodio HP - symmetric wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	8.00	414788-00	211	4000K - 25890lm - CRI 80
		9.60	414789-00	284	4000K - 34570lm - CRI 80

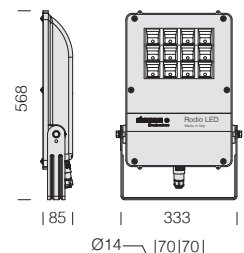




80.000h



IP66IK08

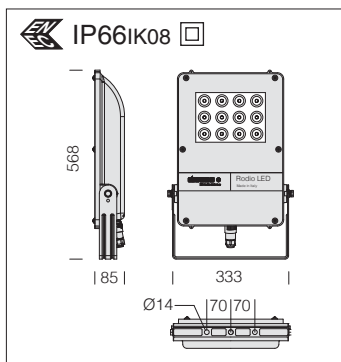


Optics: made in polycarbonate with high-efficiency PVD metal surface finishing.

LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

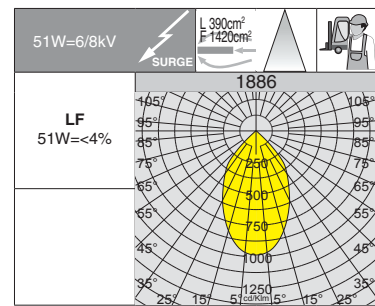
1885 Rodio HT - high temperature - asymmetric

wattage	colour	weight	CLD		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
LED	graphite	6.20	414750-00	51	4000K - 5134lm - CRI 70	

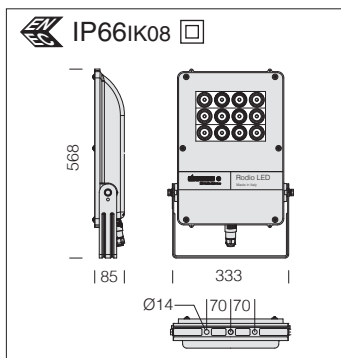


Optics: made in polycarbonate with high-efficiency PVD metal surface finishing.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

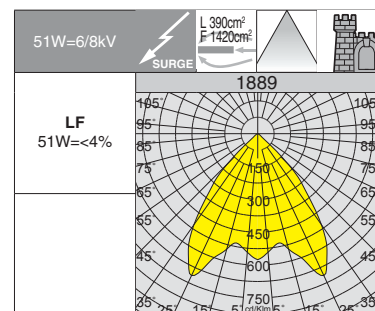


1886 Rodio HT - high temperature - symmetric narrow beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.20	414760-00	51	4000K - 5502m - CRI 70



Optics: made in polycarbonate with high-efficiency PVD metal surface finishing.

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



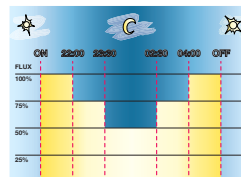
1889 Rodio HT - high temperature - symmetric wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.20	414780-00	51	4000K - 5781lm - CRI 70





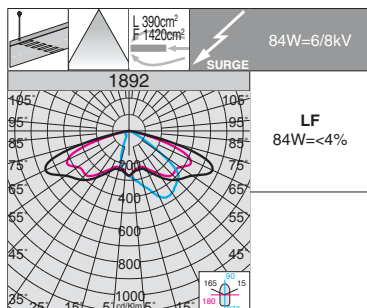
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

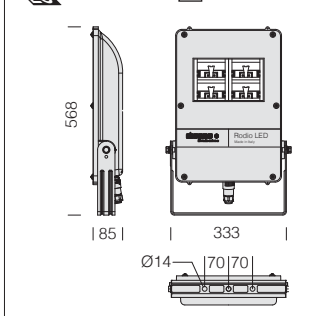
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.



100.000h



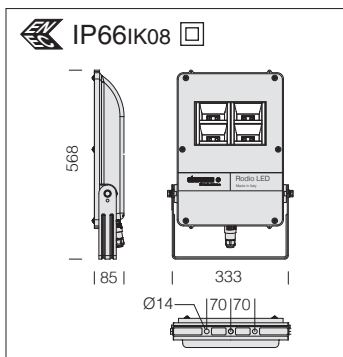
IP66IK08



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 90%
100.000h (L90B10).

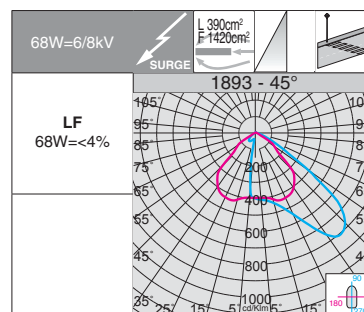
1892 Rodio - wide beam					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.20	414770-00	84	4000K - 9657lm - CRI 70
			414770-30		
Version with virtual midnight (with sub-code -30): autonomous system with flux reduction.					



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

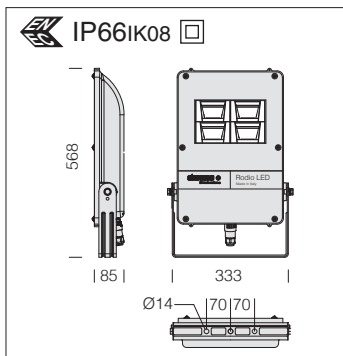
Equipment: complete with insulation connector for quick installation with **no need to open the fixture**.

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 90%
100.000h (L90B10).



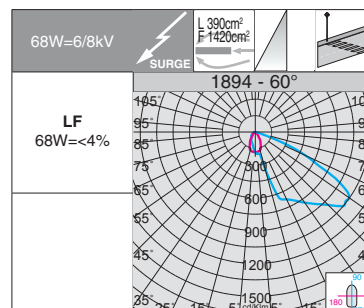
1893 Rodio - asymmetric 45°					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	graphite	6.20	414772-00	68	4000K - 7600lm - CRI 70 - 45°
			414772-30		

Version with **virtual midnight** (with sub-code **-30**): autonomous system with flux reduction.



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 90%
100.000h (L90B10).



1894 Rodio - asymmetric 60°					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	graphite	6.20	414773-00	68	4000K - 6375lm - CRI 70 - 60°
			414773-30		

Version with **virtual midnight** (with sub-code **-30**): autonomous system with flux reduction.



Acc. 333



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium, EN-AB 47100 alloy and designed with a very small surface exposed to wind. Cooling fins integrated in the cover. Once removed, the cover allows accessing the electric gear compartment.

Optics: high-performance, anti-yellowing PMMA secondary lenses.

Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



Product with a very low flicker; uniform light for greater eye protection.

OTHER CHARACTERISTICS



Standard supply: complete with galvanised and coated bracket with graduated scale goniometer which allows for accurate pointing; external screws and bolts in stainless steel; air recirculation valve. Airtight connector for quick installation with **no need to open the fixture**.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

OTHER INFORMATION



Precision optics that allow broad design flexibility guaranteeing high levels of light quality.



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

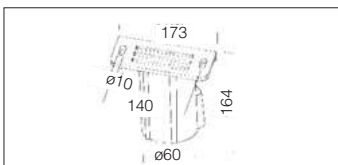


Version **DIMM 1-10V**, dimmable from 10% to 100% with **subcode -12**.



Version **CLD D-D (DALI)** wiring with **subcode -0041**: thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

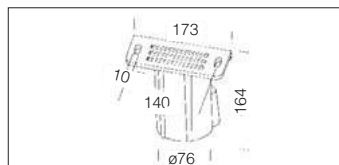
ACCESSORIES



acc. 333 ø60 pole mounting

graphite 997915-00

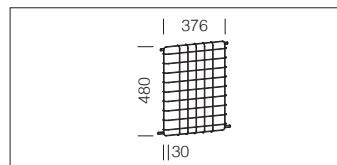
Made of aluminium. To be used to apply the fixture on a ø 60 pole.



acc. 334 ø76 pole mounting

graphite 997916-00

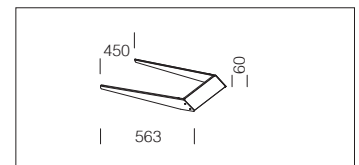
Made of aluminium. To be used to apply the fixture on a ø 76 pole.



acc. 462 protection guard

black 997933-00

Plastic-coated steel rod. For protection against impact.

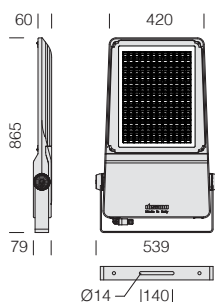


acc. 463 conveyor

graphite 997934-00

To be used for conveying the light beam in a single direction.

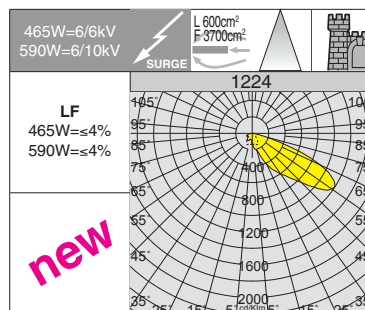
IP66IK09



LED: power factor ≥ 0.92 .
Luminous flux maintenance:

80%	100.000h (L80B10)
90%	50.000h (L90B10)

100.000h



Upon request: (subcode -39)

LED	3000K - CRI 70
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Upon request:

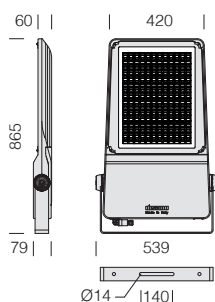
LED	5700K - CRI 70	(subcode -0035)
LED	5700K - CRI 90	(subcode -0034)

1224 Cromo - asymmetric narrow beam

wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI - degrees
LED	graphite	16.00	411000-00	465	4000K - 60672lm - CRI 70
		17.00	411001-00	590	4000K - 73868lm - CRI 70



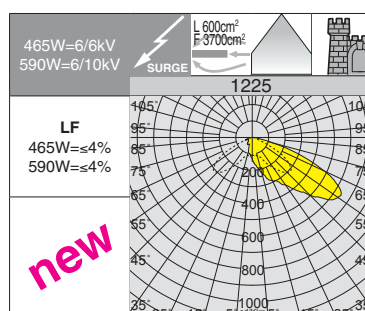
IP66IK09



LED: power factor ≥ 0.92 .
Luminous flux maintenance:

80%	100.000h (L80B10)
90%	50.000h (L90B10)

100.000h



Upon request: (subcode -39)

LED	3000K - CRI 70
-----	----------------

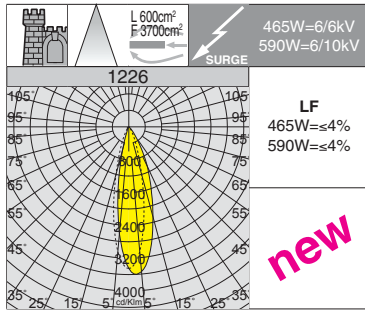
Upon request:

LED	5700K - CRI 70	(subcode -0035)
LED	5700K - CRI 90	(subcode -0034)

1225 Cromo - asymmetric wide beam

wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI - degrees
LED	graphite	16.00	411010-00	465	4000K - 62208lm - CRI 70
		17.00	411011-00	590	4000K - 75738lm - CRI 70





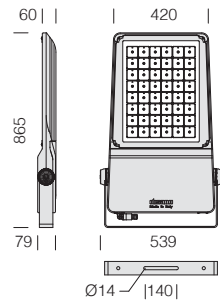
Upon request: (subcode -39)	
LED	3000K - CRI 70

Upon request:	
LED	5700K - CRI 70 (subcode -0035)
LED	5700K - CRI 90 (subcode -0034)



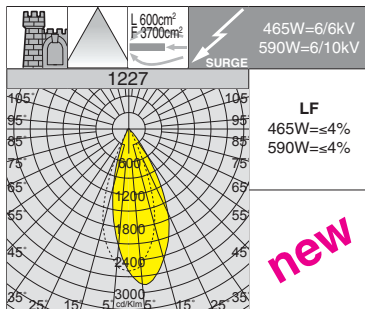
1226 Cromo - symmetric "MS"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	graphite	16.00	411020-00	465	4000K - 66144lm - CRI 70 - 20°
		17.00	411021-00	590	4000K - 80534lm - CRI 70 - 20°

IP66IK09



LED: power factor ≥0,92.
Luminous flux maintenance:

80%	100.000h (L80B10)
90%	50.000h (L90B10)



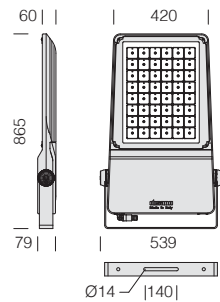
Upon request: (subcode -39)	
LED	3000K - CRI 70

Upon request:	
LED	5700K - CRI 70 (subcode -0035)
LED	5700K - CRI 90 (subcode -0034)



1227 Cromo - symmetric "M"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI - degrees
LED	graphite	16.00	411030-00	465	4000K - 66908lm - CRI 70 - 40°
		17.00	411031-00	590	4000K - 81460lm - CRI 70 - 40°

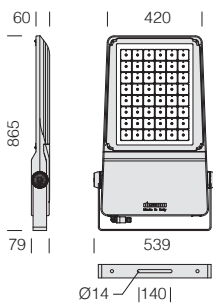
IP66IK09



LED: power factor ≥0,92.
Luminous flux maintenance:

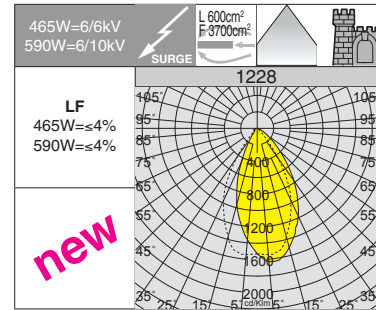
80%	100.000h (L80B10)
90%	50.000h (L90B10)

IP66IK09



LED: power factor ≥ 0.92 .
Luminous flux maintenance:

80%	100.000h (L80B10)
90%	50.000h (L90B10)



Upon request: (subcode -39)

LED	3000K - CRI 70
-----	----------------

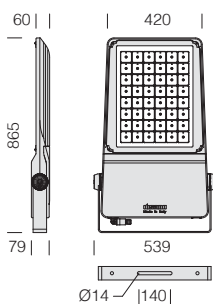
Upon request:

LED	5700K - CRI 70	(subcode -0035)
LED	5700K - CRI 90	(subcode -0034)

1228 Cromo - symmetric "W"

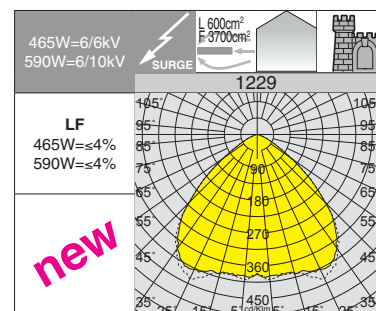
wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI - degrees
LED	graphite	16.00	411050-00	465	4000K - 67668lm - CRI 70 - 60°
		17.00	411051-00	590	4000K - 82385lm - CRI 70 - 60°

IP66IK09



LED: power factor ≥ 0.92 .
Luminous flux maintenance:

80%	100.000h (L80B10)
90%	50.000h (L90B10)



Upon request: (subcode -39)

LED	3000K - CRI 70
-----	----------------

Upon request:

LED	5700K - CRI 70	(subcode -0035)
LED	5700K - CRI 90	(subcode -0034)

1229 Cromo - symmetric "XW"

wattage	colour	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		K - ølm - CRI - degrees
LED	graphite	16.00	411060-00	465	4000K - 65180lm - CRI 70 - 110°
		17.00	411061-00	590	4000K - 77703lm - CRI 70 - 110°





GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Optics: made of PMMA with high temperature resistance and UV rays.

Diffuser: 4mm thick tempered glass, resistant to thermal shocks and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

OTHER CHARACTERISTICS



Standard supply: mounting bracket and graduated scale goniometer which allows for accurate pointing. Silicone rubber gasket; external screws and bolts in stainless steel; air recirculation valve and insulation connector.



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Registered Design **DM/100271**

The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.



Energy saving:

Saturno can save more energy compared to conventional discharge lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



Version **CLD D-D** (DALI) wiring with **sub-code -0041**: thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



Versions with different photometric distributions (see chapter *Suspension*)

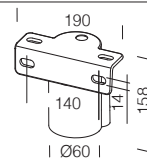
ACCESSORIES



For Saturno Ø320.

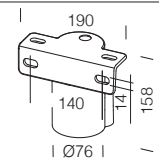


For Saturno Ø400.



acc. 235 ø60 pole mounting

graphite	997927-00
Made of aluminium. To be used to apply the fixture on a ø 60 pole.	



acc. 236 ø76 pole mounting

graphite	997926-00
Made of aluminium. To be used to apply the fixture on a ø 76 pole.	

acc. 26 protection guard

995697-00

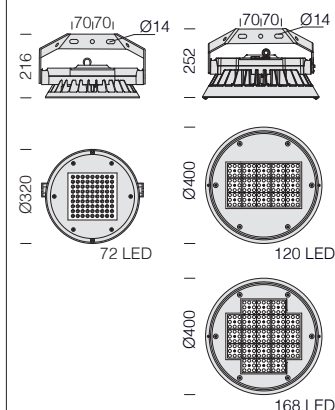
Graphite plastic-coated steel rod protection guard. Screw mounting.

acc. 26 protection guard

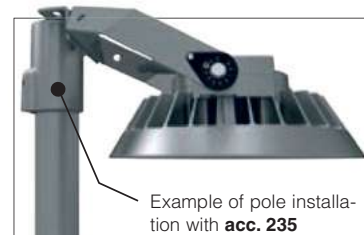
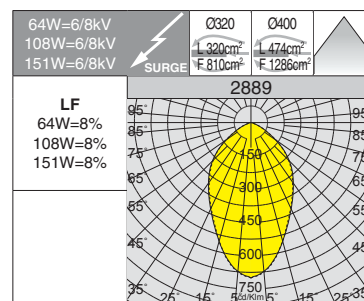
995698-00

Graphite plastic-coated steel rod protection guard. Screw mounting.

IP66IK08 Registered Design DM/100271

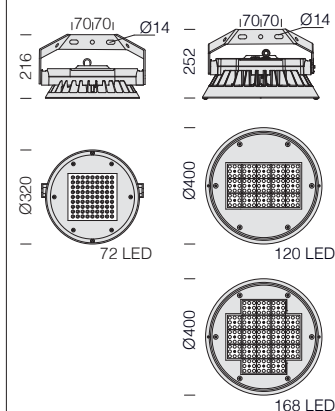


LED: Luminous flux maintenance 80%: 80.000h (L80B10).
Power factor ≥ 0.95 .

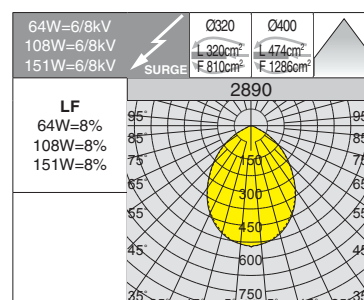


2889 Saturno - narrow beam						
				CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	Ø	code	W tot	K - ølm - CRI
LED	graphite	8.00	320	330870-00	64	4000K - 8427lm - CRI 80
				330871-00	108	4000K - 14045lm - CRI 80
LED	graphite	9.00	400	330872-00	151	4000K - 19664lm - CRI 80

IP66IK08 Registered Design DM/100271



LED: Luminous flux maintenance 80%: 80.000h (L80B10).
Power factor ≥ 0.95 .



2890 Saturno - wide beam						
				CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	Ø	code	W tot	K - ølm - CRI
LED	graphite	8.00	320	330890-00	64	4000K - 8435lm - CRI 80
				330891-00	108	4000K - 14058lm - CRI 80
LED	graphite	9.00	400	330892-00	151	4000K - 19683lm - CRI 80



GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins integrated into the cover and designed with a very small surface exposed to wind.

Optics: made of PMMA with high temperature resistance and UV rays.

Diffuser: tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard supply: automatic temperature control inside the device with automatic resetting (except for versions with separate gear box).



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

OTHER CHARACTERISTICS

LED: Power factor ≥ 0.95 .

Luminous flux maintenance		
90%	100.000h (L90B10)	12-16-24-28 LED
90%	80.000h (L90B10)	32-36 LED

Luminous flux maintenance Astro HP-HE		
90%	50.000h (L90B10)	36-60-72 LED



Complete with mounting bracket and graduated scale goniometer which allows for accurate pointing. The fixture is equipped with anti-condensation valve for air recirculation and IP68 connector for line connection with **no need to open the fixture**.

The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.



ATEX version: fixtures can be installed outdoors or indoors, in industrial areas, cantilever roofs, environments at risk of fire, and in any other premise compatibly with the fumes and atmospheric or chemical agents which affect the use of plastic materials: check compatibility with corrosive agents.

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).

UNI EN ISO 9227



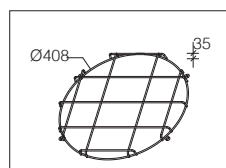
Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments



Available version with **LED 5700K - CRI 90** with **subcode -0034**.



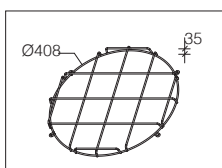
ACCESSORIES



**acc. 24
protection guard**

995776-00

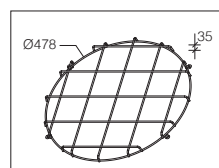
Graphite plastic-coated steel rod protection guard. Screw mounting. For Astro 12 LED.



**acc. 24
protection guard**

995773-00

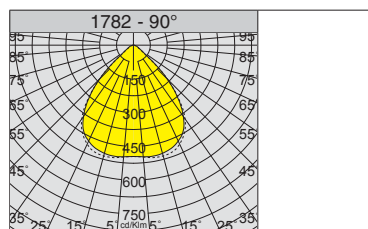
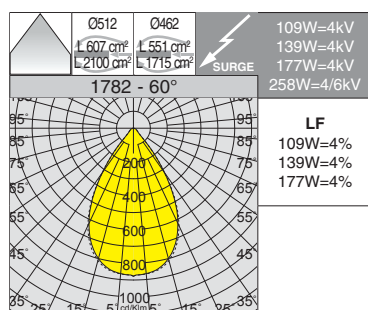
Graphite plastic-coated steel rod protection guard. Screw mounting. For Astro 16-24 LED and HP/HE 36-60 LED.



**acc. 24
protection guard**

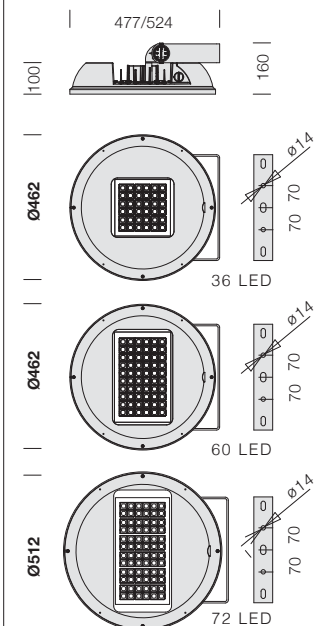
995771-00

Graphite plastic-coated steel rod protection guard. Screw mounting. For Astro 28-32-36 and HP/HE 72 LED.

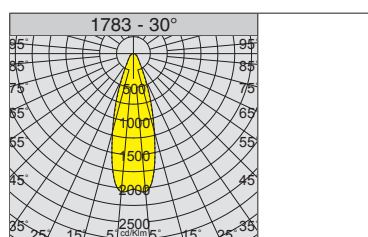
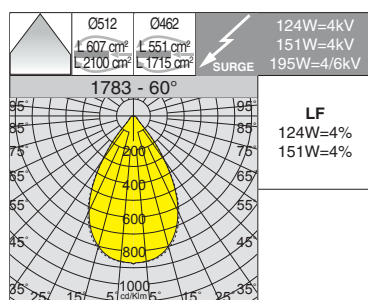


1782 Astro HP - high performance						
wattage	colour	weight	Ø	CLD	LUMEN OUTPUT (tq= 25 °C)	
				code	W tot	K - ølm - CRI - degrees
LED	graphite	13.80	462	320000-00	109	4000K - 15131lm - CRI 80 - 60°
				320001-00	139	4000K - 17816lm - CRI 80 - 60°
				320002-00	177	4000K - 23236lm - CRI 80 - 60°
LED	graphite	14.00	512	320003-00	258	4000K - 34987lm - CRI 80 - 60°
LED	graphite	14.00	512	320004-00	258	4000K - 33295lm - CRI 80 - 30°
				320005-00		4000K - 34601lm - CRI 80 - 90°

IP66IK08

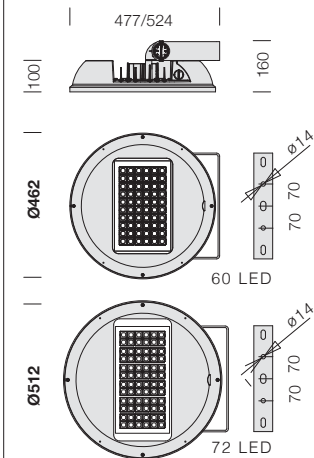


LED: Luminous flux maintenance 90%: 50.000h (L90B10).
Power factor ≥0.95.

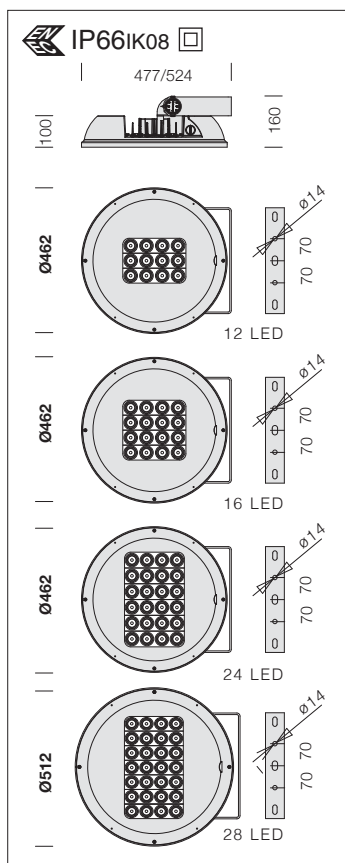


1783 Astro HE - high efficiency						
wattage	colour	weight	Ø	CLD	LUMEN OUTPUT (tq= 25 °C)	
				code	W tot	K - ølm - CRI - degrees
LED	graphite	13.80	462	320010-00	124	4000K - 18135lm - CRI 80 - 60°
				320011-00	151	4000K - 22236lm - CRI 80 - 60°
LED	graphite	14.00	512	320012-00	195	4000K - 27488lm - CRI 80 - 60°
LED	graphite	14.00	512	320014-00	195	4000K - 26159lm - CRI 80 - 30°
				320015-00		4000K - 27195lm - CRI 80 - 90°

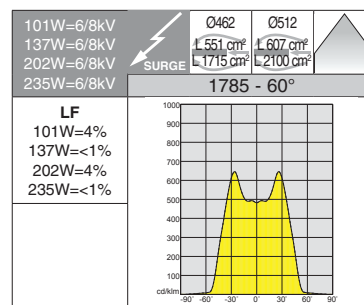
IP66IK08



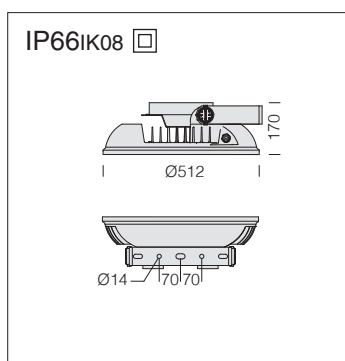
LED: Luminous flux maintenance 90%: 50.000h (L90B10).
Power factor ≥0.95.



100.000h
L90B10

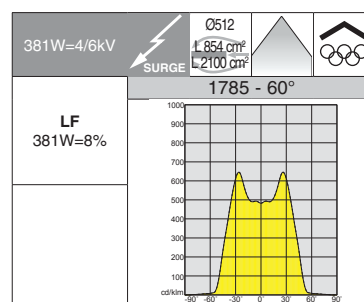


1785 Astro - symmetric 60°						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	Ø	code	W tot	K - ølm 700mA - CRI - degrees
LED	grey	12.25	462	330059-00	101	4000K - 11068lm - CRI 70 - 60°
	graphite			330058-00		
LED	grey	12.25	462	330054-00	137	4000K - 14758lm - CRI 70 - 60°
	graphite			330055-00		
LED	grey	13.80	462	330050-00	202	4000K - 23244lm - CRI 70 - 60°
	graphite			330052-00		
LED	grey	14.00	512	330051-00	235	4000K - 26357lm - CRI 70 - 60°
	graphite			330053-00		



LED: Luminous flux maintenance
90%: 100.000h (L90B10).
Power factor ≥0.95.

100.000h
L90B10

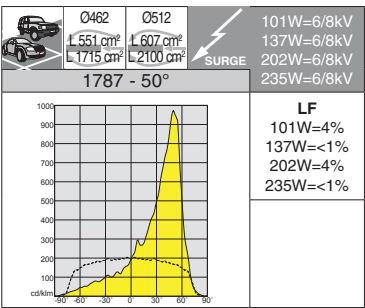


Upon request: orientable bracket

1785 Astro - symmetric 60°						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	Ø	code	W tot	K - ølm 1050mA - CRI - degrees
LED	grey	17.20	512	330056-00	381	4000K - 37259lm - CRI 70 - 60°
	graphite			330057-00		

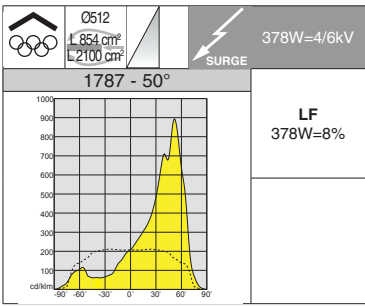
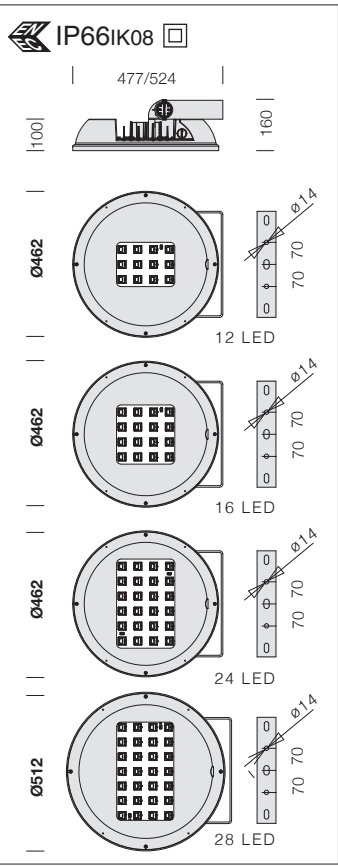
Version with separate gear box.





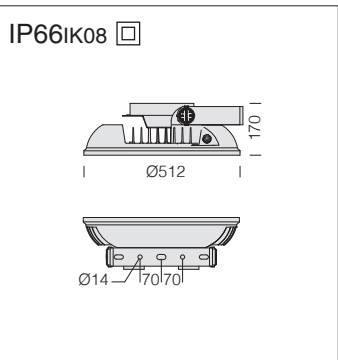
Upon request: (subcode -0034)	
LED	5700K - CRI 90

1787 Astro - asymmetric 50°					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	Ø	code	K - ølm 700mA - CRI - degrees
LED	grey	12.25	462	330079-00	4000K - 9732lm - CRI 70 - 50°
	graphite			330078-00	
LED	grey	12.25	462	330074-00	4000K - 12976lm - CRI 70 - 50°
	graphite			330075-00	
LED	grey	13.80	462	330070-00	4000K - 20438lm - CRI 70 - 50°
	graphite			330072-00	
LED	grey	14.00	512	330071-00	4000K - 25953lm - CRI 70 - 50°
	graphite			330073-00	



Upon request: (subcode -0034)	
LED	5700K - CRI 90

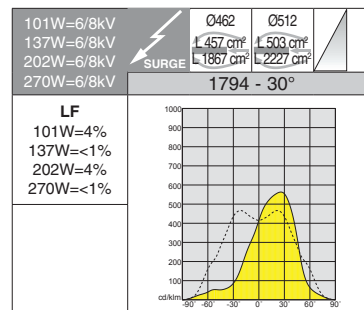
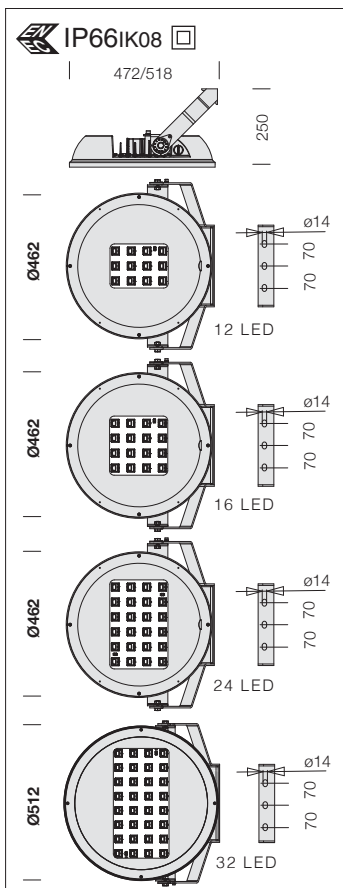
1787 Astro - asymmetric 50°					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	Ø	code	K - ølm 1050mA - CRI - degrees
LED	grey	17.20	512	330076-00	4000K - 36000lm - CRI 70 - 50°
	graphite			330077-00	



LED: Luminous flux maintenance 90%: 100.000h (L90B10). Power factor ≥0.95.



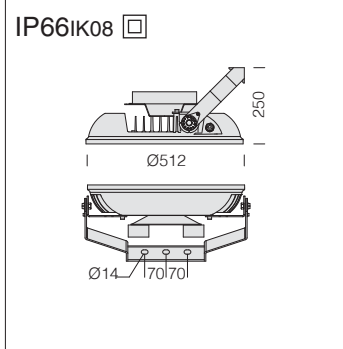
Upon request: orientable bracket



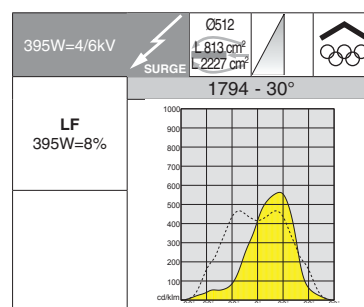
Upon request: (subcode -0034)	
LED	5700K - CRI 90

1794 Astro - asymmetric 30°						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	Ø	code	W tot	K - ølm 700mA - CRI - degrees
LED	grey	13.70	462	330129-00	101	4000K - 9150lm - CRI 70 - 30°
	graphite			330128-00		
LED	grey	13.70	462	330124-00	137	4000K - 12101lm - CRI 70 - 30°
	graphite			330125-00		
LED	grey	14.90	462	330120-00	202	4000K - 18152lm - CRI 70 - 30°
	graphite			330122-00		
LED *	grey	15.10	512	330121-00	270	4000K - 24203lm - CRI 70 - 30°
	graphite			330123-00		

* 32 LED version with luminous flux maintenance 90%: 80.000h (L90B10).



LED: Luminous flux maintenance 90%: 80.000h (L90B10).
Power factor ≥0.95.



Upon request: (subcode -0034)	
LED	5700K - CRI 90

1794 Astro - asymmetric 30°						
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage (900mA)	colour	weight	Ø	code	W tot	K - ølm 900mA - CRI - degrees
LED	grey	18.10	512	330126-00	395	4000K - 29493lm - CRI 70 - 30°
	graphite			330127-00		

Version with separate gear box.



Equipment level protection (EPL)

ZONE	EPL
0	"Ga"
1	"Ga" o "Gb"
2	"Ga", "Gb" o "Gc"
20	"Da"
21	"Da" o "Db"
22	"Da", "Db" o "Dc"

Hazardous places according to Legislative Decree 233/03

Business	Places
chemical and petrochemical industry	gas-fuelled heating plants with P>35Kw
pharmaceutics industry	garages, repair shops, body shops
metal processing	fuel distribution
food industry (storage and processing of cereals, flour and sugar)	bread baking ovens
processing of wood	places where painting processes occur
fabric and spinning industry	distilleries, production of alcoholic beverages

ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE GAS:

Ex =	Electrical system built and tested for utilization in an atmosphere filled with explosive gasses.
nA =	The electrical system does not produce sparks when operating normally.
II =	Electrical system suitable for areas with a potentially explosive atmosphere, different from mines, with firedamp.
Gc =	Enhanced protection level
T4 =	Maximum internal or external surface temperature; classification according to regulation cei en 60079-0 table 2
IP66 =	Housing entirely protected against dust and the water jets

ELECTRICAL SYSTEMS FOR AREAS CONTAINING EXPLOSIVE POWDERS:

Ex =	Electrical system built and tested for utilization in an atmosphere containing powders.
IIIC	Electrical equipment for premises with potentially explosive atmospheres due to the presence of combustible dust, other than mines with the presence of firedamp
Dc	Enhanced protection level
tc	Protection against explosive atmospheres due to the presence of dust where the electrical equipment is equipped with an enclosure
22 =	Permitted hazardous area.
IP6X =	Housing entirely protected against dust
T 135°C =	Maximum temperature in a dust-free environment

SELECTION OF ELECTRICAL SYSTEMS
IN RELATION TO HAZARDOUS AREAS

HAZARDOUS AREA	CLASSIFICATION	EPL	PROTECTIONS PERMITTED
	0	Ga	"ia" Intrinsic safety "ma" Encapsulation Two independent EPLs "Gb"
ATMOSPHERE CONTAINING GAS	1	Gb	"d" Explosion proof "e" Increased safety "ib" Intrinsic safety "m" "mb" Encapsulation "o" Oil immersion "p, px, py" Pressurisation "q" Powder filling Field bus intrinsically safe concept (FISCO) Optical radiation safety
	2	Gc	"ic" Intrinsic safety "mc" Encapsulation "n, nA" Non sparking "nR" Restricted breathing "nL" Energy limitation "nC" Sparking device and components "pz" Pressurisation Field bus non-incendive concept Optical radiation safety
ATMOSPHERE CONTAINING GAS	20	Da	"Da" "Id" Intrinsic safety "md" Encapsulation "tD" Protection by enclosure
	21	Db	"iD" Intrinsic safety "mD" Encapsulation "tD" Protection by enclosure "pD" Pressurisation
	22	Dc	"iD" Intrinsic safety "mD" Encapsulation "tD" Protection by enclosure "pD" Pressurisation

RELEVANT REGULATIONS

Directive 94/9/CE entrusts conformed European regulations with the task of setting out basic technical requirements to guarantee safety in explosion-prone areas, replacing contrasting national and European regulations belonging to the same sector.

IEC 60079-0	Electrical systems for potentially explosive atmospheres GENERAL REGULATIONS
IEC 60079-15	Electrical systems for potentially explosive atmospheres. PROTECTION METHOD "n"
IEC 60079-10-1	Explosive atmospheres Classification of hazardous locations. Explosive atmospheres due to the presence of gas
IEC 60079-14	Explosive atmospheres Design, selection and installation of electrical equipment
IEC 60079-10-2	Explosive atmospheres Classification of hazardous locations. Explosive atmospheres due to the presence of dust
IEC 60079-31	Explosive atmospheres Fixtures with protection by "t" enclosure for use in the presence of combustible dust
IEC 60079-28	Explosive atmospheres Protection of equipment and transmission systems using optical radiation



GENERAL CHARACTERISTICS

Housing: in extruded aluminium with terminal ends in die-cast aluminium.

Reflector: in matt aluminium, high efficiency and anti-glare.

Diffuser: 4 mm thick temperate glass resistant to thermal shock and impacts (UNI EN 12150-1:2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage of UV-stabilised, corrosion and salt resistant polyester powder coating

Equipment: complete with galvanised and coated bracket. Silicone rubber gasket; external screws and bolts in stainless steel; air recirculation valve. Airtight connector for quick installation with **no need to open the fixture.**

Wiring: 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Product with a very low flicker; uniform light for greater eye protection.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with

EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

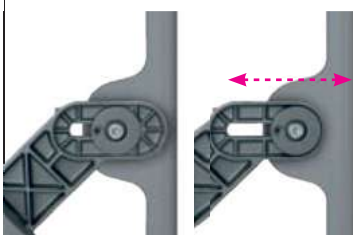
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.



Structure 2 LED modules : in painted steel with bracket for spot-light mounting. It also allows pointing the individual module at an angle of $\pm 20^\circ$ to its horizontal axis (Tilting angle of 5°).

OTHER INFORMATION



HP version with bracket in die-cast aluminium made to move along the horizontal axis to give greater light pointing freedom.



Junction box for terminals in die-cast aluminium on the support bracket

UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments



Version **CLD D-D** (DALI) wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.

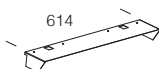


ACCESSORIES FOR RADON 1/2 MODULES

acc. 384 conveyor

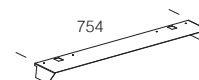
4/8 COB	995794-00
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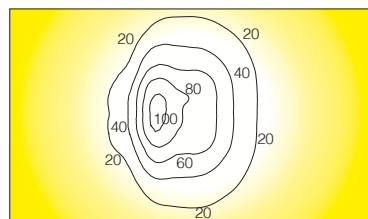
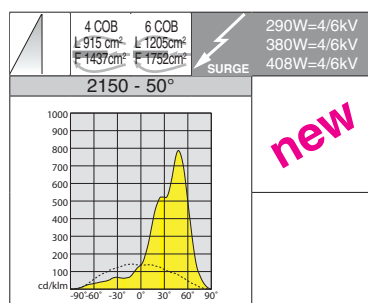
In aluminium, graphite. To be used for conveying the light beam in a single direction.

**acc. 384 conveyor**

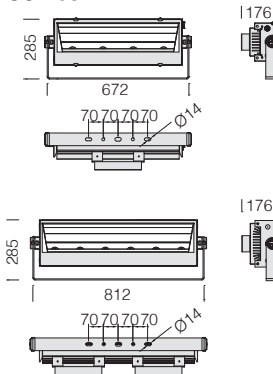
6 COB	995795-00
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In aluminium, graphite. To be used for conveying the light beam in a single direction.





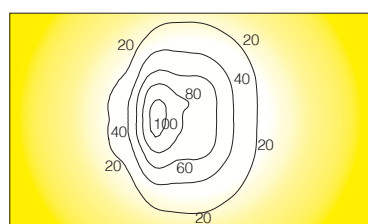
IP66IK08



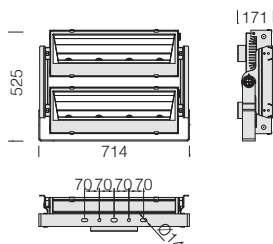
LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥ 0.95 .

2150 Radon HE - 1 LED MODULE - asymmetric

wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI - degrees
LED COB	graphite	9.00	672	413300-00	290	4000K - 41040lm - CRI \geq 70 - 50°
LED COB	graphite	10.00	812	413301-00	380	4000K - 55230lm - CRI \geq 70 - 50°
				413302-00	408	4000K - 60715lm - CRI \geq 70 - 50°



IP66IK08

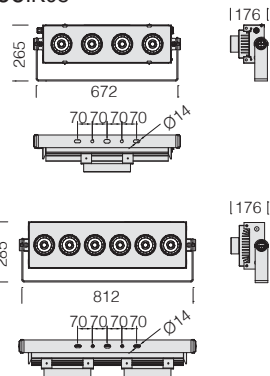


LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥ 0.95 .

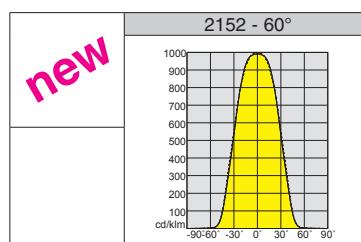
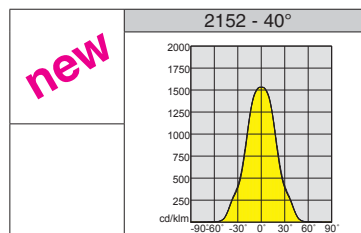
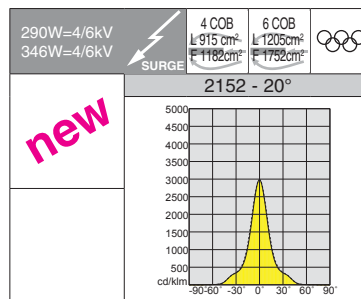
2151 Radon HE - 2 LED MODULES - asymmetric

wattage	colour	weight	code	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
				code		K - ølm - CRI - degrees
LED COB	graphite	22.00	413310-00		484	4000K - 71132lm - CRI \geq 70 - 50°
			413311-00		580	4000K - 82500lm - CRI \geq 70 - 50°

IP66IK08

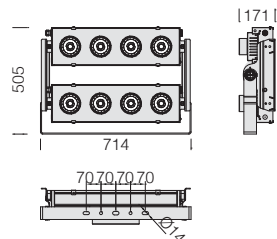


LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.95 .

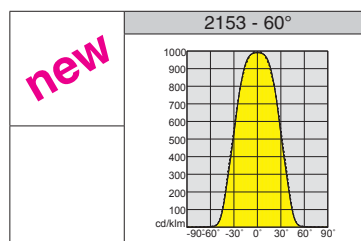
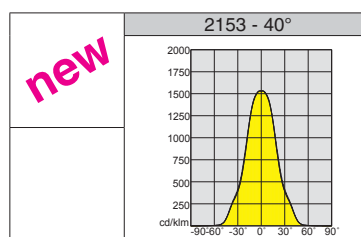
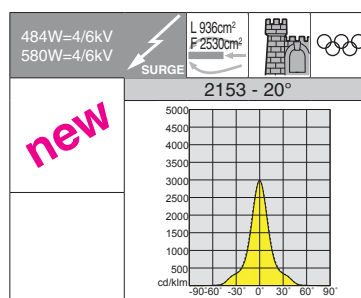


2152 Radon HE - 1 LED MODULE - symmetric						
wattage	colour	weight	L	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	graphite	9.00	672	code	290	K - ølm - CRI - degrees
				413320-00		4000K - 43660lm - CRI \geq 70 - 20°
				413321-00		4000K - 43778lm - CRI \geq 70 - 40°
LED COB	graphite	10.00	812	413322-00	346	4000K - 43540lm - CRI \geq 70 - 60°
				413323-00		4000K - 54194lm - CRI \geq 70 - 20°
				413324-00		4000K - 54304lm - CRI \geq 70 - 40°
				413325-00		4000K - 54064lm - CRI \geq 70 - 60°

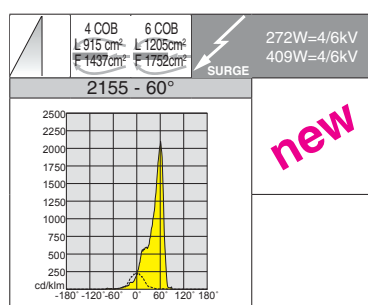
IP66IK08



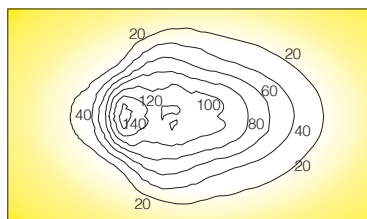
LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.95 .



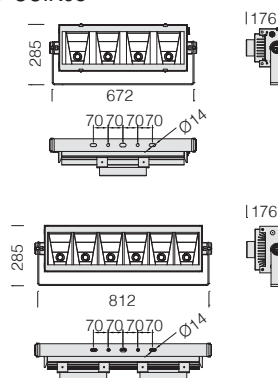
2153 Radon HE - 2 LED MODULES - symmetric						
wattage	colour	weight	code	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	graphite	22.00	413330-00	484	484	K - ølm - CRI - degrees
			413331-00			4000K - 73791lm - CRI \geq 70 - 20°
			413332-00			4000K - 74011lm - CRI \geq 70 - 40°
LED COB	graphite	22.00	413333-00	580	580	4000K - 73451lm - CRI \geq 70 - 60°
			413334-00			4000K - 85630lm - CRI \geq 70 - 20°
			413335-00			4000K - 85840lm - CRI \geq 70 - 40°
						4000K - 85280lm - CRI \geq 70 - 60°



new



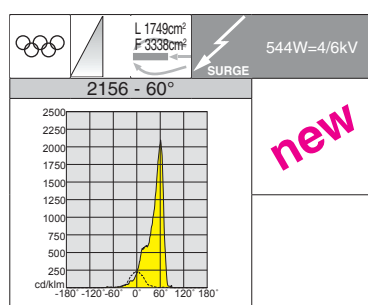
IP66IK08



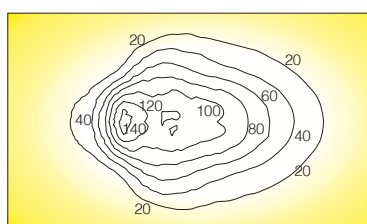
LED: Luminous flux maintenance 80%: 50.000h (L80B20).
Power factor ≥ 0.95 .

2155 Radon HP - 1 LED MODULE - asymmetric

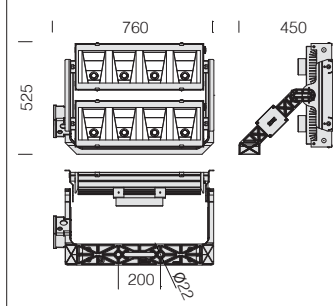
wattage	colour	weight	L	CLD	W tot	LUMEN USCENTI (tq= 25 °C)
				code		K - ølm - CRI - degrees
LED COB	graphite	9.00	660	413390-00	272	4000K - 41280lm - CRI \geq 70 - 60°
		10.00	812	413391-00	409	4000K - 64254lm - CRI \geq 70 - 60°



new



IP66IK08

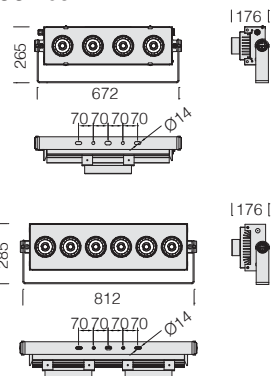


LED: Luminous flux maintenance 80%: 50.000h (L80B20).
Power factor ≥ 0.95 .

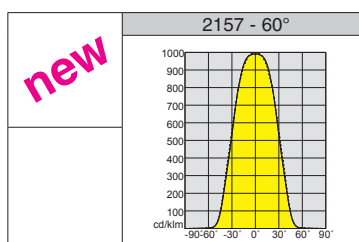
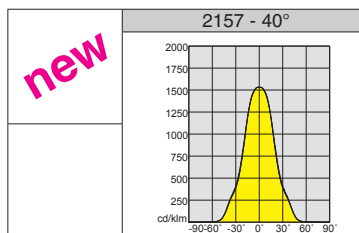
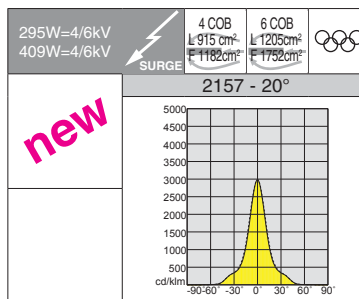
2156 Radon HP - 2 LED MODULES - asymmetric

wattage	colour	weight	code	CLD	W tot	LUMEN USCENTI (tq= 25 °C)
				code		K - ølm - CRI - degrees
LED COB	graphite	20.00	413360-00		544	4000K - 82560lm - CRI \geq 70 - 60°

IP66IK08

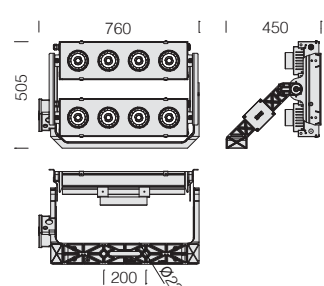


LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.95 .

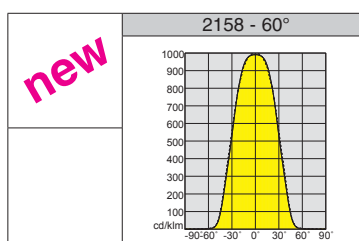
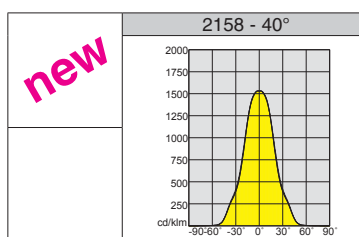
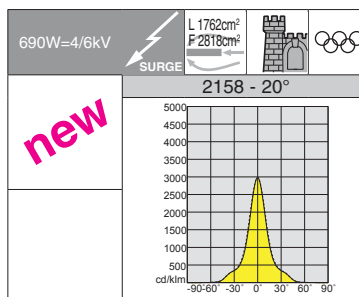


2157 Radon HP - 1 LED MODULE - symmetric						
wattage	colour	weight	L	CLD	W tot	LUMEN USCENTI (tq= 25 °C)
LED COB	graphite	9.00	672	code	295	K - ølm - CRI - degrees
				413370-00		4000K - 47170lm - CRI ≥ 70 - 20°
				413371-00		4000K - 47283lm - CRI ≥ 70 - 40°
LED COB	graphite	10.00	812	413372-00	409	4000K - 47050lm - CRI ≥ 70 - 60°
				413373-00		4000K - 66510lm - CRI ≥ 70 - 20°
				413374-00		4000K - 66621lm - CRI ≥ 70 - 40°
				413375-00		4000K - 66341lm - CRI ≥ 70 - 60°

IP66IK08



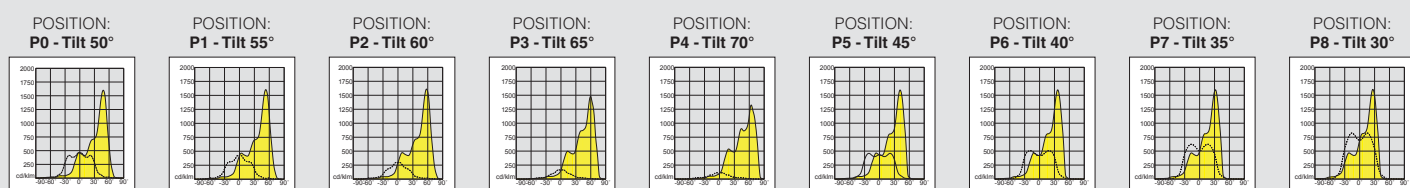
LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.95 .



2158 Radon HP - 2 LED MODULES - symmetric						
wattage	colour	weight	code	CLD	W tot	LUMEN USCENTI (tq= 25 °C)
LED COB	graphite	20.00	413480-00	590		K - ølm - CRI - degrees
			413481-00			4000K - 94547lm - CRI ≥ 70 - 20°
			413482-00			4000K - 94567lm - CRI ≥ 70 - 40°
						4000K - 94020lm - CRI ≥ 70 - 60°



Flexibility - The optical system comprising modules that can be adjusted into 8 positions (with a 5° tilt angle) provides different asymmetric angles for the best lighting solutions without tilting the spotlight.



Luminous flux maintenance Power factor ≥0.95		Wattage (tot.)	Allowed ambient temperature (min.°C ÷ max.°C)
Forum 1 HE (art. 2177-2188-2189)			
80%	90.000h (L80B10)	368W	Ta = -30°C ÷ +40°C
90%	50.000h (L90B10)		
Forum 1 (art. 2180-2181-2182-2183-2184-2185-2186-2187)			
70%	190.000h (L70B20)@700mA	256W	Ta = -40°C ÷ +45°C
70%	160.000h (L70B20)@1050mA	297W	Ta = -40°C ÷ +45°C
70%	145.000h (L70B20)@1200mA	442W	Ta = -40°C ÷ +40°C
80%	120.000h (L80B10)@700mA	256W	Ta = -40°C ÷ +45°C
80%	100.000h (L80B10)@1050mA	297W	Ta = -40°C ÷ +45°C
80%	90.000h (L80B10)@1200mA	442W	Ta = -40°C ÷ +40°C

Luminous flux maintenance Power factor ≥0.95		Wattage (W)	Allowed ambient temperature (min.°C ÷ max.°C)
Forum 2 HE (art. 2198-2199-2200)			
80%	90.000h (L80B10)	736W	Ta = -30°C ÷ +40°C
90%	50.000h (L90B10)		
Forum 2 (art. 2190-2191-2192-2193-2194-2195-2196-2197)			
70%	190.000h (L70B20)@700mA	475W	Ta = -30°C ÷ +40°C
70%	160.000h (L70B20)@1050mA	735W	Ta = -30°C ÷ +40°C
70%	145.000h (L70B20)@1200mA	846W	Ta = -30°C ÷ +40°C
80%	120.000h (L80B10)@700mA	475W	Ta = -30°C ÷ +40°C
80%	100.000h (L80B10)@1050mA	735W	Ta = -30°C ÷ +40°C
80%	90.000h (L80B10)@1200mA	846W	Ta = -30°C ÷ +40°C

The table below shows the values for standard versions. For further information (expected life, temperatures) and/or for special versions, please contact our customer service.

GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins.

Optics: made of V0 polycarbonate, metallized high yield.

Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard Supply: complete with galvanised and coated bracket. Single LED module version, equipped with IP66 airtight connector for mains connection. With dedicated electronic device to protect the LED module.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is installed on a metal pole.



Products compliant with ball impact resistance test standard DIN 18032-3: 2018

Registered Design
DM/100271

The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.

OTHER CHARACTERISTICS

The family of Forum LED floodlights includes versions with narrow, symmetric and asymmetric beam optics with different highly efficient LED sources.

A truly complete range of products offering the best performance to meet all outdoor lighting needs for:

- Buildings and façades
- Industrial zones, harbour areas, train stations and loading/unloading bays
- Public or private infrastructure, airports, metro stations, car parks and transit zones
- Stadiums or indoor and outdoor multi-sport facilities (tennis court, basketball court, swimming pool, velodrome, hockey rink, volleyball court, etc...).

• Easy and safe to install, Forum LED is equipped with special devices for perfect pointing and positioning stability.

• The careful selection of the materials and electronic components ensures full safety during operation, guaranteeing total resistance to impacts and accidental collisions, thermal shocks and weather agents.

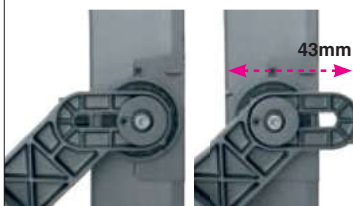
• The shape of the body allows obtaining diverse combinations of power, lumen and luminous beams; in fact, it is available in versions with single, double or triple modules, with asymmetric light distribution, narrow beam or symmetric beams.

• Precision optics that allow broad design flexibility guaranteeing high levels of light quality, eliminating flicker during TV broadcasting.

OTHER INFORMATION



Structure 2 LED modules : in die-cast aluminium with bracket for spotlight mounting. It also allows pointing the individual module at an angle of $\pm 20^\circ$ to its horizontal axis.



Luminaire bracket in die-cast aluminium made to move 43 mm along the horizontal axis to give greater light pointing freedom.



Junction box for terminals in die-cast aluminium on the support bracket

UPON REQUEST

The fixture can be equipped with several light dimmers:

- 1-10V (dimmable from 20% to 100%) or DALI dimmable driver
- power line carrier (PLC) remote control
- wireless control system



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Stand for spotlights' pointer system.

Available with set for floodlight aiming



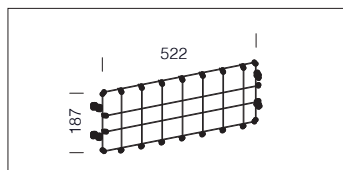
Available 1 module version with:

LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

Available 2 modules version with:

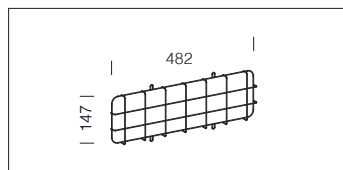
separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

ACCESSORIES FOR FORUM 1/2 MODULES

**acc. 25 protection guard**

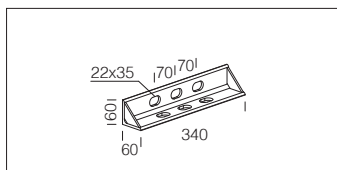
black 997930-00

Plastic-coated steel rod. For protection against impact. For Forum art. 2180-2181-2182-2183-2184-2185-HE.

**acc. 26 protection guard**

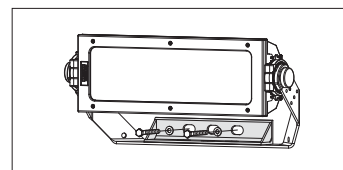
black 997931-00

Plastic-coated steel rod. For protection against impact. For Forum art. 2186-2187.

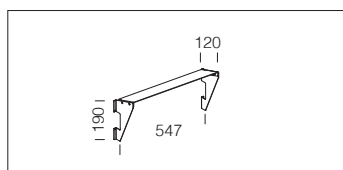
**acc. 345 wall bracket**

graphite 995772-00

To be used to install Forum 1 LED module directly onto wall surfaces.

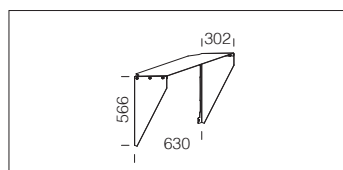


To install Forum 1 LED module to the wall, use acc. 345 and fasten the screws directly to the bracket supplied with the lamp.

**acc. 482 1 module conveyor**

graphite 995788-00

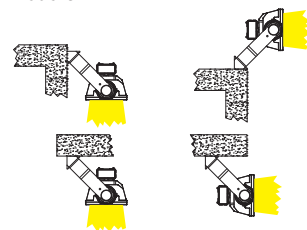
In aluminium. To be used for conveying the light beam in a single direction.

**acc. 482 2 modules conveyor**

graphite 995785-00

In aluminium. To be used for conveying the light beam in a single direction.

Example installation with special bracket option for Forum 1 LED module.



On request: Forum 1 LED module comes with a galvanized and coated bracket with right angle base plate to install the projector on both sides.



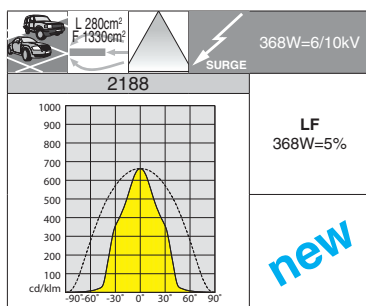
Infrastructure ... loading areas, stations and airports

Train stations, airports and large transit areas are regarded as "landmarks", i.e. well defined signs of a city's ambition and desire for renovation. This is why the design of major infrastructure is being entrusted to world-famed architects. Lighting should meet functional requirements and also enhance the challenging solutions chosen by the designers.

Lighting becomes an integral part of these public works, turning into structural elements giving them extraordinary visibility during the evenings. This new approach also applies to small train stations and roads, where proper lighting can increase safety, efficiency and energy savings and improve aesthetics.

Energy saving: the comparison shows how Forum HE can save more energy compared to conventional discharge lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.

Fixture	Kelvin - CRI	Dimensions (m)	H	LUX	Qty	P tot W	Energy saving
Forum HE	4000K - CRI 70	92,2x66,7	25	≥40	16	5888	43%
SAP 600W	2000K - CRI 20	92,2x66,7	25	≥40	16	10256	
Forum HE	4000K - CRI 70	92,2x66,7	25	≥40	16	5888	66%
SAP 1000W	2000K - CRI 20	92,2x66,7	25	≥40	16	16800	



The ideal version for large spaces (squares, stations, airports, etc.)

Upon request: (subcode -39)

LED	3000K - CRI 70
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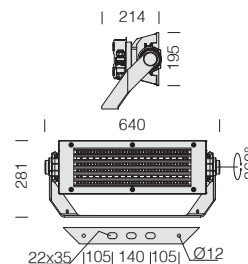
2188 Forum HE - 1 LED MODULE - symmetric - high efficiency

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - CRI
LED	graphite	15.00	412690-00	368	4000K - 57641lm - CRI 70



IP66IK08

Registered Design
DM/100271

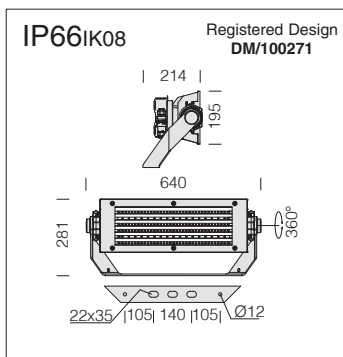


LED: power factor ≥0,92.
Luminous flux maintenance:

80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

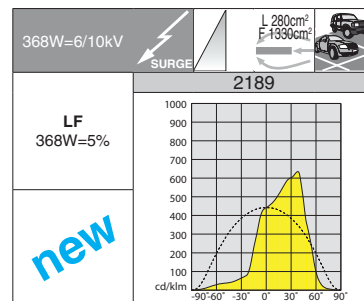
Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



LED: power factor ≥ 0.92 . Luminous flux maintenance:	
80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

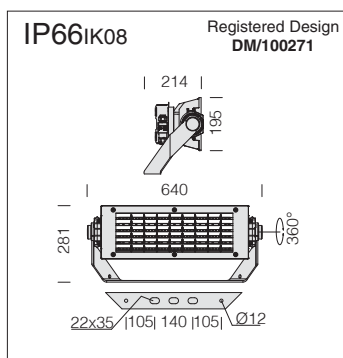
Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



The ideal version for large spaces (squares, stations, airports, etc.)

Upon request: (subcode -39)	
LED	3000K - CRI 70

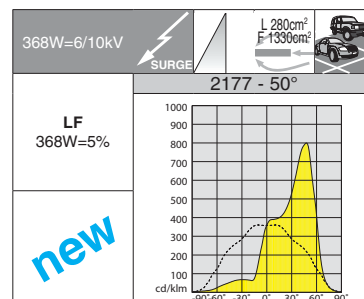
2189 Forum HE - 1 LED MODULE - asymmetric - high efficiency					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm - CRI
LED	graphite	15.00	412695-00	368	4000K - 58362lm - CRI 70



LED: power factor ≥ 0.92 . Luminous flux maintenance:	
80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

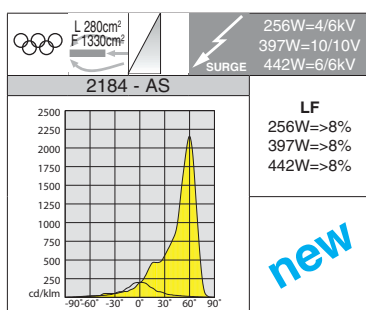


The ideal version for large spaces (squares, stations, airports, etc.)

Upon request: (subcode -39)	
LED	3000K - CRI 70

2177 Forum HE - 1 LED MODULE - 50° asymmetric - high efficiency					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm 700mA - CRI
LED	graphite	15.00	412698-00	368	4000K - 55829lm - CRI 70





Upon request available version with:

LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

2184 Forum - 1 LED MODULE - asymmetric 60° - "AS"

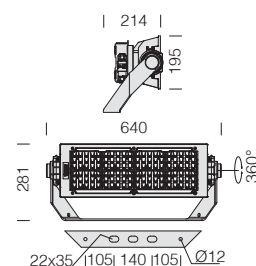
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412653-00	256	4000K - 29200lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412654-00	397	4000K - 39031lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412655-00	442	4000K - 43136lm - CRI 70

60° BEAM



IP66IK08

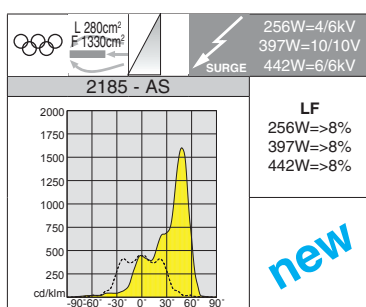
Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V
50/60Hz power supply; with IP66
driver applied to the fixture.



Upon request available version with:

LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

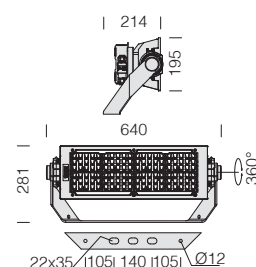
2185 Forum - 1 LED MODULE - asymmetric - "AS"

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412650-00	256	4000K - 31178lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412651-00	397	4000K - 41432lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412652-00	442	4000K - 45552lm - CRI 70



IP66IK08

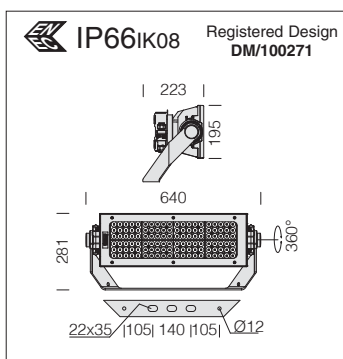
Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

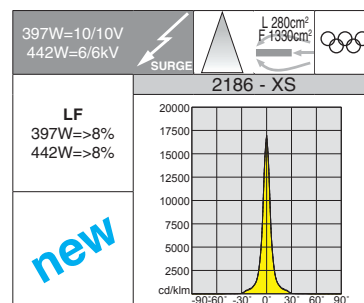
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V
50/60Hz power supply; with IP66
driver applied to the fixture.



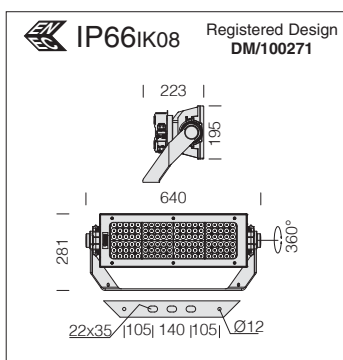
LED: power factor ≥ 0.92 . Luminous flux maintenance:		
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



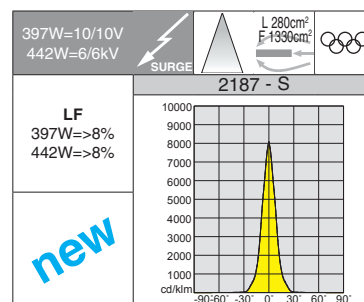
Upon request available version with:		
LED	4000K - CRI 80	1050/1200mA
LED	4000K - CRI 90	1050/1200mA
LED	5700K - CRI 70	1050/1200mA
LED	5700K - CRI 80	1050/1200mA
LED	5700K - CRI 90	1050/1200mA

2186 Forum - 1 LED MODULE - narrow beam - "XS"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	15.00	412661-00	397	4000K - 42291lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412662-00	442	4000K - 46739lm - CRI 70



LED: power factor ≥ 0.92 . Luminous flux maintenance:		
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

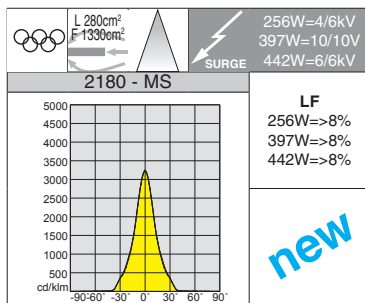
Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:		
LED	4000K - CRI 80	1050/1200mA
LED	4000K - CRI 90	1050/1200mA
LED	5700K - CRI 70	1050/1200mA
LED	5700K - CRI 80	1050/1200mA
LED	5700K - CRI 90	1050/1200mA

2187 Forum - 1 LED MODULE - narrow beam - "S"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	15.00	412671-00	397	4000K - 38797lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412672-00	442	4000K - 42877lm - CRI 70

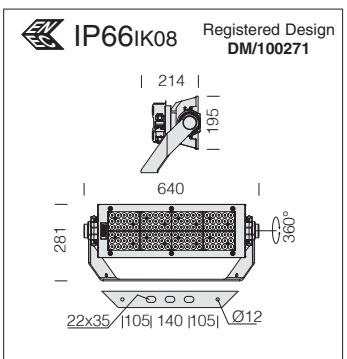




Upon request available version with:

LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

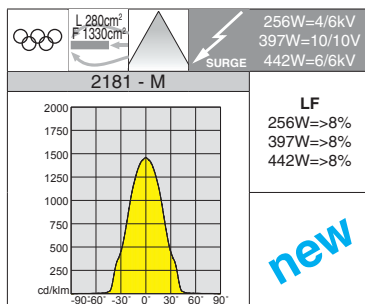
2180 Forum - 1 LED MODULE - symmetric - "MS"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412600-00	256	4000K - 33958lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412601-00	397	4000K - 45391lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412602-00	442	4000K - 50165lm - CRI 70



LED: power factor ≥0,92.
Luminous flux maintenance:

70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

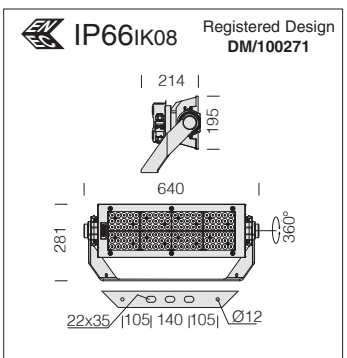
Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:

LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

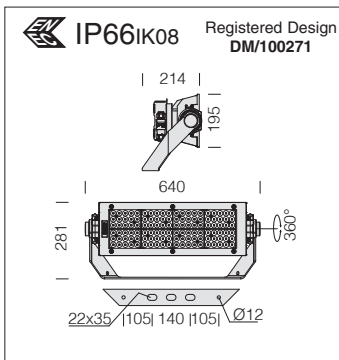
2181 Forum - 1 LED MODULE - symmetric - "M"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412610-00	256	4000K - 28993lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412611-00	397	4000K - 38755lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412612-00	442	4000K - 42830lm - CRI 70



LED: power factor ≥0,92.
Luminous flux maintenance:

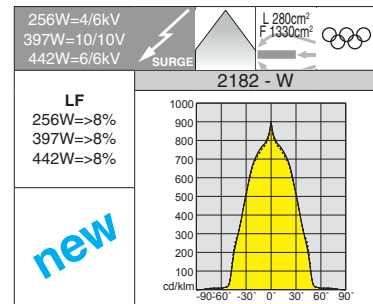
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



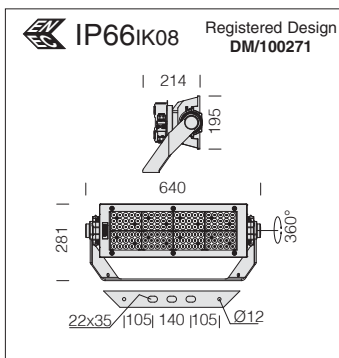
LED: power factor ≥ 0.92 . Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



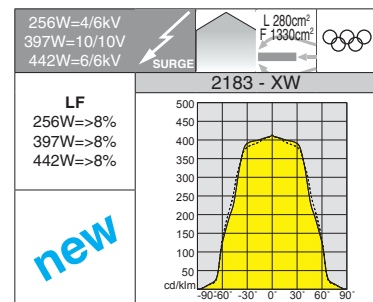
Upon request available version with:		
LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

2182 Forum - 1 LED MODULE - symmetric - "W"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412620-00	256	4000K - 32306lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412621-00	397	4000K - 43182lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412622-00	442	4000K - 47723lm - CRI 70



LED: power factor ≥ 0.92 . Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:		
LED	4000K - CRI 80	700/1050/1200mA
LED	4000K - CRI 90	700/1050/1200mA
LED	5700K - CRI 70	700/1050/1200mA
LED	5700K - CRI 80	700/1050/1200mA
LED	5700K - CRI 90	700/1050/1200mA

2183 Forum - 1 LED MODULE - symmetric - "XW"					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412630-00	256	4000K - 33841lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412631-00	397	4000K - 45235lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412632-00	442	4000K - 49992lm - CRI 70

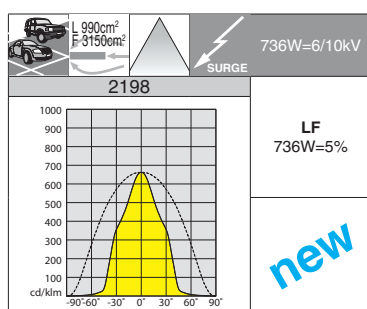


Infrastructure ... loading areas, stations and airports

Train stations, airports and large transit areas are regarded as "landmarks", i.e. well defined signs of a city's ambition and desire for renovation. This is why the design of major infrastructure is being entrusted to world-famed architects. Lighting should meet functional requirements and also enhance the challenging solutions chosen by the designers.

Lighting becomes an integral part of these public works, turning into structural elements giving them extraordinary visibility during the evenings. This new approach also applies to small train stations and roads, where proper lighting can increase safety, efficiency and energy savings and improve aesthetics.

Energy saving: Forum HE can save more energy compared to conventional discharge lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.



The ideal version for large spaces (squares, stations, airports, etc.)

On request: (subcode -39)

LED	3000K - CRI 70
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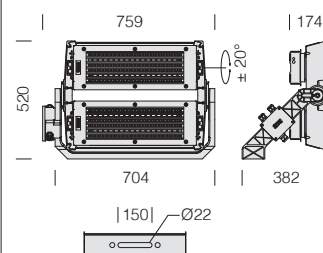


2198 Forum HE - 2 LED MODULES - symmetric - high efficiency

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - CRI
LED	graphite	27.00	412691-00	736	4000K - 115282lm - CRI 70

IP66IK08

Registered Design
DM/100271

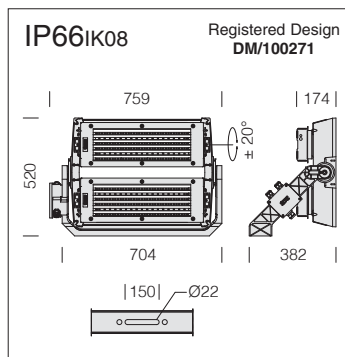


LED: power factor ≥0,92.
Luminous flux maintenance:

80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

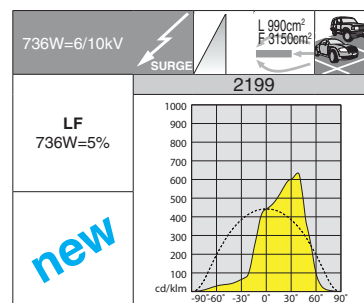
Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



LED: power factor ≥ 0.92 . Luminous flux maintenance:	
80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

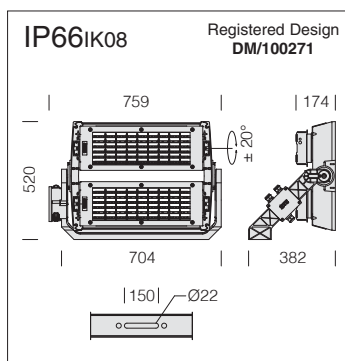
Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



The ideal version for large spaces (squares, stations, airports, etc.)

On request: (subcode -39)	
LED	3000K - CRI 70

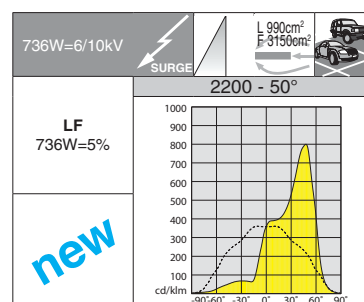
2199 Forum HE - 2 LED MODULES - asymmetric - high efficiency					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	graphite	27.00	code 412696-00	736	K - ølm - CRI 4000K - 116724lm - CRI 70



LED: power factor ≥ 0.92 . Luminous flux maintenance:	
80%	90.000h (L80B10)
90%	50.000h (L90B10)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

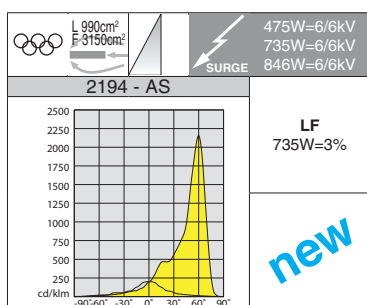


The ideal version for large spaces (squares, stations, airports, etc.)

On request: (subcode -39)	
LED	3000K - CRI 70

2200 Forum HE - 2 LED MODULES - 50° asymmetric - high efficiency					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	graphite	27.00	code 412697-00	736	K - ølm - CRI 4000K - 111658lm - CRI 70





Upon request available version with:

separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2194 Forum - 2 LED MODULES - asymmetric 60° - "AS"

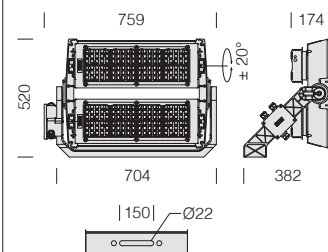
		CLD		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412766-00	475	4000K - 81408lm - CRI 70
			412766-60		4000K - 71760lm - CRI 80
			412766-0035		5700K - 81408lm - CRI 70
			412766-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412767-00	735	4000K - 113376lm - CRI 70
			412767-60		4000K - 100080lm - CRI 80
			412767-0035		5700K - 113376lm - CRI 70
			412767-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412768-00	846	4000K - 125304lm - CRI 70

60° BEAM



IP66IK08

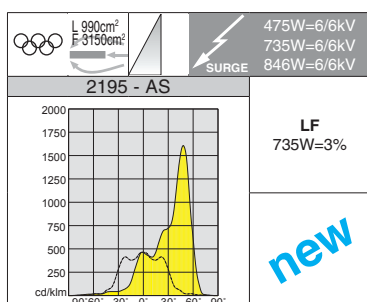
Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V
50/60Hz power supply; with IP66
driver applied to the fixture.



Upon request available version with:

separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

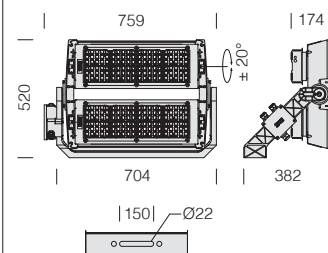
2195 Forum - 2 LED MODULES - asymmetric - "AS"

			CLD		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI	
LED	graphite	27.00	412760-00	475	4000K - 81408lm - CRI 70	
			412760-60		4000K - 71760lm - CRI 80	
			412760-0035		5700K - 81408lm - CRI 70	
			412760-0034		5700K - 65620lm - CRI 90	
wattage (1050mA)					K - ølm 1050mA - CRI	
LED	graphite	27.00	412763-00	735	4000K - 113376lm - CRI 70	
			412763-60		4000K - 100080lm - CRI 80	
			412763-0035		5700K - 113376lm - CRI 70	
			412763-0034		5700K - 93360lm - CRI 90	
wattage (1200mA)					K - ølm 1200mA - CRI	
LED	graphite	27.00	412765-00	846	4000K - 125304lm - CRI 70	



IP66IK08

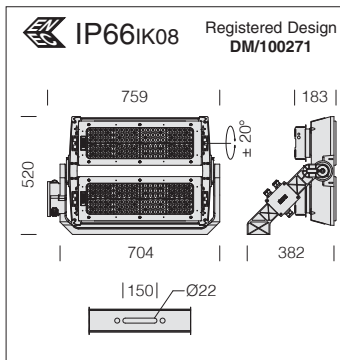
Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

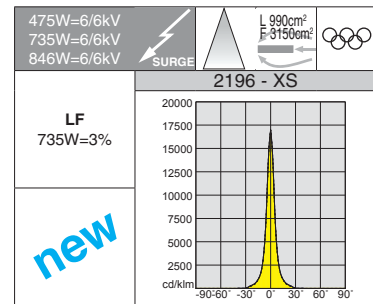
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V
50/60Hz power supply; with IP66
driver applied to the fixture.



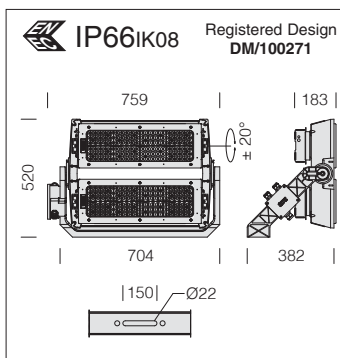
LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



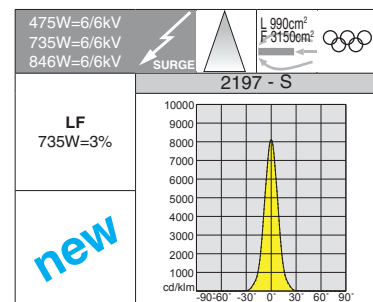
Upon request available version with:		
separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2196 Forum - 2 LED MODULES - narrow beam - "XS"					
		CLD			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ø1m 700mA - CRI
LED	graphite	27.00	412770-00	475	4000K - 81408lm - CRI 70
			412770-60		4000K - 71760lm - CRI 80
			412770-0035		5700K - 81408lm - CRI 70
			412770-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ø1m 1050mA - CRI
LED	graphite	27.00	412771-00	735	4000K - 113376lm - CRI 70
			412771-60		4000K - 100080lm - CRI 80
			412771-0035		5700K - 113376lm - CRI 70
			412771-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ø1m 1200mA - CRI
LED	graphite	27.00	412772-00	846	4000K - 125304lm - CRI 70



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

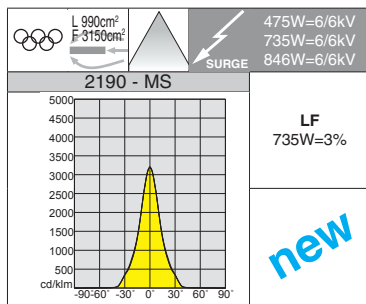
Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:		
separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2197 Forum - 2 LED MODULES - narrow beam - “S”					
		CLD			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412780-00	475	4000K - 81408lm - CRI 70
			412780-60		4000K - 71760lm - CRI 80
			412780-0035		5700K - 81408lm - CRI 70
			412780-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412781-00	735	4000K - 113376lm - CRI 70
			412781-60		4000K - 100080lm - CRI 80
			412781-0035		5700K - 113376lm - CRI 70
			412781-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412782-00	846	4000K - 125304lm - CRI 70

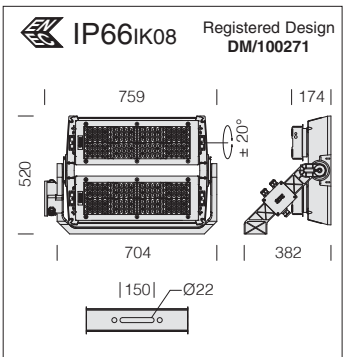




Upon request available version with:

separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2190 Forum - 2 LED MODULES - symmetric - “MS”					
		CLD			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412891-00	475	4000K - 81408lm - CRI 70
			412891-60		4000K - 71760lm - CRI 80
			412891-0035		5700K - 81408lm - CRI 70
			412891-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412890-00	735	4000K - 113376lm - CRI 70
			412890-60		4000K - 100080lm - CRI 80
			412890-0035		5700K - 113376lm - CRI 70
			412890-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412892-00	846	4000K - 125304lm - CRI 70

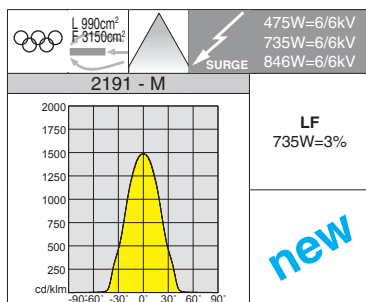


LED: power factor ≥0,92.

Luminous flux maintenance:

70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

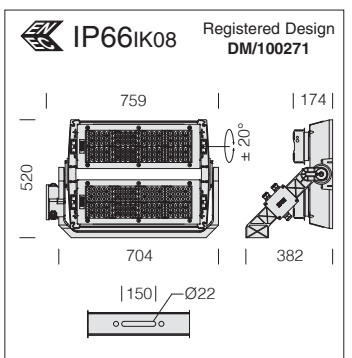
Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:

separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2191 Forum - 2 LED MODULES - symmetric - “M”					
		CLD			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412750-00	475	4000K - 81408lm - CRI 70
			412750-60		4000K - 71760lm - CRI 80
			412750-0035		5700K - 81408lm - CRI 70
			412750-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412751-00	735	4000K - 113376lm - CRI 70
			412751-60		4000K - 100080lm - CRI 80
			412751-0035		5700K - 113376lm - CRI 70
			412751-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412753-00	846	4000K - 125304lm - CRI 70

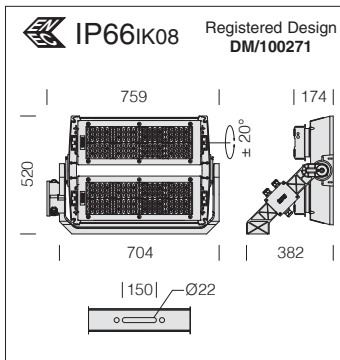


LED: power factor ≥0,92.

Luminous flux maintenance:

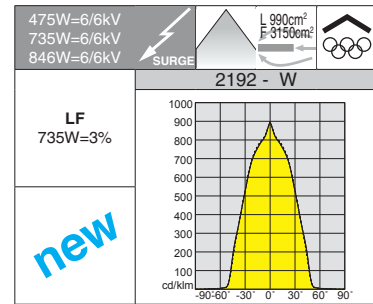
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



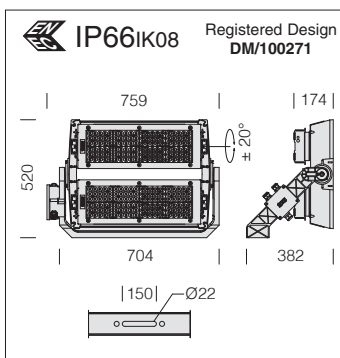
LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



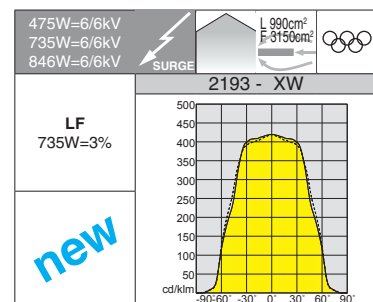
Upon request available version with:		
separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2192 Forum - 2 LED MODULES - symmetric - “W”					
		CLD			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412790-00	475	4000K - 81408lm - CRI 70
			412790-60		4000K - 71760lm - CRI 80
			412790-0035		5700K - 81408lm - CRI 70
			412790-0034		5700K - 65620lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412791-00	735	4000K - 113376lm - CRI 70
			412791-60		4000K - 100080lm - CRI 80
			412791-0035		5700K - 113376lm - CRI 70
			412791-0034		5700K - 93360lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412792-00	846	4000K - 125304lm - CRI 70



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	160.000h (L70B20)	1050mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	100.000h (L80B10)	1050mA
80%	90.000h (L80B10)	1200mA

Wiring (2 LED module) 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



Upon request available version with:		
separate driver	DALI	700/1050/1200mA
	DMX/RMD	700/1050/1200mA

2193 Forum - 2 LED MODULES - symmetric - “XW”						
		CLD			LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI	
LED	graphite	27.00	412681-00	475	4000K - 81408lm - CRI 70	
			412681-60		4000K - 71760lm - CRI 80	
			412681-0035		5700K - 81408lm - CRI 70	
			412681-0034		5700K - 65620lm - CRI 90	
wattage (1050mA)					K - ølm 1050mA - CRI	
LED	graphite	27.00	412680-00	735	4000K - 113376lm - CRI 70	
			412680-60		4000K - 100080lm - CRI 80	
			412680-0035		5700K - 113376lm - CRI 70	
			412680-0034		5700K - 93360lm - CRI 90	
wattage (1200mA)					K - ølm 1200mA - CRI	
LED	graphite	27.00	412682-00	846	4000K - 125304lm - CRI 70	



A modern stadium is a concentration of emotions and technology:

light stability is a fundamental requirement for good quality TV resolution. Modern stadiums are a concentration of emotions and technology. Sport facilities are now multi-purpose structures, designed to host different types of events and built according to new environmentally friendly criteria, attracting an ever larger audience.

Guidelines for TV broadcasts with LED lighting systems

During a broadcast it is not uncommon to perceive an annoying flicker especially during slow motion. This flicker is distracting and should be eliminated where possible. The circumstances that produce the flicker vary upon the frequency modulation, voltage and camera frame rate. The table below provides a general rule of flicker factor values produced by various lighting systems. A flicker factor of less than 5% will generally not cause problems for slow motion replays at up to 150 frames per second. A lighting system with a flicker factor of less than 5% will eliminate the perceived flicker at most frame rates per second used within the sports television industry. The acceptable level of flicker factor (FF) is indicated in the Illuminance Category Tables.



Flicker Factor Reference Table

Type of Illuminance System	FF value (guide only)
Daylight	0 %
LED Luminaires: % of flicker depend upon the type of LED power supply	<3 %
Discharge lamps with high frequency ballasts	<4 %
Discharge lamps with 3-phase magnetic ballasts for uniform light	8-20 %
Discharge lamps with single-phase magnetic ballasts	30-50 %

TLCI (Television Lighting Consistency Index)

In addition to the CRI index, the high colour rendering version of Forum LED is ranked in terms of TLCI index in order to comply with HD television standards owing to its growing use in the television broadcasting environment.

TLCI levels greater than 90 indicate a light source suited for television use that will limit post-production time and labour costs.

TLCI LEVELS

85-100	Errors are so small that a colourist would not consider correcting them
75-85	A colourist would probably want to correct the colour performance, but could easily get an acceptable result
50-75	A colourist would certainly want to correct the errors, and could probably achieve an acceptable result, but it would take significant time to get there
25-50	The colour rendering is poor, and a good colourist would be needed to improve it, but the results would not be to broadcast standard
0-25	The colour rendering is bad, and a colourist would struggle for a long time to improve it, and even then, the results may not be acceptable for broadcast

GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins.

Optics: made of V0 polycarbonate, metallized high yield.

Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting existing systems is available upon request.

Standard Supply: complete with galvanised and coated bracket. Equipped with temperature control device and dedicated electronic device to protect the LED module.



Products compliant with ball impact resistance test standard DIN 18032-3: 2018

Registered Design
DM/100271

The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.



Product with a very low flicker; uniform light for greater eye protection.

OTHER CHARACTERISTICS

The family of Forum LED floodlights includes versions with narrow, symmetric and asymmetric beam optics with different highly efficient LED sources.

A truly complete range of products offering the best performance to meet all outdoor lighting needs for:

- Buildings and façades
- Industrial zones, harbour areas, train stations and loading/unloading bays
- Public or private infrastructure, airports, metro stations, car parks and transit zones
- Stadiums or indoor and outdoor multi-sport facilities (tennis court, basketball court, swimming pool, velodrome, hockey rink, volleyball court, etc...).

• Easy and safe to install, Forum LED is equipped with special devices for perfect pointing and positioning stability.

• The careful selection of the materials and electronic components ensures full safety during operation, guaranteeing total resistance to impacts and accidental collisions, thermal shocks and weather agents.

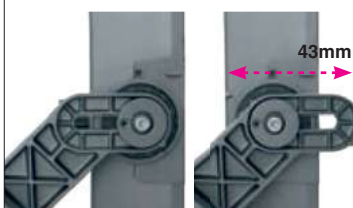
• The shape of the body allows obtaining diverse combinations of power, lumen and luminous beams; in fact, it is available in versions with single, double or triple modules, with asymmetric light distribution, narrow beam or symmetric beams.

• Precision optics that allow broad design flexibility guaranteeing high levels of light quality, eliminating flicker during TV broadcasting.

OTHER INFORMATION



Structure 3 LED modules : in die-cast aluminium with bracket for spotlight mounting. It also allows pointing the individual module at an angle of $\pm 20^\circ$ to its horizontal axis.



Luminaire bracket in die-cast aluminium made to move 43 mm along the horizontal axis to give greater light pointing freedom.



Junction box for terminals in die-cast aluminium on the support bracket

UPON REQUEST

The fixture can be equipped with several light dimmers:

- 1-10V (dimmable from 20% to 100%) or DALI dimmable driver
- power line carrier (PLC) remote control
- wireless control system



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Stand for spotlights' pointer system. Available with set for floodlight aiming



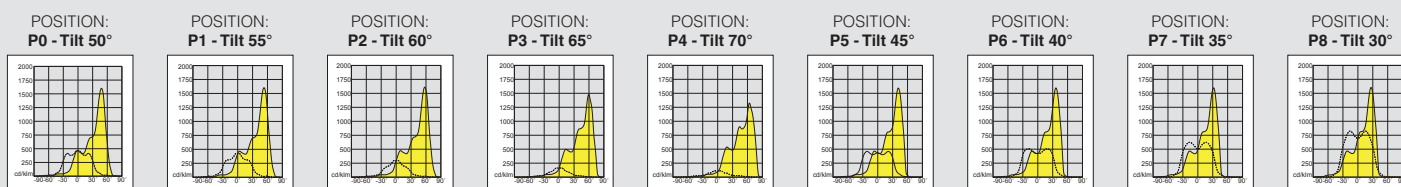
Available version with:

LED	4000K - CRI 80	700/1200/1300mA
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Upon request Forum 3 modules can be equipped with

a driver featuring protection level IP66 based on the type of installation	ON/OFF	700/1200/1300mA
	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

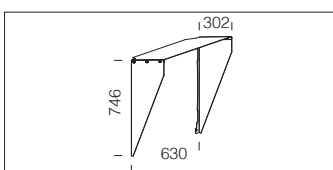
Flexibility - The optical system comprising modules that can be adjusted into 8 positions (with a 5° tilt angle) provides different asymmetric angles for the best lighting solutions without tilting the spotlight.



	Luminous flux maintenance Power factor ≥ 0.95	Wattage (W)	Allowed ambient temperature (min.°C ÷ max.°C)
Forum 3 (art. 3192-3194-3195-3196-3198-3230-3231-3232)			
70%	190.000h (L70B20)@700mA	690W	Ta = -40°C ÷ +45°C
70%	145.000h (L70B20)@1200mA	1223W	Ta = -40°C ÷ +40°C
70%	135.000h (L70B20)@1300mA	1333W	Ta = -40°C ÷ +30°C
80%	120.000h (L80B10)@700mA	690W	Ta = -40°C ÷ +45°C
80%	90.000h (L80B10)@1200mA	1223W	Ta = -40°C ÷ +40°C
80%	85.000h (L80B10)@1300mA	1333W	Ta = -40°C ÷ +30°C

The table below shows the values for standard versions. For further information (expected life, temperatures) and/or for special versions, please contact our customer service.

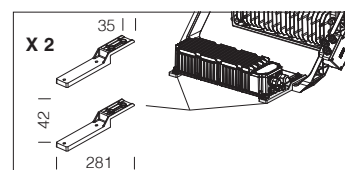
ACCESSORIES FOR FORUM 3 MODULES



acc. 482 3 modules conveyor

graphite 995786-00

In aluminium. To be used for conveying the light beam in a single direction.



acc. 198 driver support brackets

graphite 995789-00

In steel. To be used for installing the Type 2 and Type 3 driver directly on the bracket in 3-module versions.

On request, Forum 3 can be equipped with a driver with a protection class of IP66 depending on the type of installation.

IP66 DRIVER characteristics (for Forum 3 modules)

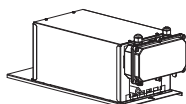
DRIVER IP66 versions	TYPE 1 - IP66 (ON-OFF)	TYPE 2 - IP66 (DALI)	TYPE 3 - IP66 (DMX/RDM)
Input power	220-240VAC	220-400VAC	220-400VAC
Power frequency	50/60Hz	50/60Hz	50/60Hz
Power factor	0,94 (full load)	0,98 (full load)	0,98 (full load)
Efficiency	92% (full load)	96% (full load)	96% (full load)
Total harmonic distortion	20%	6% (220-240V) - 12% (400V)	6% (220-240V) - 12% (400V)
Operating ambient temperature	-40°C ÷ +45°C	-40°C ÷ +45°C	-40°C ÷ +45°C
IP protection class	IP66	IP66	IP66
Enclosure mechanical resistance	IK08	IK08	IK08
Output power	700÷1400mA _{DC}	700÷1400mA _{DC}	700÷1400mA _{DC}
Dimming protocol	–	DALI 2	DMX/RDM
Dimming level	–	0,4 ÷ 100%	0,4 ÷ 100%
Flicker up to 1000Hz	5%	1%	1%
LED temperature control module	Present	Present	Present
Surge protection level	6/10kV	10/10kV	10/10kV
Enclosure material	Coated steel	Die-cast aluminium with surface coating	Die-cast aluminium with surface coating
Life expectancy	50.000h @ Tamb Max	50.000h @ Tamb Max	50.000h @ Tamb Max
Certifications	CE	CE+ENEC	CE+ENEC

TYPE 1 - ON/OFF

Type 1 - Driver IP66 - ON/OFF

220-240VAC-50/60Hz

* 1200mA	cod. 99767300001042
1300mA	cod. 99767300011042



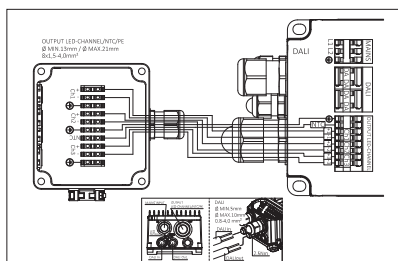
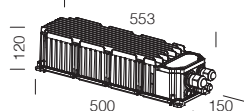
(*for versions art. 3194-3195 Forum - asymmetric - "AS").

TYPE 2 - DALI

Type 2 - Driver IP66 - DALI

6.10 Kg 220-400VAC-50/60Hz

1200mA	cod. 99767300411041
1300mA	cod. 99767308411041

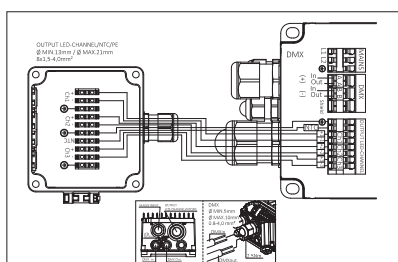
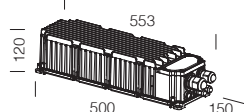


TYPE 3 - DMX/RDM

Type 3 - Driver IP66 DMX/RDM

6.10 Kg 220-400VAC-50/60Hz

1200mA	cod. 99767300001041
1300mA	cod. 99767300301041



Temperature control device

Our products are equipped with an automatic temperature control device. In the event of an unexpected temperature rise caused by anomalous weather conditions, the system will reduce the drive current, guaranteeing proper operation.



Surge protector

Every year, lighting managers are called to face the numerous damages caused by lightning and overcurrents.

To protect lighting installations from surge, i.e. the rapid increase in voltage between parts of opposite polarities and/or the ground, Disano has equipped its luminaires with an EN 61547 compliant surge protector, capable of protecting the LED module and their related driver from voltage spikes.

Switching processes/changing the load on the power line

It operates in two modes:

- differential mode: surge between power conductors, between the phase conductor to the neutral conductor. Substantially, between phase (L) and neutral (N) no substantial surges are present because voltage peaks are suppressed by other equipment connected to the power line; as a consequence a lower surge protector is sufficient.
- common mode: surge between power conductors, L/N, to the ground or the body of the luminaire if it is classified in class II (i.e. it is installed on a metal pole). Overvoltage in the common mode are generated by lightning strikes and may reach very high levels.



All versions of Forum LED are or can be equipped with **DALI** dimmable drivers. **DALI** protocol enables the dimming control of light, thanks to the vast range of control accessories and the full interoperability granted by the DALI logo present on the products. **DALI** protocol is recommended for functional dimming (energy saving, scene setting, remote control) and has a scalable architecture. Wireless dimming can be achieved with a **DALI** driver in order to add this function in traditional installations that have been converted to LED, without the need to install additional wiring



Forum LED can be equipped with **DMX** compatible drivers. **DMX** protocol is needed for dynamic light thanks to its immediate reaction time and virtually unlimited number of addresses. **DMX** can also be used in functional dimming using simple lighting controls in high-end sport installations. **DMX** allows all range of scenic effects, as well as the monitoring of each luminaire and ease of configuration thanks to the self-addressing **DXM/RDM** functions.

Management software: the software readily enables full control of the luminous design. This new software combines absolute control with user-friendliness, providing an overview of the colour changes, duration of fading and intervals in a visible and simple way. The scenographies can be downloaded from the central system to the local units and stored in an IP65 rated box (USB compatible) which can be installed externally to provide independent control of all the functions without requiring a computer. First of all it is necessary to configure single floodlights in the management software, which will identify the floodlights based on the address they have been assigned. The system enables all the characteristics of the light to be controlled (dimming, etc...). Furthermore, the system enables single scenes to be defined, and to programme the timing interval between one scene and the next and various effects such as fading.

Controller DMX



In combination with the management software, the **MA onPC command wing** is a portable 2,048 parameter control solution that can be used in nearly any location.

- Real-time control for 2,048 parameters in combination with management software (up to 65,536 parameters as backup in the MA system)

- Expandable up to 4,096 parameter
- 2 A/B faders (100mm)
- 1 Level-Wheel
- Individually backlit and dimmable silent (clickless) keys
- Integrated universal power supply
- Light, handy & rock solid
- Ergonomic design
- Just connect via USB to any PC running software



The **dot2 core** is a compact lighting console designed for small to medium sized productions with up to 4,096 control channels. Intuitive operation is the core of the dot2 philosophy and with a comprehensive set of connectivity hardware on all console models, the dot2 range is suitable for most theatre, touring, corporate, television and education lighting environments.

- full programming section
- master playback section
- 6 fader playbacks
- 12 individual playback buttons
- Two built-in touch screens and support for one external touch screen ensure the dot2 core has the flexible hardware required for almost any kind of show.



The **grandMA3 light** console is the top of its range. It provides the perfect combination of power and physical size. The grandMA3 light console is suitable for the most demanding productions, making it probably the most versatile lighting console available.

- Real-time control for up to 250,000 parameters per session in connection with grandMA3 processing units
- 6 DMX outputs, 1 DMX input
- 2 internal foldable monitor multi-touch screens
- 2 internal letterbox multi-touch screens
- 2 internal multi-touch command screens, 2 external multi-touch screens can be connected
- 41 rotary RGB backlit encoders
- 5 backlit dual encoders
- 15 backlit motorized 60mm faders
- 60 separate playbacks
- 16 assignable x-keys
- integrated keyboard drawer
- built-in uninterruptible power supply (UPS)
- 3 etherCON connectors, 6 USB connectors
- 2 backlit motorized A/B faders 100mm
- Individually backlit and dimmable silent (clickless) keys



Applications

• Stadiums, arenas and sports facilities

Proper lighting helps both the stadium audience and the viewers at home who are watching the event from TV to follow the show perfectly; stadiums, arenas and sports facilities turn into the ideal stage for any event.

• Multi-purpose facilities

Different lighting effects and setups can have a great visual impact for spectators at concerts or live shows... making it a guaranteed success.



SYSTEM ARCHITECTURE & COMPONENTS



FORUM: available with one, two, three LED modules, with symmetric, asymmetric and narrow light beam. The cutting-edge LED sources, with 5700K and CRI 90 colour rendering, are ideal for ensuring perfect TV images, even in HD resolution.



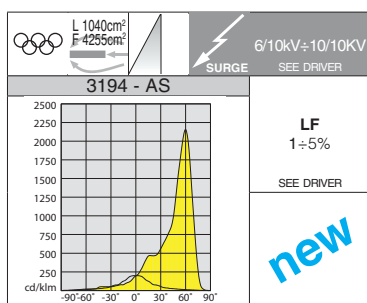
DRIVER DXM/RDM: to power the spotlights, in addition to controlling the light point (ON/OFF, luminous flux dimming, etc.).



DXM/RDM CONTROLLER: to control the DMX interface (save light scenes and internal timers, ON/OFF/dimming/animation control).



SOFTWARE: the console displayed on the monitor, allows the full control of the different spotlights, easily handling the desired light effects



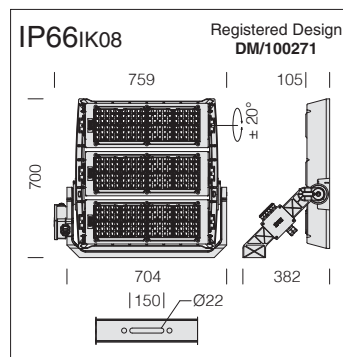
Upon request available version with:		
LED	4000K - CRI 80	700/1200mA

Upon request Forum 3 modules can be equipped with		
a driver featuring protection level IP66 based on the type of installation	ON/OFF	700/1200mA
	DALI	700/1200mA
	DMX/RMD	700/1200mA

60° BEAM

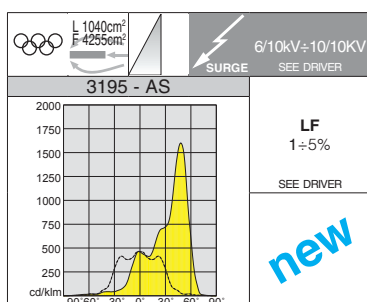


3194 Forum - 3 LED MODULES - asymmetric 60° - "AS"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412822-00	690	4000K - 128556lm - CRI 70
			412822-0034		5700K - 105415lm - CRI 90
wattage (1200mA)	colour	weight	code	W	K - ølm 1200mA - CRI
LED	graphite	27.00	412824-00	1223	4000K - 206316lm - CRI 70
			412824-0034		5700K - 169170lm - CRI 90



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

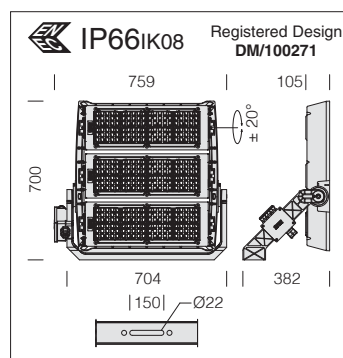


Upon request available version with:		
LED	4000K - CRI 80	700/1200mA

Upon request Forum 3 modules can be equipped with		
a driver featuring protection level IP66 based on the type of installation	ON/OFF	700/1200mA
	DALI	700/1200mA
	DMX/RMD	700/1200mA

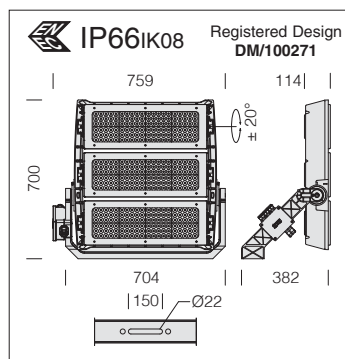


3195 Forum - 3 LED MODULES - asymmetric - "AS"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412821-00	690	4000K - 128556lm - CRI 70
			412821-0034		5700K - 105415lm - CRI 90
wattage (1200mA)	colour	weight	code	W	K - ølm 1200mA - CRI
LED	graphite	27.00	412820-00	1223	4000K - 206316lm - CRI 70
			412820-0034		5700K - 169170lm - CRI 90



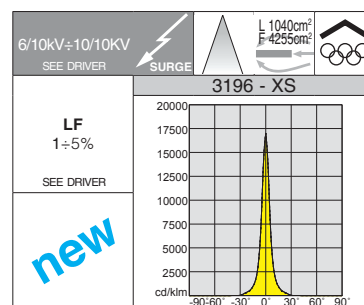
LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

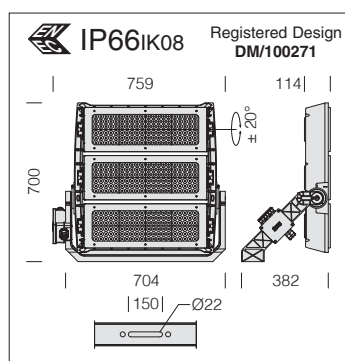
Wiring (3 LED module): separate driver; 400V power supply for re-rofitting exiting systems is available upon request.



On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

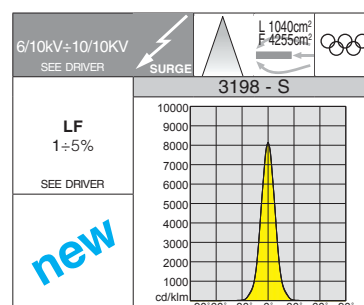
Upon request Forum 3 modules can be equipped with		
a driver featuring protection level	ON/OFF	700/1200/1300mA
IP66 based on the type of installation	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

3196 Forum - 3 LED MODULES - narrow beam - "XS"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412801-00	690	4000K - 128556lm - CRI 70
			412801-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412800-00	1223	4000K - 206316lm - CRI 70
			412800-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412802-00	1333	4000K - 220572lm - CRI 70
			412802-0034		5700K - 180870lm - CRI 90



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

Wiring (3 LED module): separate driver; 400V power supply for re-rofitting exiting systems is available upon request.

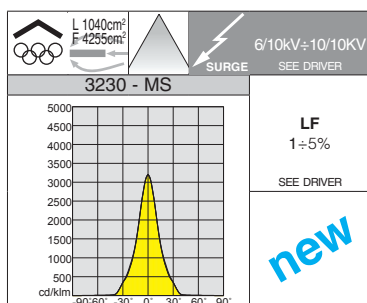


On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

Upon request Forum 3 modules can be equipped with		
a driver featuring protection level	ON/OFF	700/1200/1300mA
IP66 based on the type of installation	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

3198 Forum - 3 LED MODULES - narrow beam - "S"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412811-00	690	4000K - 128556lm - CRI 70
			412811-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412810-00	1223	4000K - 206316lm - CRI 70
			412810-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412812-00	1333	4000K - 220572lm - CRI 70
			412812-0034		5700K - 180870lm - CRI 90





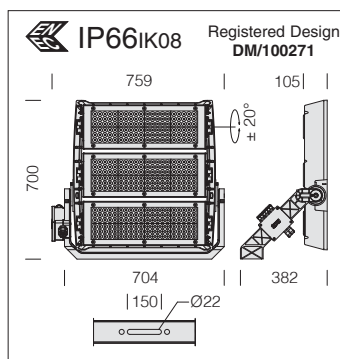
On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

Upon request Forum 3 modules can be equipped with

a driver featuring protection level	ON/OFF	700/1200/1300mA
IP66 based on the type of installation	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

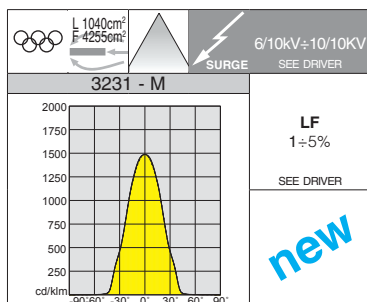


3230 Forum - 3 LED MODULES - symmetric - "MS"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412841-00	690	4000K - 128556lm - CRI 70
			412841-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412840-00	1223	4000K - 206316lm - CRI 70
			412840-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412842-00	1333	4000K - 220572lm - CRI 70
			412842-0034		5700K - 180870lm - CRI 90



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



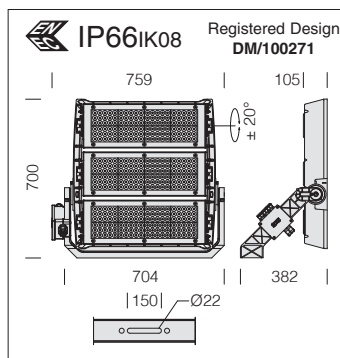
On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

Upon request Forum 3 modules can be equipped with

a driver featuring protection level	ON/OFF	700/1200/1300mA
IP66 based on the type of installation	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

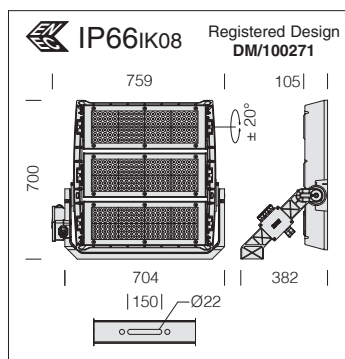


3231 Forum - 3 LED MODULES - symmetric - "M"					
		CLD S+L		LED (tj= 85 °C)	
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412871-00	690	4000K - 128556lm - CRI 70
			412871-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412870-00	1223	4000K - 206316lm - CRI 70
			412870-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412872-00	1333	4000K - 220572lm - CRI 70
			412872-0034		5700K - 180870lm - CRI 90



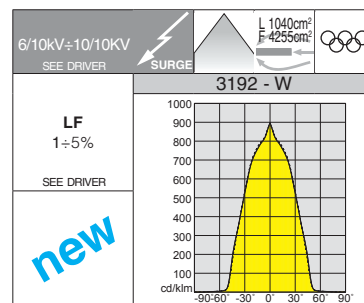
LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

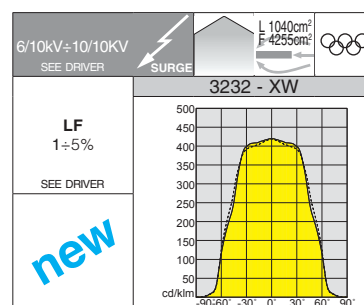
Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

Upon request Forum 3 modules can be equipped with		
a driver featuring protection level IP66 based on the type of installation	ON/OFF	700/1200/1300mA
	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA

3192 Forum - 3 LED MODULES - symmetric - "W"					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412831-00	690	4000K - 128556lm - CRI 70
			412831-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412830-00	1223	4000K - 206316lm - CRI 70
			412830-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412832-00	1333	4000K - 220572lm - CRI 70
			412832-0034		5700K - 180870lm - CRI 90

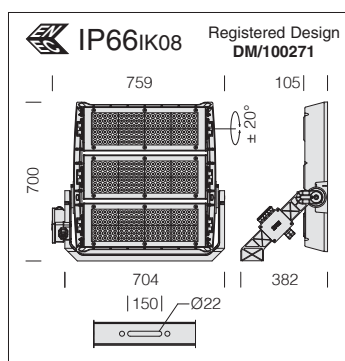


On request available version with:		
LED	4000K - CRI 80	700/1200/1300mA

Upon request Forum 3 modules can be equipped with		
a driver featuring protection level IP66 based on the type of installation	ON/OFF	700/1200/1300mA
	DALI	700/1200/1300mA
	DMX/RMD	700/1200/1300mA



3232 Forum - 3 LED MODULES - symmetric - “XW”					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412881-00	690	4000K - 128556lm - CRI 70
			412881-0034		5700K - 105415lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412880-00	1223	4000K - 206316lm - CRI 70
			412880-0034		5700K - 169170lm - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412882-00	1333	4000K - 220572lm - CRI 70
			412882-0034		5700K - 180870lm - CRI 90



LED: power factor ≥0.92. Luminous flux maintenance:		
70%	190.000h (L70B20)	700mA
70%	145.000h (L70B20)	1200mA
70%	135.000h (L70B20)	1300mA
80%	120.000h (L80B10)	700mA
80%	90.000h (L80B10)	1200mA
80%	85.000h (L80B10)	1300mA

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.





GENERAL CHARACTERISTICS

Housing: complete with graphite aluminium frame with die-cast aluminium end caps.

Diffuser: 8 mm clear and tempered glass, resistant to thermal shock.

Optics: system made in high performance PMMA, resistant to high temperatures and UV radiation. Flux recovery system in polycarbonate.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.



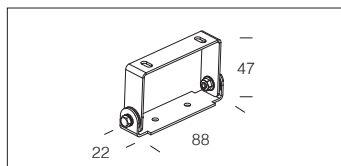
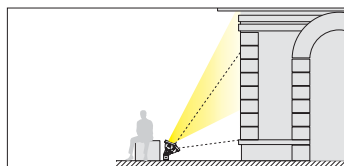
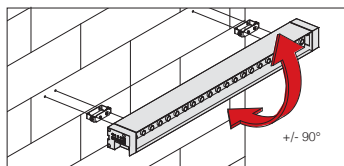
Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Equipment: complete with IP68 airtight connector and electrical cable (1mt) for mains connection.



Sicura is also available in the RGBW - DMX/RDM version (see chapter *Lighting management systems - DMX solution for LED RGBW*).

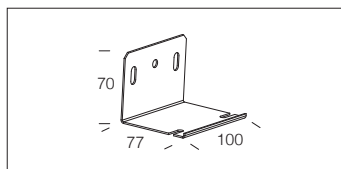
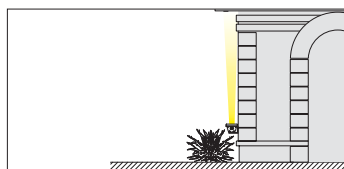
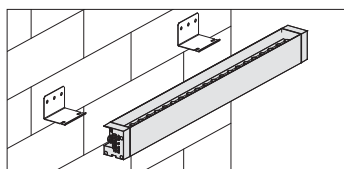
INSTALLATION AND ACCESSORIES



acc. 535 adjustable connection

grey 993970-00

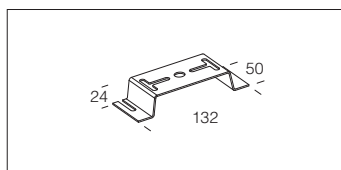
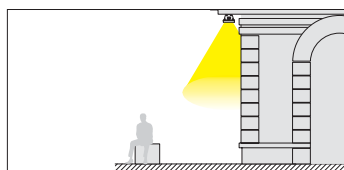
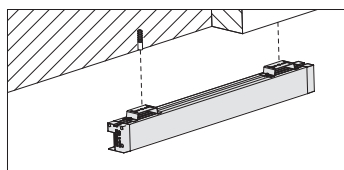
For direct ceiling installation. Capacity: 6 Kg. **2 for pack.**



acc. 536 bracket

grey 993972-00

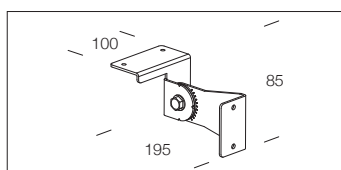
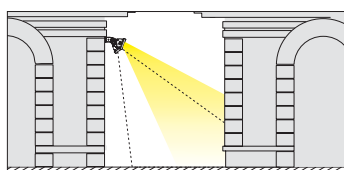
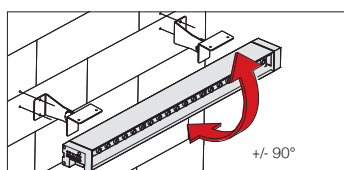
To install Sicura permanently on walls. **2 for pack.**



acc. 376 ceiling mount. unit

galvanized 145151-00

For direct ceiling installation. Only for equipment with direct light. **2 for pack.**

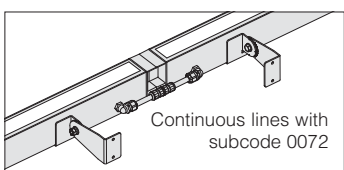


acc. 537 adjustable connection

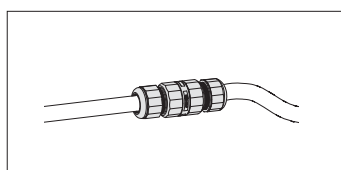
galvanized 993974-00

To install Sicura on walls or ceiling. To be used for continuous lines. **2 for pack.**

On request: continuous line alignment supplied with sub-code 0072 (with surcharge).



Continuous lines with subcode 0072



acc. 339 - Connector

993836-00

To be used for mains connection.

IP66IK08

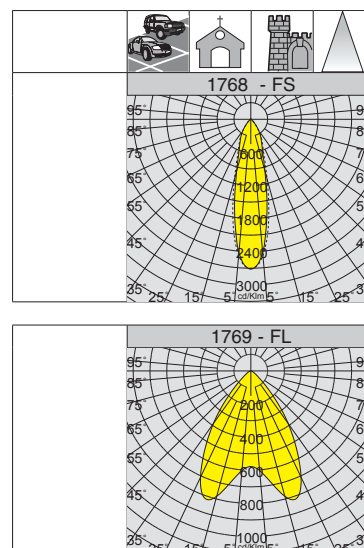
| 70 |



655/1215/1495

LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.9

50.000h



RG0

+40
°C
-30

UV

LOW
FLICKERLOW
FLICKERLOW
FLICKER

1768 Sicura FS - symmetric

wattage	colour	L	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
			weight	code		K - ølm - CRI - degrees
LED	grey	655	2.90	414242-00	22	4000K - 2931lm - CRI \geq 80 - 30°
		1215	5.60	414243-00	43	4000K - 5865lm - CRI \geq 80 - 30°
		1495	6.60	414244-00	54	4000K - 7329lm - CRI \geq 80 - 30°

1769 Sicura FL - symmetric

wattage	colour	L	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
			weight	code		K - ølm - CRI - degrees
LED	grey	655	2.90	414262-00	22	4000K - 3136lm - CRI \geq 80 - 60°
		1215	5.60	414263-00	43	4000K - 6272lm - CRI \geq 80 - 60°
		1495	6.60	414264-00	54	4000K - 7840lm - CRI \geq 80 - 60°

IP66IK08

| 70 |

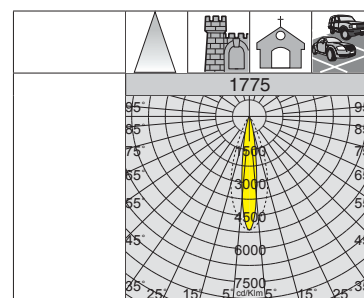
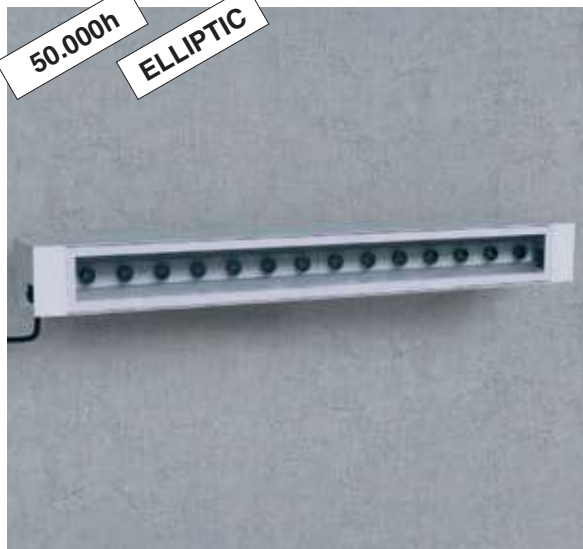


640/1240/1540

LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.9

50.000h

ELLIPTIC



RG0

+40
°C
-30

UV

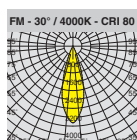
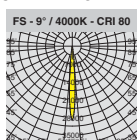
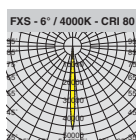
LOW
FLICKERLOW
FLICKERLOW
FLICKER

Upon request, it is possible to order SICURA with optics having photometric distributions that allow considerable design flexibility. Available with different SYMMETRIC, ASYMMETRIC or ELLIPTICAL beam angles, these fixtures are ideal for architectonic lighting applications.

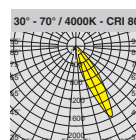
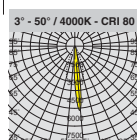
1775 Sicura - elliptic

wattage	colour	L	CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
			weight	code		K - ølm - CRI
LED	grey	640	2.90	414236-00	31	4000K - 3148lm - CRI \geq 70
		1240	5.60	414237-00	61	4000K - 6297lm - CRI \geq 70
		1540	6.60	414238-00	77	4000K - 8096lm - CRI \geq 70

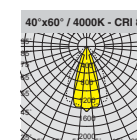
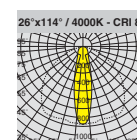
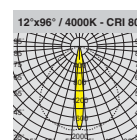
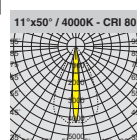
SYMMETRIC BEAM



ASYMMETRIC BEAM



ELLIPTIC BEAM





GENERAL CHARACTERISTICS

Housing: In extruded aluminum with built-in dissipator

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001).

Optics: combined optical system made in high performance PMMA, resistant to high temperatures and UV radiation.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.



LED: Luminous flux maintenance 80%: >100.000h (L80B10). Power factor ≥ 0.9 .

OTHER CHARACTERISTICS

Standard supply: complete with knife switch and watertight IP67 connector for line connection. Anti-condensation valve for air recirculation. Automatic temperature control inside the device with automatic resetting.



Electronic safety device to protect the LED module and the related ballast compliant with

EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

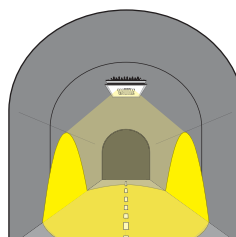
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

On request: protection up to 10KV.

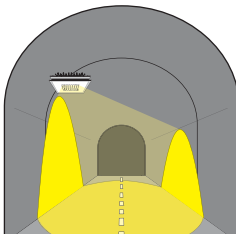


Product with a very low flicker; uniform light for greater eye protection.

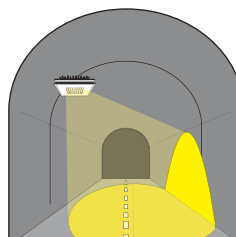
OTHER INFORMATION



3260



3262



3263

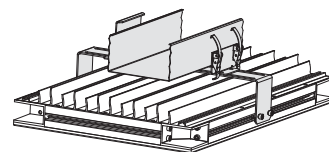
UPON REQUEST



Possibility of centralized lighting point control or via **external** presence/lighting sensors (see chapter *Lighting management systems and recommendations*).



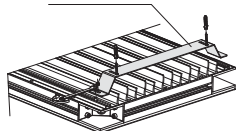
Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



Fixing to the cable duct is possible only with the special version.

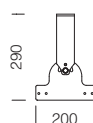
ACCESSORIES

acc. 531



acc. 531 fixed bracket

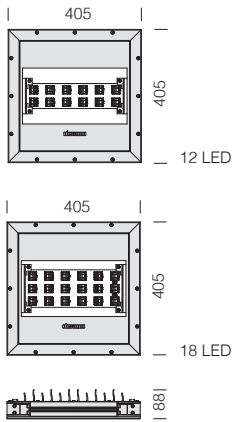
Inox	998100-00
In stainless steel. Can be hung at the ceiling. Contains 2 pieces.	



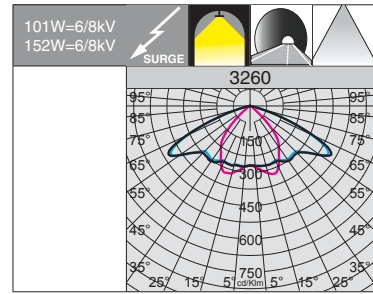
acc. 530 adjustable bracket

Inox	998099-00
In stainless steel. Can be hung and rotated. Can be ceiling or wall-mounted.	

IP66IK08



>100.000h


RG0
E_h

+40
°C
-30

LOW
FLICKER

ZONA
1

LOW
FLICKER

LOW
FLICKER

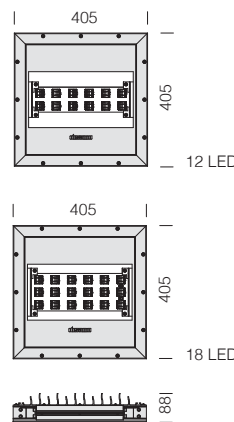
LOW
FLICKER

3260 Modoled					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	oxy. nat.	9.80	330303-00	101	4000K - 10426lm - CRI 80
			330304-00	152	4000K - 15640lm - CRI 80

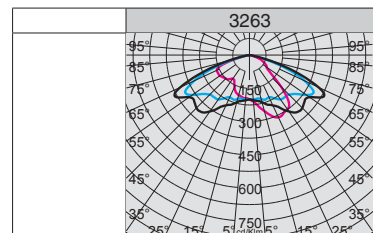
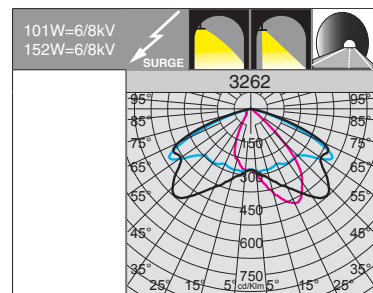
Counter-flow lighting: in the counter-flow lighting technique the light is aimed in the direction opposite to the flow of traffic. This helps observers to perceive the objects on the roadway as vividly highlighted against the background. Additionally, aiming the light mostly towards observers results in higher luminous efficacy on the roadway.

3264 Modoled - Counter-flow lighting					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	oxy. nat.	9.80	330333-00	101	4000K - 11362lm - CRI 80
			330334-00	152	4000K - 17043lm - CRI 80

IP66IK08



>100.000h


RG0
E_h

+40
°C
-30

LOW
FLICKER

ZONA
1

LOW
FLICKER

LOW
FLICKER

LOW
FLICKER

3262 Modoled - asymmetric					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	oxy. nat.	9.80	330323-00	101	4000K - 10235lm - CRI 80
			330324-00	152	4000K - 15353lm - CRI 80

3263 Modoled - mixed					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	oxy. nat.	9.80	330326-00	101	4000K - 9855lm - CRI 80
			330327-00	152	4000K - 14782lm - CRI 80



EXPO



PORTOFINO



FARO



BITTA



Expo	p. 242
Portofino	p. 244
Faro	p. 250
Bitta	p. 254

AMALFI



GLOBO



SQUARE



BRICK

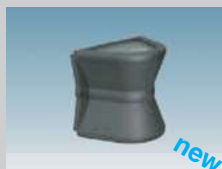


Amalfi	p. 256
Globo	p. 257
Square	p. 258
Brick	p. 260

MUSA



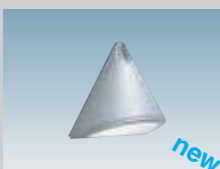
CLESSIDRA



CILINDRO



MERIDIANA



Musa	p. 262
Clessidra	p. 263
Cilindro	p. 264
Meridiana	p. 264

ONDA - VEGA



NEW VEGA



GREEN - GARDEN



KOALA



Onda	p. 265
Vega	p. 265
New Vega	p. 266
Green / Garden	p. 267
Koala	p. 268

PODIO



ELFO



DAFNE



SQUARE ADJUSTABLE



Podio	p. 270
Elfo	p. 276
Dafne	p. 278
Square	p. 279

STARLED



MICROFLOOR - MIDIFLOOR



MINIFLOOR



FLOOR



Starled	p. 280
Microfloor	p. 282
Midifloor	p. 286
Minifloor	p. 287
Floor	p. 288

GROUND



WALL



MINI - STARLED



SPY



Ground	p. 290
Wall	p. 291
Mini / Starled	p. 292
Spy	p. 293

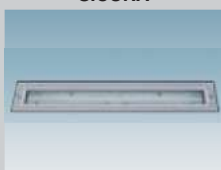
FONTE



BOX



SICURA



MINIQUADRO



Fonte	p. 294
Box	p. 294
Sicura	p. 298
Miniquadro	p. 300



GENERAL CHARACTERISTICS

Optical compartment housing: in die-cast aluminium.

Column: in extruded aluminium.

Base: in die-cast aluminium with internal reinforcement ribs.

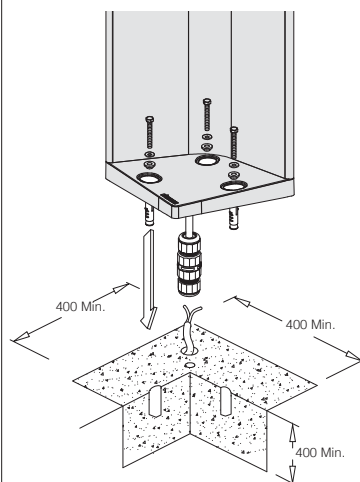
Diffuser: wide-beam, in opal methacrylate with internal micro-prismatic surface.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

LED: Power factor >0,9.
Luminous flux maintenance 70%:
50.000h (L70B50).

OTHER CHARACTERISTICS

Complete with IP67 watertight connector for line connection.
Easy and quick to install.



OTHER INFORMATION

Installation example

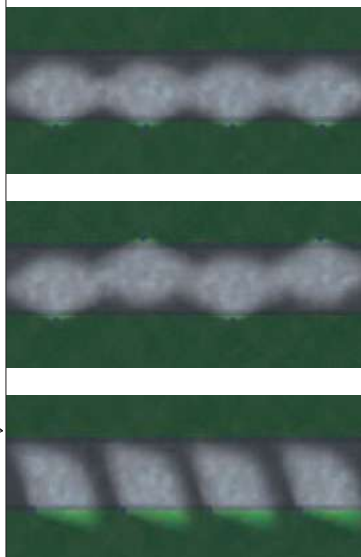
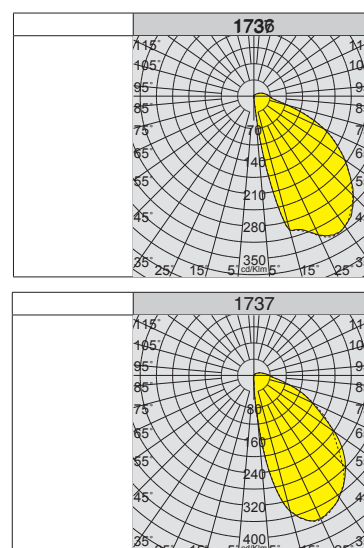
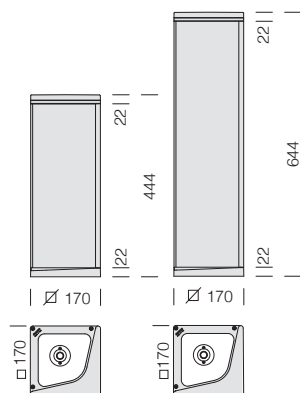


photo N.Tarantino

IP66IK09



1736 Expo - short version

			CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	h	weight	code	W tot	K - ølm 230V - CRI
LED COB	grey 9007	444	2.50	511120-00	10	4000K - 430lm - CRI 80
	graphite			511121-00		4000K - 391lm - CRI 80

1737 Expo - tall version

			CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	h	weight	code	W tot	K - ølm 230V - CRI
LED COB	grey 9007	644	6.00	511123-00	19	4000K - 907lm - CRI 80
	graphite			511124-00		4000K - 838lm - CRI 80



GENERAL CHARACTERISTICS

Housing and cone: in die-cast aluminium.

Column: in extruded aluminium, cylindrical section.

Base column: in die-cast aluminium with internal reinforcement ribs.

Diffuser: in vandal-resistant V2 self-extinguishing polycarbonate, UV-stabilized.

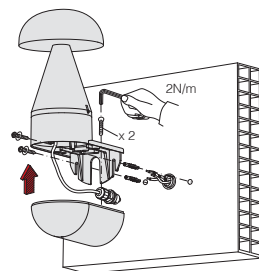
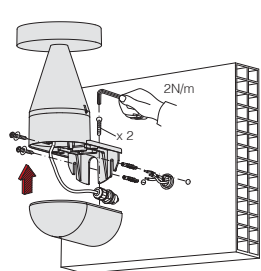
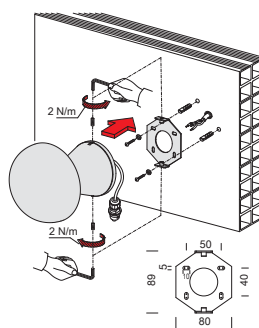
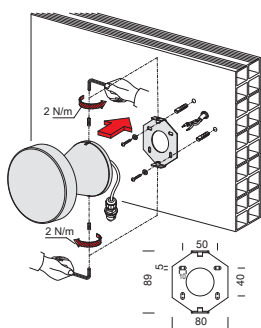
Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Equipment: complete with IP67 watertight connector for line connection. Easy and quick to install.

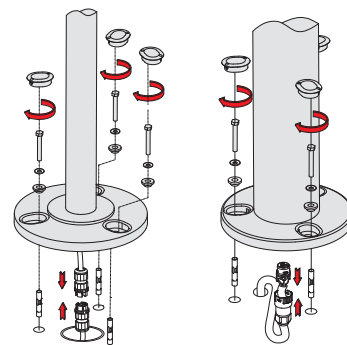
LED: Luminous flux maintenance 70%: 50.000h (L70B50)
Power factor $\geq 0,9$

OTHER CHARACTERISTICS

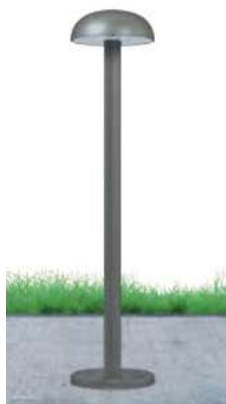
Wall versions: complete with plate for wall-mounting and IP67 watertight connector for line connection.



Floor versions: complete with base for floor-mounting and IP67 watertight connector for line connection.

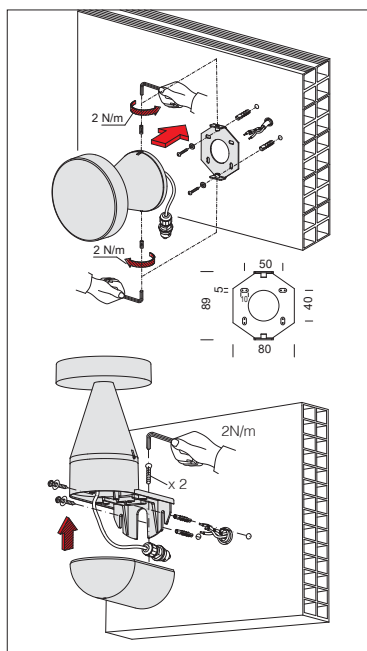


Upon request: corten version, with sub-code 2191.

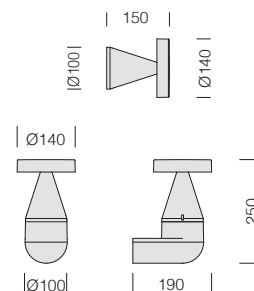




art. 1871



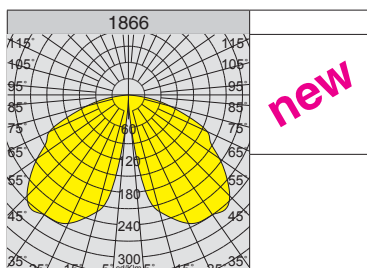
IP65IK08

**1873 Portofino - wall version**

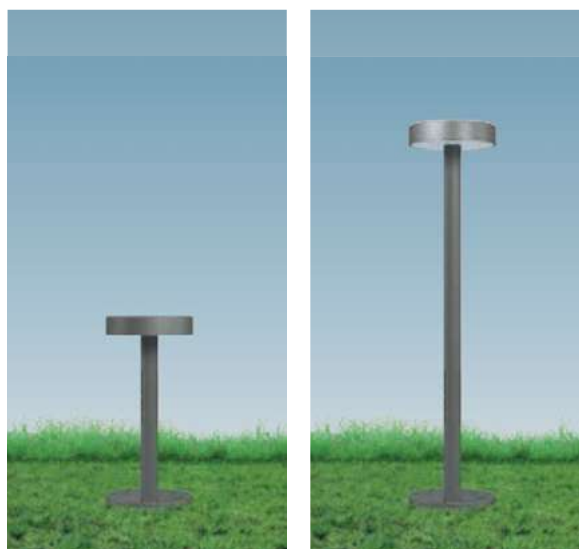
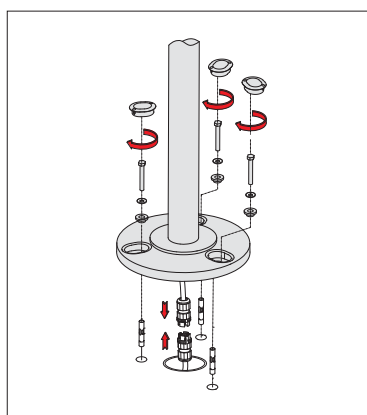
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	0.80	511160-00	10	4000K - 801lm - CRI>80
			511160-39		3000K - 745lm - CRI>80
LED	white	0.80	511161-00	10	4000K - 801lm - CRI>80
			511161-39		3000K - 745lm - CRI>80

1871 Portofino - wall version

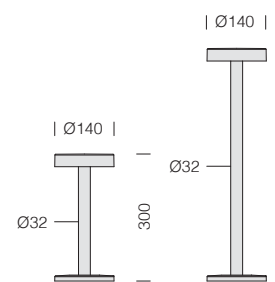
		CLD			LUMEN OUTPUT (tq= 25 °C)	
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI	
LED	graphite	1.80	511165-00	10	4000K - 801lm - CRI>80	
			511165-39		3000K - 745lm - CRI>80	
LED	white	1.80	511166-00	10	4000K - 801lm - CRI>80	
			511166-39		3000K - 745lm - CRI>80	



new



IP65IK08

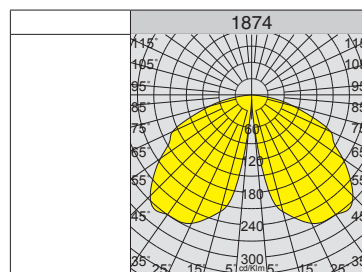
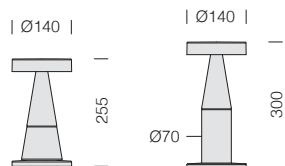
**1866 Portofino slim - short version**

		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	0.80	511142-00	10	4000K - 801lm - CRI>80
			511142-39		3000K - 745lm - CRI>80

1867 Portofino slim - medium version

LED - PORTABLE DIM - medium version					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	1.60	511152-00	10	4000K - 801lm - CRI>80
			511152-39		3000K - 745lm - CRI>80

IP65IK08

**1881 Portofino - short version**

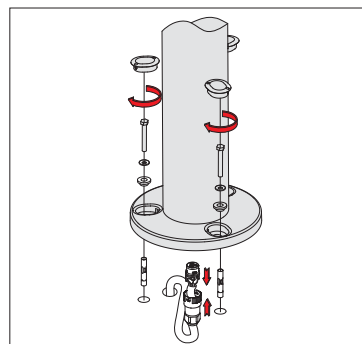
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	1.20	511141-00	10	4000K - 801lm - CRI>80
			511141-39		3000K - 745lm - CRI>80

Upon request: corten version, with sub-code 2191.

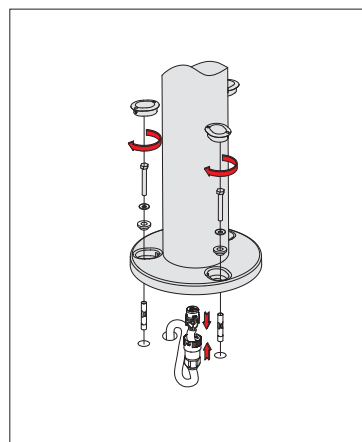
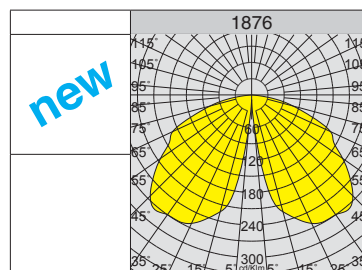
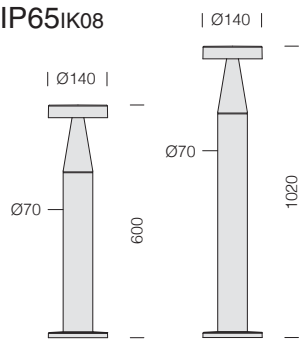
1874 Portofino - short version

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	1.20	511140-00	10	4000K - 801lm - CRI>80
			511140-39		3000K - 745lm - CRI>80

Upon request: corten version, with sub-code 2191.



IP65IK08

**1875 Portofino - medium version**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	1.60	511150-00	10	4000K - 801lm - CRI>80
			511150-39		3000K - 745lm - CRI>80

Upon request: corten version, with sub-code 2191.

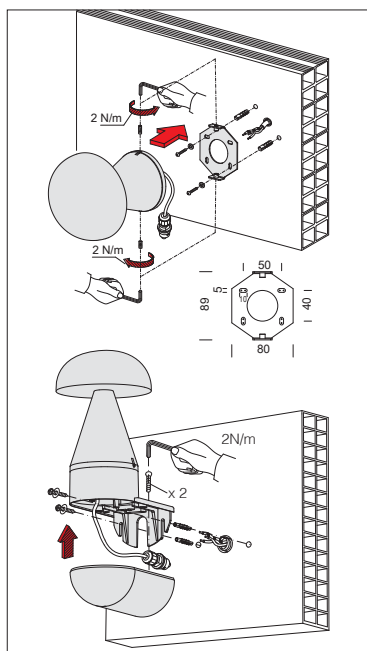
1876 Portofino - tall version

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	2.50	511155-00	18	4000K - 1360lm - CRI>80
			511155-39		3000K - 1270lm - CRI>80

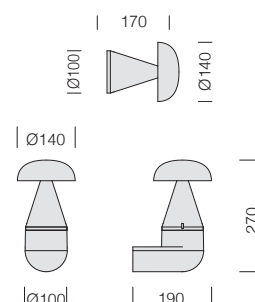
Upon request: corten version, with sub-code 2191.



art. 1882



IP65IK08

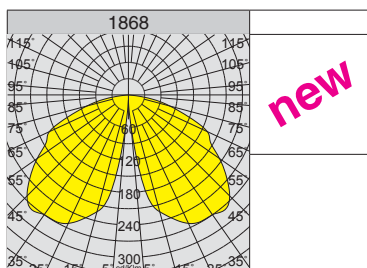


1877 Portofino - wall version

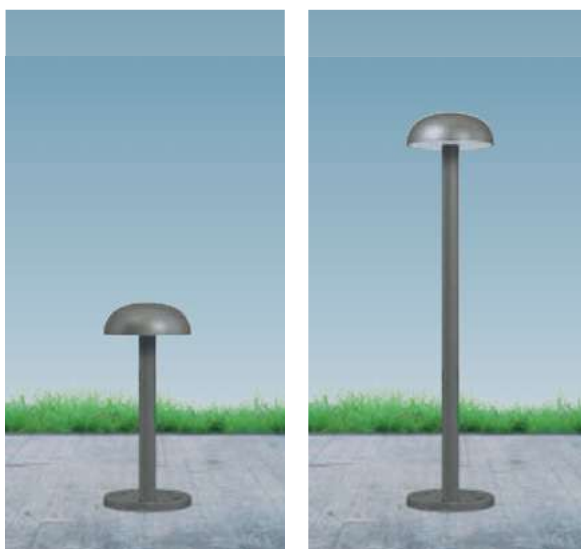
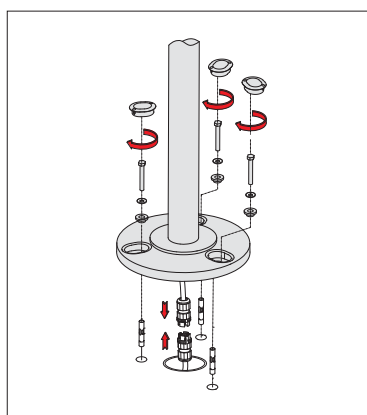
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	0.90	511170-00	10	4000K - 801lm - CRI>80
			511170-39		3000K - 745lm - CRI>80
LED	white	0.90	511171-00	10	4000K - 801lm - CRI>80
			511171-39		3000K - 745lm - CRI>80

1882 Portofino - wall version

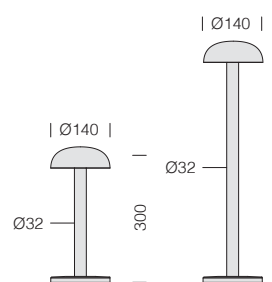
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	1.80	511175-00	10	4000K - 801lm - CRI>80
			511175-39		3000K - 745lm - CRI>80
LED	white	1.80	511176-00	10	4000K - 801lm - CRI>80
			511176-39		3000K - 745lm - CRI>80



new



IP65IK08

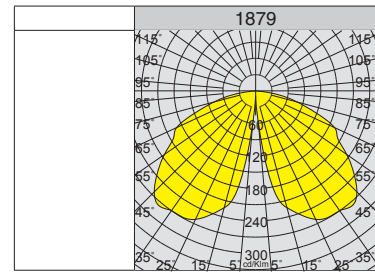
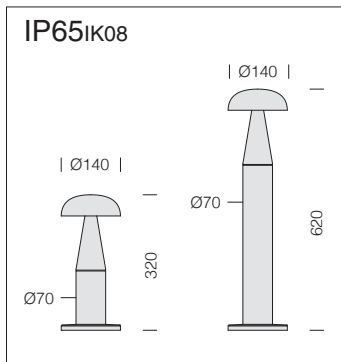


1866 Portofino slim - short version

		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	0.90	511182-00	10	4000K - 801lm - CRI>80
			511182-39		3000K - 745lm - CRI>80

1869 Portofino slim - medium version

		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code	W tot	K - ølm (230V) - CRI
LED	graphite	1.10	511192-00	10	4000K - 801lm - CRI>80
			511192-39		3000K - 745lm - CRI>80

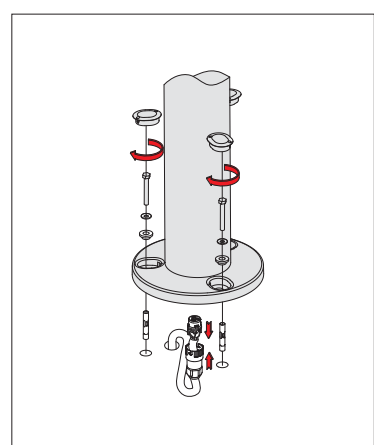
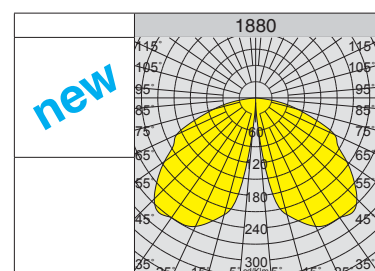
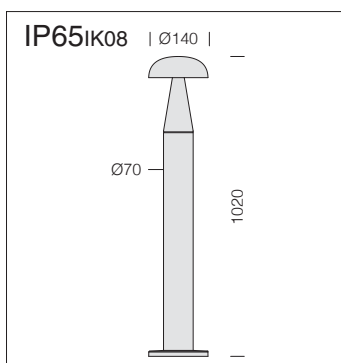
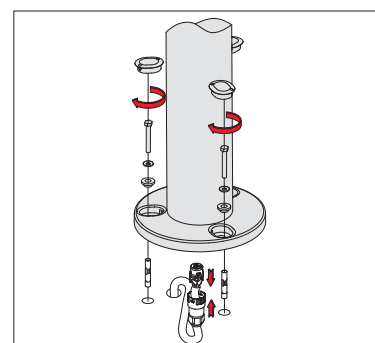


1878 Portofino - short version					
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	1.30	511180-00	10	4000K - 801lm - CRI>80
			511180-39		3000K - 745lm - CRI>80

Upon request: corten version, with sub-code 2191.

1879 Portofino - medium version					
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	1.70	511190-00	10	4000K - 801lm - CRI>80
			511190-39		3000K - 745lm - CRI>80

Upon request: corten version, with sub-code 2191.



1880 Portofino - tall version					
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm (230V) - CRI
LED	graphite	2.60	511195-00	18	4000K - 1360lm - CRI>80
			511195-39		3000K - 1270lm - CRI>80

Upon request: corten version, with sub-code 2191.



GENERAL CHARACTERISTICS

Housing: in extruded aluminium, cylindrical section.

Cap: made of die-cast aluminium.

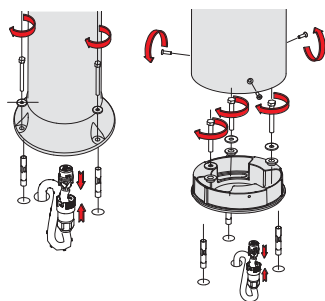
Diffuser: in polycarbonate, clear vandal resistant and V2 self-extinguishing, UV-stabilised.

Painting: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

LED: Luminous flux maintenance 80%: 50.000h (L80B20).

OTHER CHARACTERISTICS

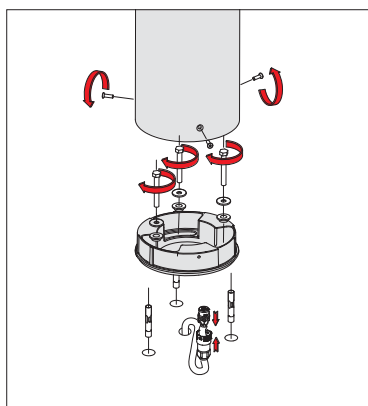
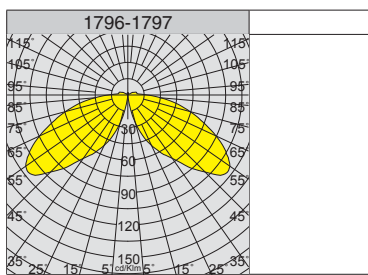
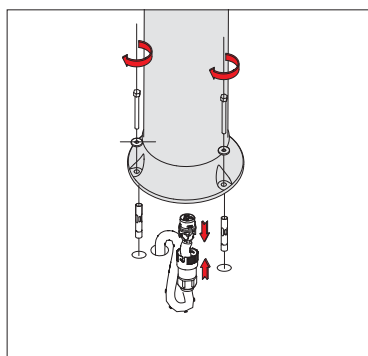
Complete with base and anchor bolts to bury. Supplied with socket-pin connector for quick installation and air recycle valve.



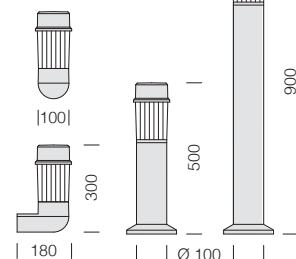
UPON REQUEST

Corten version, with **sub-code 2191**.





IP54IK03



Diffuser: in polycarbonate, clear frosted vandal resistant and V2 self-extinguishing, UV-stabilised.

1533 Faro 2 - short version

wattage (24V)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm (125mA) - CRI
LED	graphite	2,20	510260-00	8	4000K - 424lm - CRI 80
	corten		510260-2191		

1531 Faro 2 - tall version

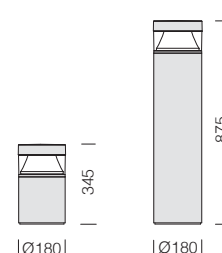
wattage (24V)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm (125mA) - CRI
LED	graphite	2,90	510060-00	8	4000K - 424lm - CRI 80
	corten		510060-2191		

1533 Faro 2 - wall version

wattage (24V)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm (125mA) - CRI
LED	graphite	1.60	510460-00	8	4000K - 424lm - CRI 80
	corten		510460-2191		



IP65IK10



1796 Faro 5 - short version

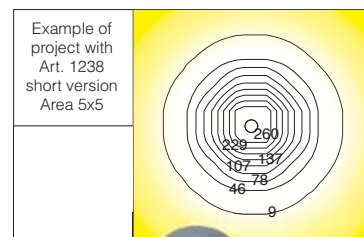
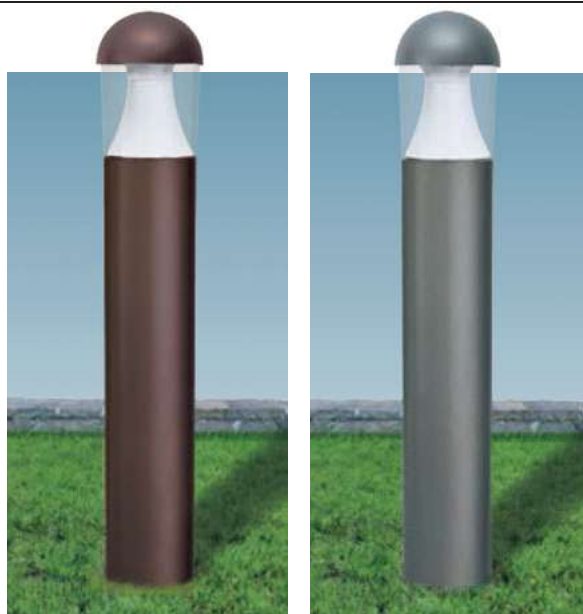
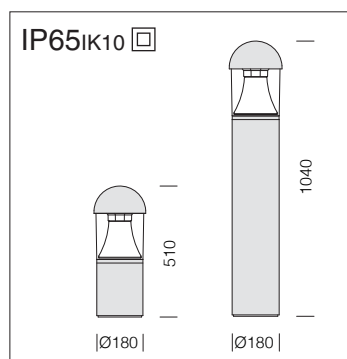
wattage (350mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm 350mA - CRI
LED	graphite	4.50	510620-00	7	4000K - 775lm - CRI 80
			510620-39		3000K - 720lm - CRI 80

Upon request: corten version, with sub-code 2191.

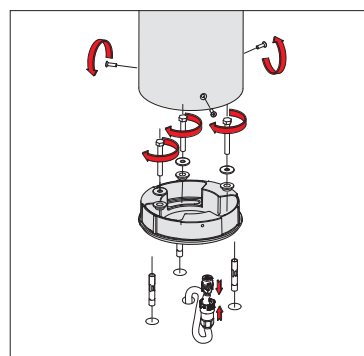
1797 Faro 5 - tall version

wattage (350mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm 350mA - CRI
LED	graphite	6.80	510630-00	7	4000K - 775lm - CRI 80
			510630-39		3000K - 720lm - CRI 80
LED	graphite	6.80	510631-00	14	4000K - 1500lm - CRI 80
			510631-39		3000K - 1395lm - CRI 80

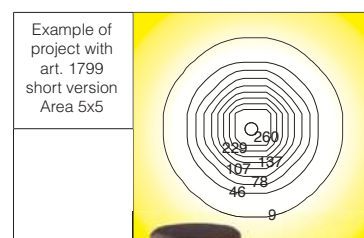
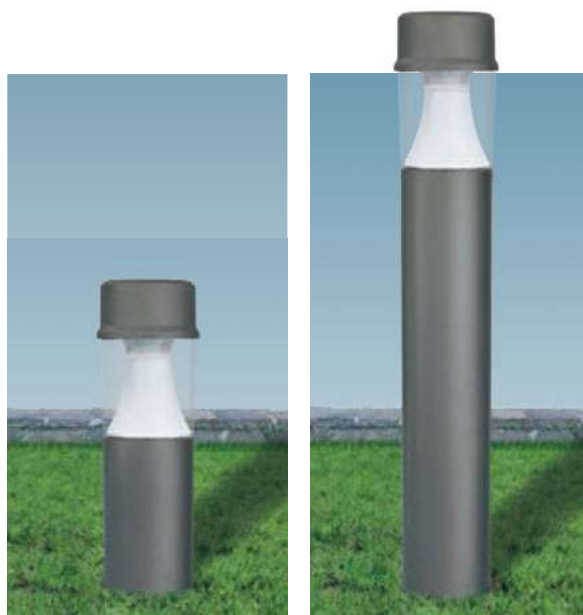
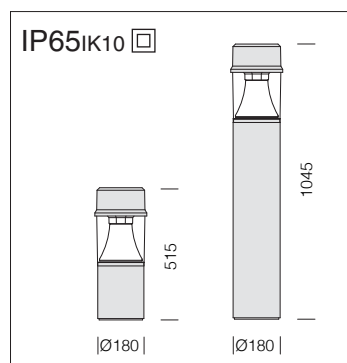
Upon request: corten version, with sub-code 2191.



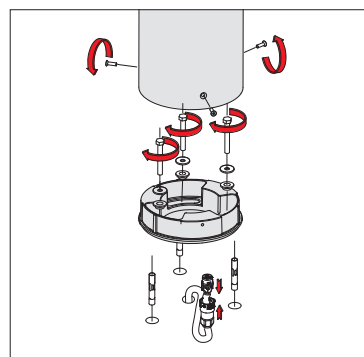
1238 Faro - short version					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (110mA)	colour	weight	code	W tot	K - ølm 110mA - CRI
LED	graphite	4.80	510600-00	9	4000K - 484lm - CRI>80
			510600-39		3000K - 450lm - CRI>80
Upon request: corten version, with sub-code 2191.					



1239 Faro - tall version					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (110mA)	colour	weight	code	W tot	K - ølm 110mA - CRI
LED	graphite	7.10	510610-00	9	4000K - 484lm - CRI>80
			510610-39		3000K - 450lm - CRI>80
Upon request: corten version, with sub-code 2191.					



1799 Faro 4 - short version					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (110mA)	colour	weight	code	W tot	K - ølm 110mA - CRI
LED	graphite	4.80	511015-00	9	4000K - 484lm - CRI>80
			511015-39		3000K - 450lm - CRI>80
Upon request: corten version, with sub-code 2191.					



1798 Faro 4 - tall version					
		CLD			LUMEN OUTPUT (tq= 25 °C)
wattage (110mA)	colour	weight	code	W tot	K - ølm 110mA - CRI
LED	graphite	7.10	511025-00	9	4000K - 484lm - CRI>80
			511025-39		3000K - 450lm - CRI>80
Upon request: corten version, with sub-code 2191.					



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

Base: in die-cast aluminium.

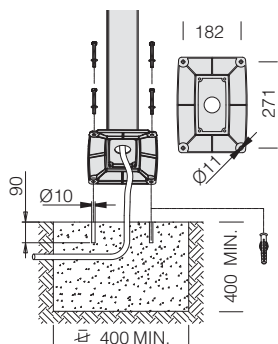
Column: in extruded aluminium.

Diffuser: in opal, V2 polycarbonate, shatterproof and self-extinguishing, UV-stabilised.

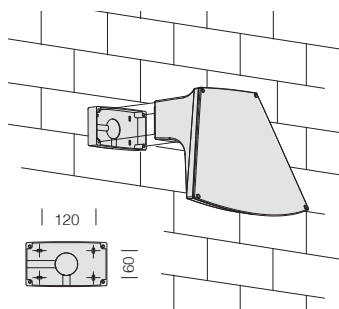
Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

OTHER INFORMATION

The column version is equipped with anchors and socket-plug connector for quick installation.



The wall version comes with mounting connection.

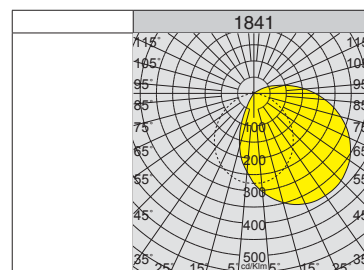
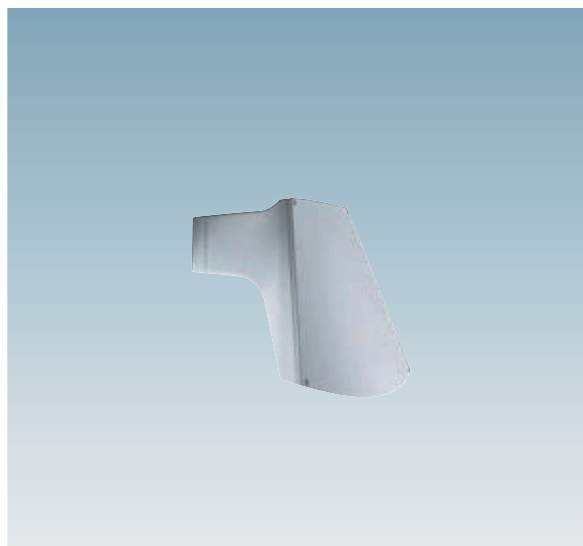
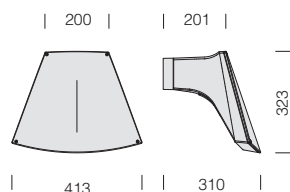


UPON REQUEST

Corten version, with **sub-code 2191**.



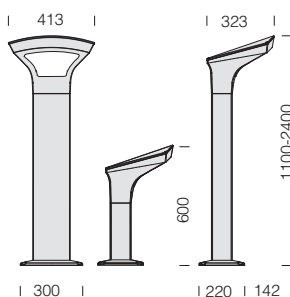
IP66IK08

**1841 Bitta 2 wall version**

wattage (110mA)		CLD		LUMEN OUTPUT (tq= 25 °C)	
colour		weight	code	W tot	K - ølm 110mA - CRI
LED	grey 9007	3,20	511440-00	11	4000K - 549lm - CRI 80
	graphite		511441-00		
	anthracite		511442-00		
	corten		511440-2191		



IP66IK08 □

**1840 Bitta 1**

wattage (110mA)		CLD		LUMEN OUTPUT (tq= 25 °C)	
colour		weight	code	h	W tot
LED	grey 9007	6.20	511430-00	600	11
	graphite		511432-00		
	anthracite		511433-00		
	corten		511430-2191		
LED	grey 9007	8.20	511435-00	1100	11
	graphite		511436-00		
	anthracite		511437-00		
	corten		511435-2191		

1849 Bitta 3

wattage (350mA)		CLD		LUMEN OUTPUT (tq= 25 °C)	
colour		weight	code	h	W tot
LED	grey 9007	13.00	511443-00	2400	27
	graphite		511444-00		
	anthracite		511445-00		
	corten		511443-2191		





GENERAL CHARACTERISTICS

Cover: made of die-cast aluminium.

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60mm.

Diffuser: in vandal-resistant V2 self-extinguishing matt polycarbonate, UV-stabilized.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard supply: supplied with socket-pin connector for quick installation.

LED: Luminous flux maintenance 80% : 50.000h (L80B20). Power factor 0.9.

COMPARISON: AMALFI LED - TRADITIONAL LAMPS		
LAMP	WATTAGE	ENERGY SAVING
ALO 70	70W	80%
FLC 23	23W	40%
MBF 50	50W	72%
AMALFI LED	14W	-

This product is an evolution of the classic street lamp, which has become obsolete and no longer compliant with existing lighting pollution regulations. **Amalfi** ensures optimal distribution of light without upward dispersion and offers the performance of energy-efficient LEDs with excellent colour rendering; it is made to allow quick and easy installation. Thanks to the quality of the materials used and innovative LED-centric design, the Amalfi fixture is built to last.

RG0

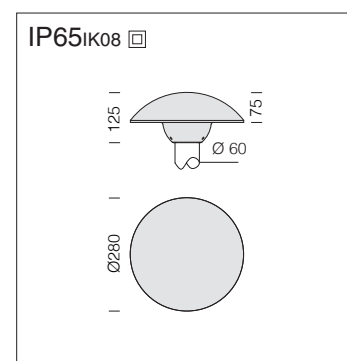
U.V.

ZONA 1

3000K

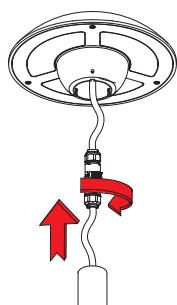
4000K

Upon request: sand coloured version.



Upon request: LED 22W tot. (500mA) 4000K - 1200lm - CRI 80 version.

Its practical design makes it the ideal choice for the installation onto posts with 60mm in diameter and the supplied socket and plug set ensures quick and easy cabling.



1774 Amalfi					
		CLD		LUMEN OUTPUT (tg= 25 °C)	
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	graphite	2.00	424241-00	14	4000K - 877lm - CRI 80
			424241-39		3000K - 816lm - CRI 80
LED	white	2.00	424242-00	14	4000K - 877lm - CRI 80
			424242-39		3000K - 816lm - CRI 80

GENERAL CHARACTERISTICS

Base: in die-cast aluminium.

Globe: in shatterproof and self-extinguishing V2 polycarbonate, UV-stabilised and anti-yellowing. Exent transparency for perfect light penetration.

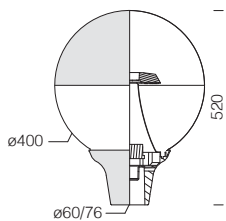
Central cone: in black painted aluminium against light pollution.

Equipment: safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module. Complete with plug-socket for quick installation.

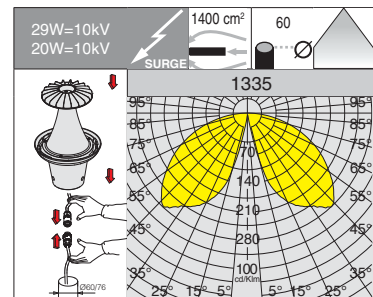
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).



IP65IK08 □



On request: available 2200K/2700K versions.

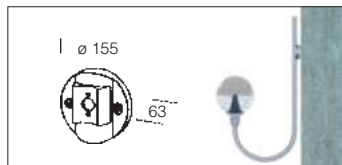


1335 Globo - anti-light pollution

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED	silver	4,50	425600-00	29	4000K - 2119lm - CRI 80
			425600-39		3000K - 1971lm - CRI 80
LED	silver	4,50	425601-00	20	4000K - 1380m - CRI 80
			425601-39		3000K - 1283lm - CRI 80

acc. 1361 wall mounting

grey	426987-00
Die-cast aluminium spacer and base. To install arms acc 1362.	



acc. 1362 upward arm

1000 grey	426906-00
1500 grey	426907-00
Steel.	





GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

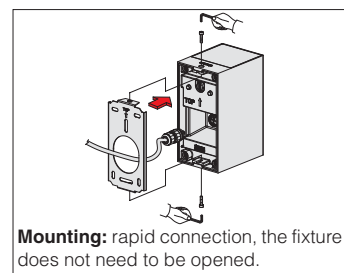
Diffuser: in extra-clear tempered glass, 4 mm thick, thermal shock and impact resistant.

Optics: in high-performance metallic V0 polycarbonate.

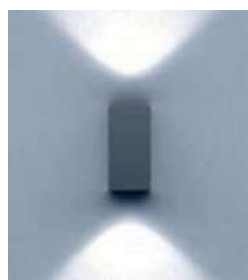
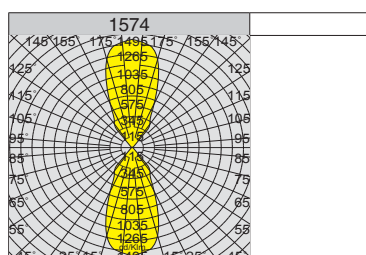
Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

LED: Luminous flux maintenance 80%: 50.000h (L80B20)
Power factor ≥ 0.92



Mounting: rapid connection, the fixture does not need to be opened.

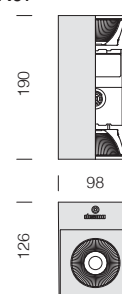


CRI 90

AMBER
COB



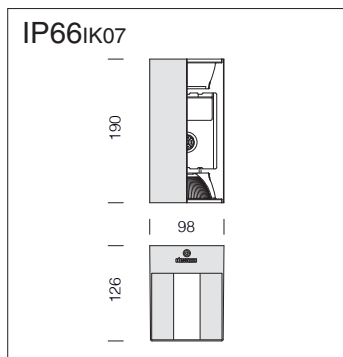
IP66IK07



Standard supply: supplied with plate for wall installation and cable with with airtight connector for mains connection.

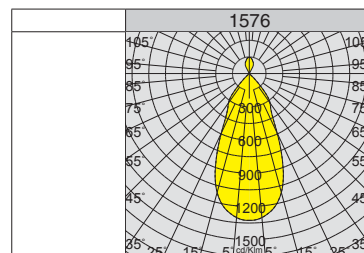
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1574 Square - wall version - direct/indirect light					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED COB	white	2.50	420631-00	29	4000K - 2167lm - CRI 90
	graphite		420632-00		
LED COB	white	2.50	420634-00	29	3000K - 2167lm - CRI 90
	graphite		420635-00		
LED COB AMBER	white	2.50	420631-73	26	2200K - 3178lm - AMBER
	graphite		420632-73		



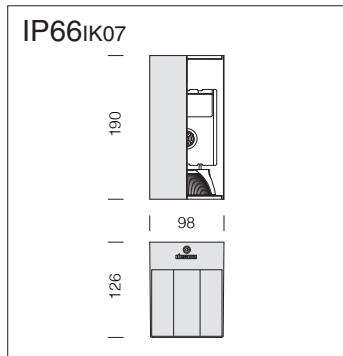
Standard supply: supplied with plate for wall installation and cable with with airtight connector for mains connection.

CRI 90



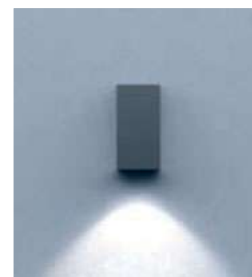
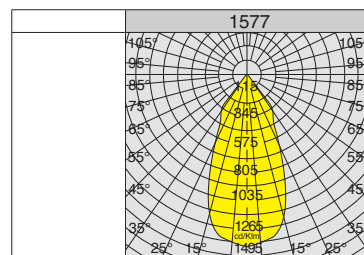
1576 Square - wall version - direct/indirect light with narrow beam					
wattage (350mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	white	2.50	420646-00	16	4000K - 1220lm - CRI 90
	graphite		420647-00		
LED COB	white	2.50	420648-00	16	3000K - 1220lm - CRI 90
	graphite		420649-00		
wattage (700mA)					K - ølm 700mA - CRI
LED COB	white	2.50	420641-00	31	4000K - 2234lm - CRI 90
	graphite		420642-00		
LED COB	white	2.50	420644-00	31	3000K - 2234lm - CRI 90
	graphite		420645-00		

RG0



Standard supply: supplied with plate for wall installation and cable with with airtight connector for mains connection.

CRI 90

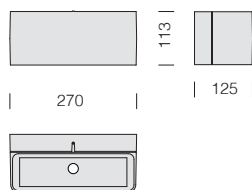


1577 Square - wall version - direct light					
wattage (350mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	white	2.50	420656-00	15	4000K - 1083lm - CRI 90
	graphite		420657-00		
LED COB	white	2.50	420658-00	15	3000K - 1083lm - CRI 90
	graphite		420659-00		
wattage (700mA)					K - ølm 700mA - CRI
LED COB	white	2.50	420651-00	29	4000K - 2167lm - CRI 90
	graphite		420652-00		
LED COB	white	2.50	420654-00	29	3000K - 2167lm - CRI 90
	graphite		420655-00		

RG0

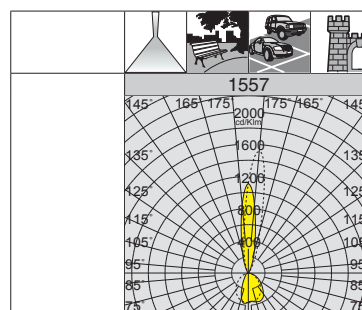


IP65IK07



Upon request: 4000K version with sub-code **-0013**.

3000K



RG0

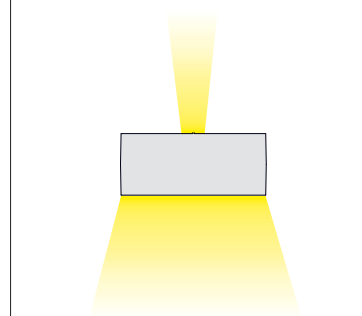
U.V.



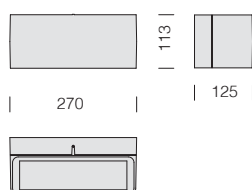
1557 Brick - direct/indirect light with narrow beam

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (500mA)	colour	weight	code	W tot	K - ølm 500mA - CRI
LED	grey 9007	1.00	420610-00	11	3000K - 890lm - CRI 80
	white		420611-00		
	graphite		420612-00		

Direct/indirect light beam to the wall

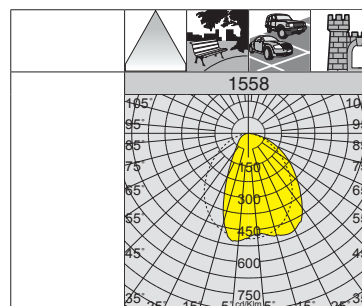


IP65IK07



Upon request: 4000K version with sub-code **-0013**.

3000K



RG0

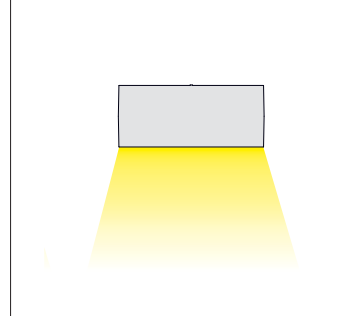
U.V.

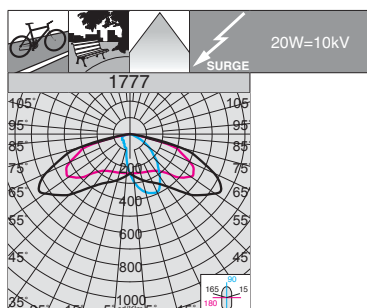


1558 Brick - direct light

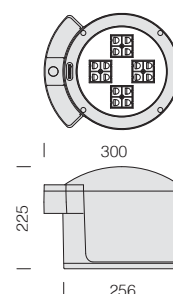
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (500mA)	colour	weight	code	W tot	K - ølm 500mA - CRI
LED	grey 9007	1.00	420620-00	10	3000K - 730lm - CRI 80
	white		420621-00		
	graphite		420622-00		

Direct light beam.

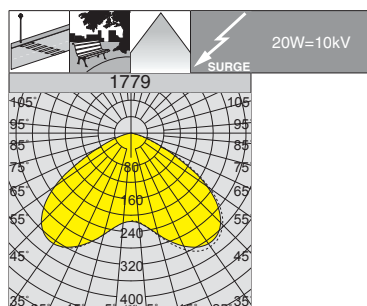




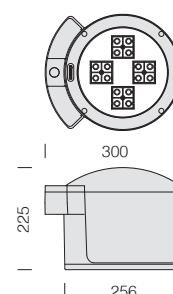
IP65 IK08

**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** resistant to thermal shock and impact 4 mm thick tempered glass.(test UNI EN 12150-1: 2001).**Standard supply:** safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module.**LED:** Luminous flux maintenance 80%: 80.000h (L80B20). Power factor ≥ 0.9 **1777 Musa - pedestrian**

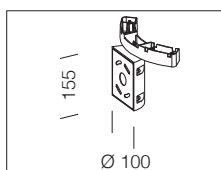
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (210mA)	colour	weight	code	W tot	K - ølm 210mA - CRI
LED	grey 9007+graphite	4.50	423547-00	20	4000K - 2850lm - CRI 70



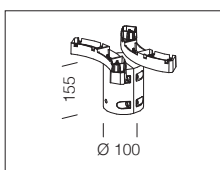
IP65 IK08

**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** resistant to thermal shock and impact 4 mm thick tempered glass.(test UNI EN 12150-1: 2001).**Standard supply:** safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module.**LED:** Luminous flux maintenance 80%: 80.000h (L80B20). Power factor ≥ 0.9 **1779 Musa - wide beam**

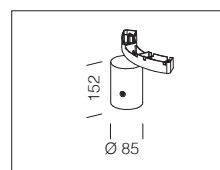
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (210mA)	colour	weight	code	W tot	K - ølm 210mA - CRI
LED	grey 9007+graphite	4.50	423555-00	20	4000K - 3027lm - CRI 70

**acc. 366
wall connection**

graphite 998024
In die-cast aluminium.
for wall mounting.

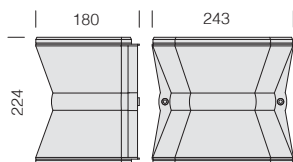
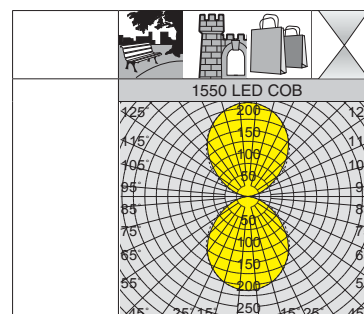
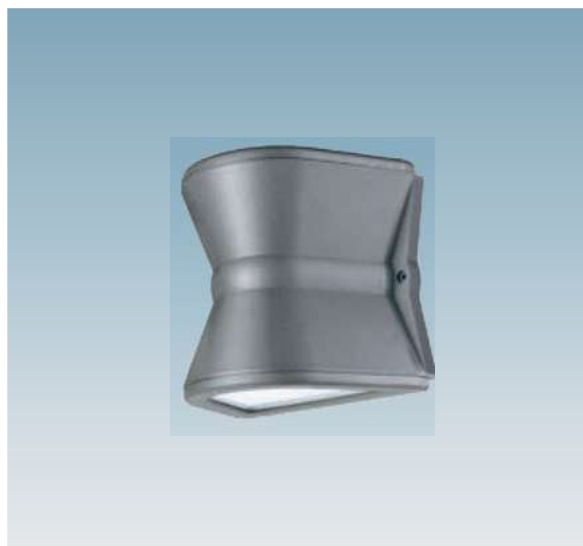
**acc. 365
double pole connector**

graphite 998022-00
In die-cast aluminium.
For installation on a dia.
60 lighting pole in the
two-lamp version.

**acc. 364
single pole connector**

graphite 998020-00
In die-cast aluminium.
For installation on a dia.
60 lighting pole in the
single lamp version.

IP65IK07

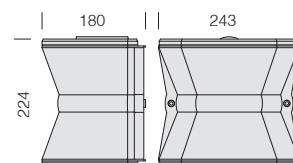
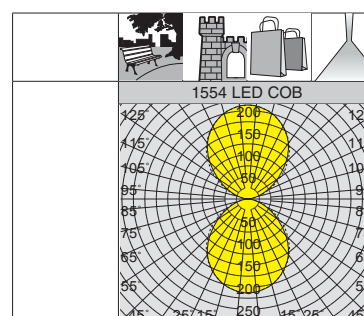
**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** tempered shock and heat resistant glass.**LED COB:** Luminous flux maintenance 70%: 50.000h (L70B50).**1550 Clessidra 4 - direct /indirect light**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED COB	grey 9007	2.70	420590-00	40	4000K - 1595lm - CRI 80
	graphite		420592-00		
	corten		420590-2191		
LED COB	grey 9007	2.70	420583-00	20	4000K - 960lm - CRI 80
	graphite		420584-00		
	corten		420583-2191		

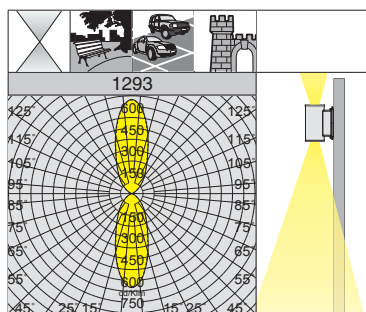
LED (LAMP E27): 15.000h.**1547 Clessidra 4 - direct /indirect light**

		CLD S+L		W tot	LED (tp= 25 °C)
wattage (230V)	colour	weight	code		K - ølm 230V - CRI
LED (LAMP E27)	grey 9007	2.70	420561-00	14	2700K - 1600lm - CRI 80
	graphite		420562-00		

IP65IK07

**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** tempered shock and heat resistant glass.**LED COB:** Luminous flux maintenance 70%: 50.000h (L70B50).**1554 Clessidra 5 - direct /indirect light**

		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED COB	grey 9007	2.70	420598-00	22	4000K - 880lm - CRI 80
	graphite		420599-00		
	corten		420598-2191		
LED COB	grey 9007	2.70	420588-00	12	4000K - 562lm - CRI 80
	graphite		420589-00		
	corten		420588-2191		



Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

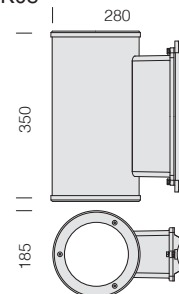
Upon request: corten version, with sub-code 2191.



CRI 90

AMBER COB

IP65IK08



GENERAL CHARACTERISTICS

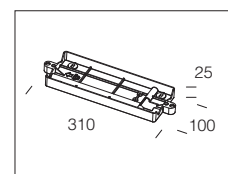
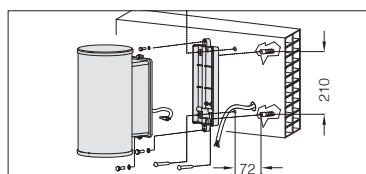
Housing: die-cast aluminium.

Diffuser: tempered glass, 4 mm thick, shock and heat resistant

Standard supply: Safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module. Standard version includes double switching.

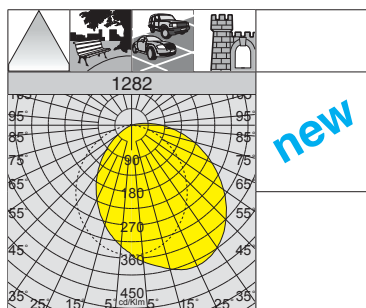
LED: Luminous flux maintenance 70%: 50.000h (L70B50). Power factor ≥ 0.9 .

1293 Cilindro 4					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED COB	grey 9007	6.90	420410-00	42	4000K - 2663lm - FS+FM - CRI 90
			420427-00		4000K - 1897lm - FS+FM - CRI 90
LED COB AMBER	grey 9007	6.90	420410-73	40	2200K - 2096lm - FM+FM - AMBER



acc. 401 wall mounting

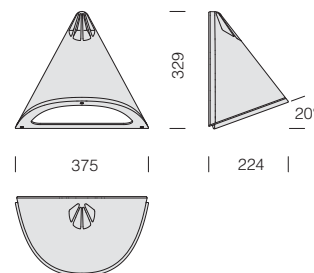
grey	420450-00
corten	420450-2191
Wall mounting for Cilindro.	



Upon request: chrome version.



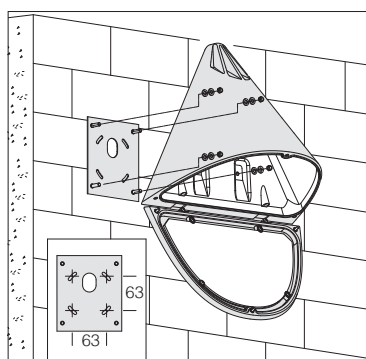
IP65IK07



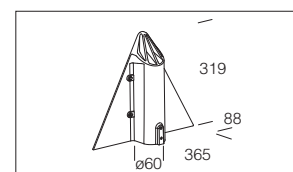
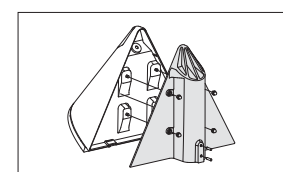
GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium. **Diffuser:** in tempered glass, thermal shock and impact resistant.

LED: Luminous flux maintenance 70%: 50.000h (L70B20). Power factor ≥ 0.9 .



1282 Meridiana					
			CLD	LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	4.00	423095-00	9	4000K - 1119lm - CRI ≥ 80
	graphite		423096-00		

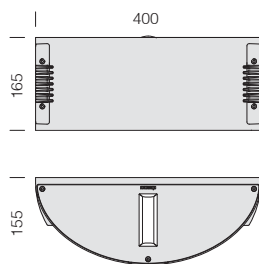


acc. 96 Pole connection Ø 60

s. silver	991217-00
graphite	991218-00

In die-cast aluminium. To be used for fixing Meridiana on pole Ø 60.

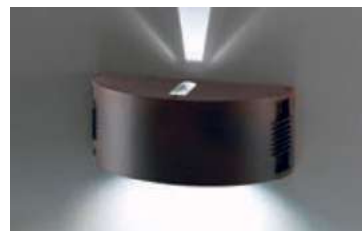
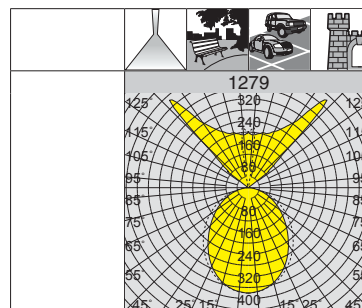
IP65IK07



GENERAL CHARACTERISTICS

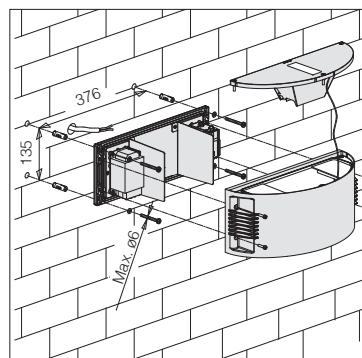
Housing/Frame: in die-cast aluminium. Diffuser: in tempered glass, 8 mm thick, thermal shock and impact resistant.

LED: Luminous flux maintenance 80%: 80.000h (L80B20). Power factor ≥ 0.9 .

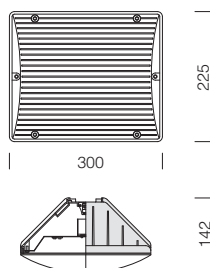


1279 Onda - direct/indirect light with lens

wattage (700mA)	colour	weight	CLD code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm 700mA - CRI
LED	white	3.60	420322-00	17	4000K - 800lm - CRI \geq 80
LED	grey 9007	3.60	420324-00		
LED	graphite	3.60	420325-00		
LED	corten	3.60	420322-2191		



IP65IK08

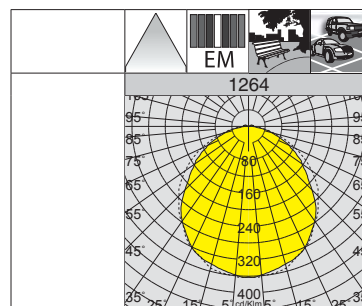


GENERAL CHARACTERISTICS

Housing: in nylon UV-stabilised.

Reflector: hammered aluminium.

Diffuser: anti-glare, vandal resistant, V2 selfExtinguishing, UV-stabilised matt polycarbonate.



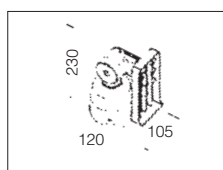
1264 Vega

wattage (350mA)	colour	weight	CLD code	CLD E code	W tot	LUMEN OUTPUT (tq= 25 °C) K - ølm 350mA - CRI
LED	black	1.50	420665-00	420665-07	20	4000K - 1657lm - CRI 70
	grey		420666-00	420666-07		4000K - 1657lm - CRI 70
	black	1.50	420669-00		35	4000K - 3315lm - CRI 70

acc. 1266 joint

black	420915-00
grey	420916-00

1-lamp adjustable support in nylon.
For Ø 60 poles.



Self adhesive pictograms available:



GENERAL CHARACTERISTICS

Body: shatter-proof, UV-stabilized thermoplastic material, RAL7045 grey colour.

Reflector: in aluminium.

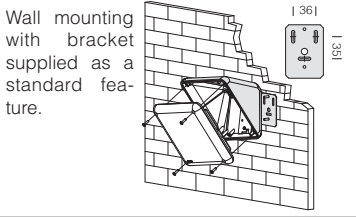
Diffuser: in internally matt, anti-glare, shatter-proof and V2 selfExtinguishing, UV-stabilized polycarbonate.

Equipment: bowl sealing in black expanded EPDM; external screws in galvanized stainless steel and black O-rings. Complete with fixing plate.

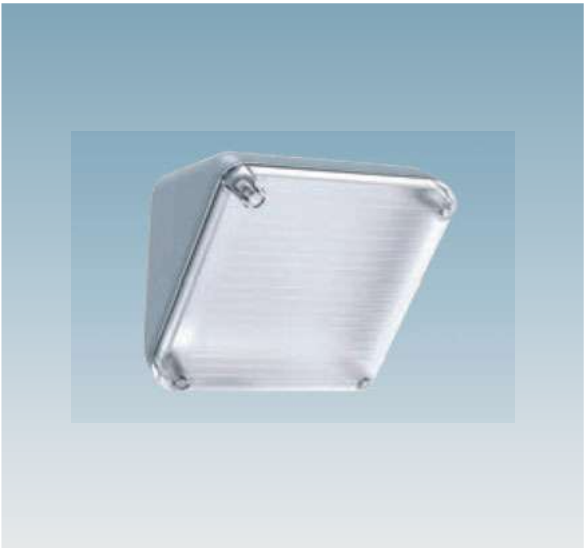
Mounting: wall or pole(ø 60).

LED: 230V version: luminous flux maintenance 70%: 50.000h (L70B50).

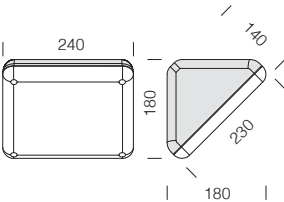
350mA version: luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥0.9.



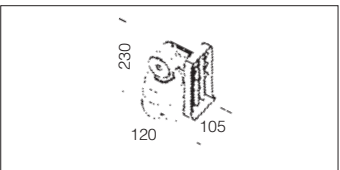
ON-OFF Light sensor / presence (sub-code -19): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past. When there is movement within the sensor's detection range, the light will remain ON. When no further movement is detected, the light will switch OFF after a pre-set time.



IP65IK08

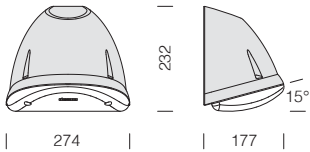


1260 Vega							
		CLD		CLD E	CLD (radar sensor)	W tot	LUMEN OUTPUT (tg= 25 °C)
wattage (230V)	colour	weight	code	code	code		K - ølm 230V - CRI
LED	grey	1.30	420690-00		420690-19	14	4000K - 950lm - CRI 80
wattage (350mA)							K - ølm 350mA - CRI
LED	grey	1.30	420691-00	420691-07	420691-19	17	4000K - 2010lm - CRI 80



acc. 1266 joint	
grey	420917-00
1-lamp adjustable support in nylon. For Ø 60 poles.	

IP65IK08



GENERAL CHARACTERISTICS

Housing: in fiberglass nylon, vandal resistant.

Reflector: anodically oxidised aluminium 99.85.

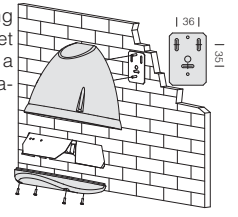
Diffuser: satin-finish polycarbonate, non-dazzle interior, shatterproof and self-extinguishing V2, stabilised against UV rays.

Mounting: wall or pole (Ø 60)

LED: Luminous flux maintenance 70%: 50.000h (L70B50). Power factor ≥ 0.9 .



Wall mounting with bracket supplied as a standard feature.



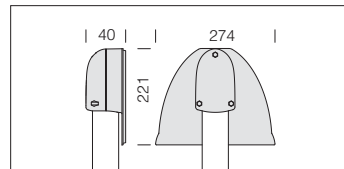
1275 Green

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	1.80	428605-00	14	4000K - 1300lm - CRI 80

acc. 502 single Ø60 pole connection

grey 991260-00

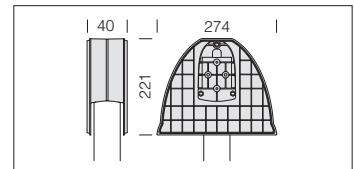
Adapter for 1 Green attachment on Ø 60 pole.



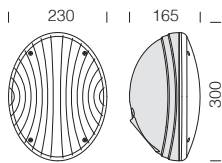
acc. 503 double Ø60 pole connection

grey 991261-00

Adapter for 2 Green attachment on Ø 60 pole.



IP65IK08



GENERAL CHARACTERISTICS

Housing: in fibreglass nylon stabilised against UV rays.

Reflector: in matt aluminium.

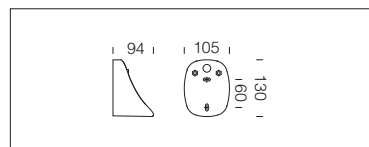
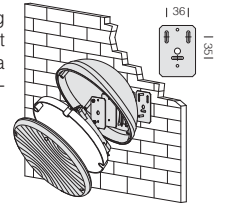
Diffuser: satin-finish polycarbonate, non-dazzle interior, shatterproof and self-extinguishing V2, stabilised against UV rays.

Mounting: wall or pole (Ø 60)

LED: Luminous flux maintenance 70%: 50.000h (L70B50). Power factor: ≥ 0.85 .



Wall mounting with bracket supplied as a standard feature.



acc. 451 wall/ceiling attachment

black 991250-00

grey 991251-00

Made of fibreglass nylon which enables Garden to be mounted directly on a wall/ceiling.

1280 Garden

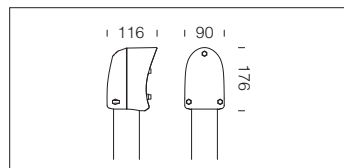
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	black	1.30	420845-00	20	4000K - 1439lm - CRI 80
	grey		420846-00		

acc. 452 single pole connection

black 991252-00

grey 991253-00

Made of fibreglass nylon which enables Garden to be mounted on a Ø60 pole.

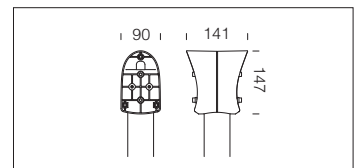


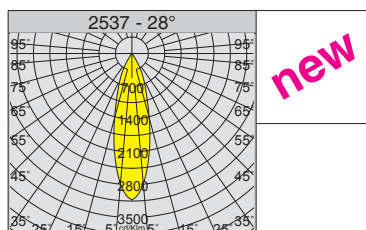
acc. 453 double pole connection

black 991254-00

grey 991255-00

Made of fibreglass nylon which enables two Garden to be mounted on a Ø60 pole.

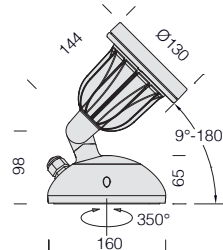




CRI 90



IP66IK08



GENERAL CHARACTERISTICS

Housing/frame/base: in die-cast aluminium with wide cooling fins for heat dissipation; with central articulated joint in die-cast aluminium

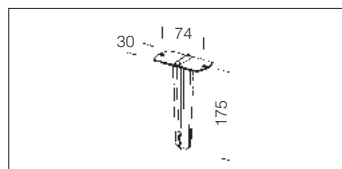
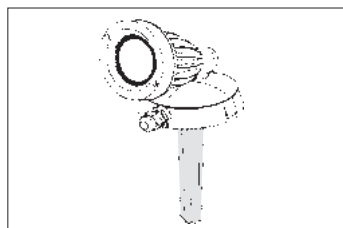
LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥ 0.92 .

3000K - CRI 90 (sub-code -39)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	1831lm - 13°	42	2869lm - 13°
	1888lm - 28°		2960lm - 28°
	1885lm - 48°		2955lm - 48°
2200K - AMBER (sub-code -73)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	2159lm - 13°	42	3383lm - 13°
	2226lm - 28°		3489lm - 28°
	2223lm - 48°		3484lm - 48°

2537 Koala Big - with reflector

wattage	colour	weight	CLD	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
LED COB	grey 9006	1.50	code	code	28	K - ølm - CRI - degrees
			431880-00	431880-0041		4000K - 1928lm - CRI 90 - 13°
			431882-00	431882-0041		4000K - 1988lm - CRI 90 - 28°
LED COB	grey 9006	1.50	431883-00	431883-0041	42	4000K - 1985lm - CRI 90 - 48°
			431884-00	431884-0041		4000K - 3021lm - CRI 90 - 13°
			431885-00	431885-0041		4000K - 3116lm - CRI 90 - 28°
			431886-00	431886-0041		4000K - 3111lm - CRI 90 - 48°

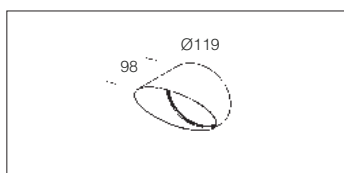
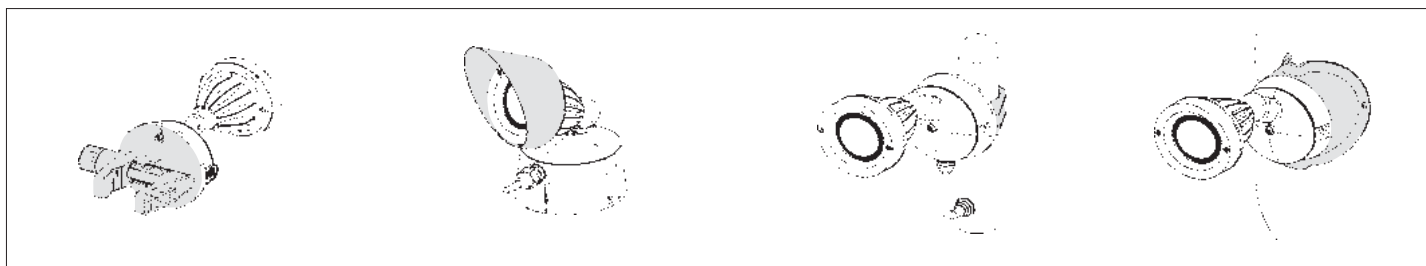
ACCESSORIES KOALA - KOALA BIG



acc. 119 spike

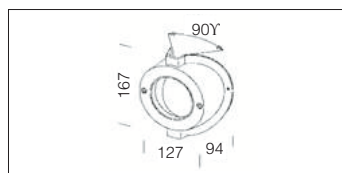
black	991335-00
In fiber glass nylon. For planting Koala and Koala Big into the ground.	

ACCESSORIES KOALA



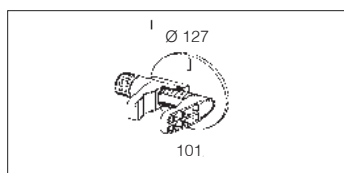
acc. 114 conveyor

grey	991330-00
In aluminium. To direct the light beam in one direction. Only for art. Koala.	



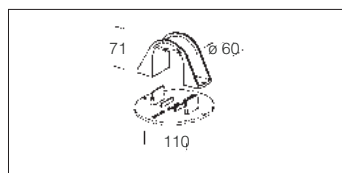
acc. 116 corner support

black	991332-00
In fibreglass nylon. To install Koala on a corner.	



acc. 118 clamp

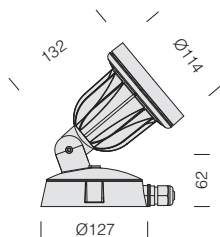
black	991334-00
In fiber glass nylon. Enables Koala to be installed on different surfaces without the need to fix it definitively. Clamp opening between 20mm (min) and 60mm (max).	



acc. 120 pole support

black	991336-00
In fibreglass nylon. To apply Koala on any Ø 60 pole in any position.	

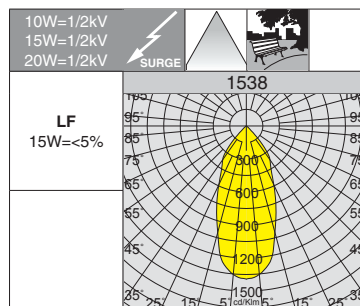
IP65IK08

**GENERAL CHARACTERISTICS**

Housing/frame: in die-cast aluminium with wide cooling fins for heat dissipation.

LED: Luminous flux maintenance 80%: 50.000h (L80B20).
Power factor $\geq 0,95$.

CRI 90



RG0

U.V.

90°

360°

LOW
FLICKER

3000K

4000K

1537 Koala - COB					
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code		K - ølm - CRI - degrees
LED COB	grey 9006	0.80	431828-00	15	3000K - 1195lm - CRI 90 - 46°
	graphite		431829-00		

Upon request: corten version with sub-code -2191, and 4000K LED version.

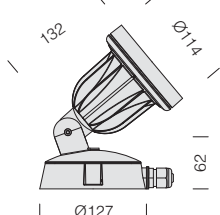
LED: Luminous flux maintenance 70%: 50.000h (L70B50).
Power factor $\geq 0,95$.

DOB = driver on board

1538 Koala - COB 230V					
		CLD		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (230V)	colour	weight	code		K - ølm 230V - CRI - degrees
LED COB (DOB)	grey 9006	0.80	431837-00	10	4000K - 798lm - CRI 80 - 44°
	graphite		431838-00		
LED COB (DOB)	grey 9006	0.80	431839-00	20	4000K - 1597lm - CRI 80 - 44°
	graphite		431840-00		

Upon request: corten version with sub-code -2191.

IP65IK08



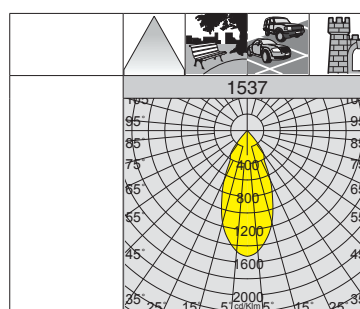
LED SMD 6W = Gu10 (230V)

GENERAL CHARACTERISTICS

Housing/frame: in die-cast aluminium with wide cooling fins for heat dissipation.

LED: Luminous flux maintenance 70%: 25.000h (L70B50).
Power factor $\geq 0,95$.

3000K



Upon request: chrome version.



RG0

U.V.

90°

360°

1537 Koala - ES						
		CLD S+L		CLD -D (IGBT)	W tot	LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	code		K - ølm 230V - CRI - degrees
LED SMD (GU10)	grey 9006	0.80	431815-00		6	3000K - 429lm - CRI 80 - 38°
	graphite		431824-00			
LED SMD (GU10)	grey 9006	0.80		431802-00	7	3000K - 429lm - CRI 80 - 38°
	graphite			431803-00		

Upon request: corten version with sub-code -2191.



GENERAL CHARACTERISTICS

Housing/frame: in die-cast aluminium with central articulated joint in die-cast aluminium.

Base: in die-cast aluminium.

Version with reflector: in high-performance silver aluminium.

Version with lens: in PMMA with high efficiency output and very low glare rate.

Diffuser: in extra clear tempered glass, 4 mm thick, resistant to thermal shocks and impacts.

Graphite coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Grey 9006/white coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%: 50.000h (L80B20).

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with

EN 61547.

It works in two modes:

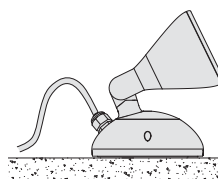
- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

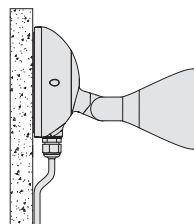


Product with a very low flicker; uniform light for greater eye protection.

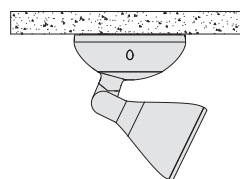
OTHER INFORMATION



art. 2564-2565: ideal for ground installation.



art. 2566-2567: ideal for wall mounting where the light point is distant from the fixture.



art. 2568-2569: ideal for wall mounting where the light point is hidden.

UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

DIMM Version **CLD D-D**
DIG (DALI) wiring with **subcode -0041:** thanks to pre-programmed settings or a software programme, this type of wiring allows accurate light emission dimming.



LED 3000K - CRI 90
sub-code -39.



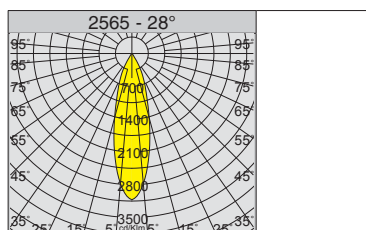
AMBER COB 2200K
subcode -73:

lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



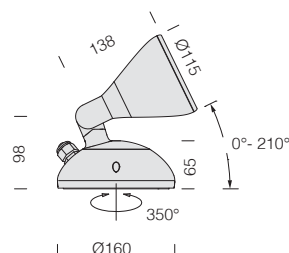
Ideal for ground installation.



3000K - CRI 90 (sub-code -39)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	1831lm - 13°	42	2869lm - 13°
	1888lm - 28°		2960lm - 28°
	1885lm - 48°		2955lm - 48°
2200K - AMBER (sub-code -73)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	2159lm - 13°	42	3383lm - 13°
	2226lm - 28°		3489lm - 28°
	2223lm - 48°		3484lm - 48°



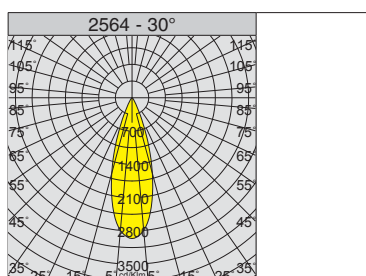
IP66IK08



LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥0.92.

Upon request version with:
• CLD D-D (DALI) wiring with sub-code -0041.

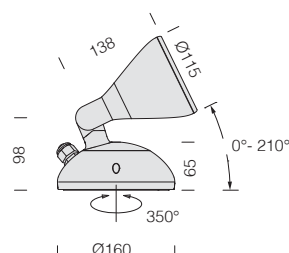
2565 Podio - with reflector					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422510-00	28	4000K - 1928lm - CRI 90 - 13°
	graphite		422511-00		
LED COB	grey 9006	1.50	422514-00	28	4000K - 1988lm - CRI 90 - 28°
	graphite		422515-00		
LED COB	grey 9006	1.50	422518-00	28	4000K - 1985lm - CRI 90 - 48°
	graphite		422519-00		
LED COB	grey 9006	1.50	422512-00	42	4000K - 3021lm - CRI 90 - 13°
	graphite		422513-00		
LED COB	grey 9006	1.50	422516-00	42	4000K - 3116lm - CRI 90 - 28°
	graphite		422517-00		
LED COB	grey 9006	1.50	422558-00	42	4000K - 3111lm - CRI 90 - 48°
	graphite		422559-00		



3000K - CRI 90 (sub-code -39)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	1750lm - 15°	42	2743lm - 15°
	1826lm - 30°		2862lm - 30°
2200K - AMBER (sub-code -73)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	2064lm - 15°	42	3234lm - 15°
	2153lm - 30°		3374lm - 30°



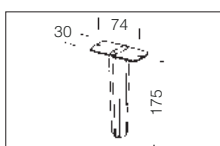
IP66IK08



LED: Luminous flux maintenance 80%: 50.000h (L80B20). Power factor ≥0.92.

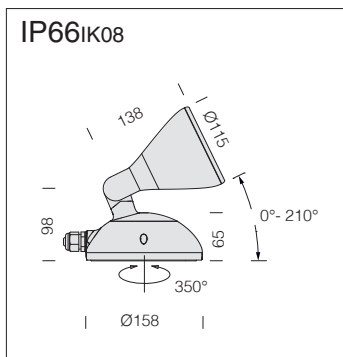
Upon request version with:
• CLD D-D (DALI) wiring with sub-code -0041.

2564 Podio - with lens					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422500-00	28	4000K - 1843lm - CRI 90 - 15°
	graphite		422501-00		
LED COB	grey 9006	1.50	422504-00	28	4000K - 1923lm - CRI 90 - 30°
	graphite		422505-00		
LED COB	grey 9006	1.50	422502-00	42	4000K - 2888lm - CRI 90 - 15°
	graphite		422503-00		
LED COB	grey 9006	1.50	422506-00	42	4000K - 3013lm - CRI 90 - 30°
	graphite		422507-00		

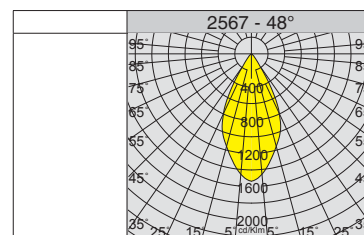


acc. 119 spike	
black	991335-00
In fiber glass nylon. For planting Podio into the ground.	

Ideal for wall mounting where the light point is distant from the fixture.



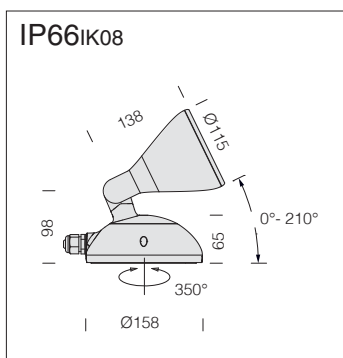
LED: Luminous flux maintenance 80%: 50.000h (L80B20).
Power factor ≥ 0.92 .



3000K - CRI 90 (sub-code -39)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	1831lm - 13°	42	2869lm - 13°
	1888lm - 28°		2960lm - 28°
	1885lm - 48°		2955lm - 48°
2200K - AMBER (sub-code -73)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	2159lm - 13°	42	3383lm - 13°
	2226lm - 28°		3489lm - 28°
	2223lm - 48°		3484lm - 48°

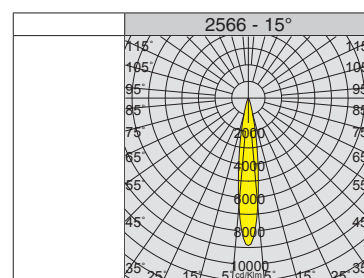


2567 Podio - with reflector						
		CLD		CLD D-D (DALI)		LUMEN OUTPUT (tq= 25 °C)
wattage	couleur	weight	code	code	W tot	K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422540-00	422540-0041	28	4000K - 1928lm - CRI 90 - 13°
	graphite		422541-00	422541-0041		
LED COB	grey 9006	1.50	422544-00	422544-0041	28	4000K - 1988lm - CRI 90 - 28°
	graphite		422545-00	422545-0041		
LED COB	grey 9006	1.50	422548-00	422548-0041	28	4000K - 1985lm - CRI 90 - 48°
	graphite		422549-00	422549-0041		
LED COB	grey 9006	1.50	422542-00	422542-0041	42	4000K - 3021lm - CRI 90 - 13°
	graphite		422543-00	422543-0041		
LED COB	grey 9006	1.50	422546-00	422546-0041	42	4000K - 3116lm - CRI 90 - 28°
	graphite		422547-00	422547-0041		
LED COB	grey 9006	1.50	422550-00	422550-0041	42	4000K - 3111lm - CRI 90 - 48°
	graphite		422551-00	422551-0041		



LED: Luminous flux maintenance 80%: 50.000h (L80B20).
Power factor ≥ 0.92 .

Upon request version with:
• CLD D-D (DALI) wiring with sub-code -0041.



3000K - CRI 90 (sub-code -39)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	1750lm - 15°	42	2743lm - 15°
	1826lm - 30°		2862lm - 30°
2200K - AMBER (sub-code -73)			
W tot	ølm 700mA	W tot	ølm 1050mA
28	2064lm - 15°	42	3234lm - 15°
	2153lm - 30°		3374lm - 30°

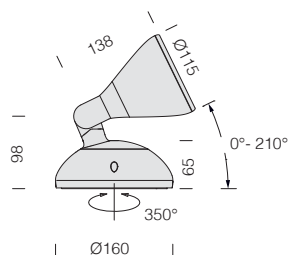


2566 Podio - with lens					
wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422530-00	28	4000K - 1843lm - CRI 90 - 15°
	graphite		422532-00		
LED COB	grey 9006	1.50	422554-00	28	4000K - 1923lm - CRI 90 - 30°
	graphite		422555-00		
LED COB	grey 9006	1.50	422535-00	42	4000K - 2888lm - CRI 90 - 15°
	graphite		422539-00		
LED COB	grey 9006	1.50	422556-00	42	4000K - 3013lm - CRI 90 - 30°
	graphite		422557-00		



Ideal for wall mounting where the light point is hidden.

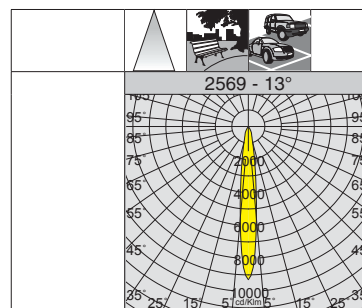
IP66IK08



LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.92 .

CRI 90

DALI

RG0
Etr

U.V.

UNI EN
ISO 9227

210°

350°

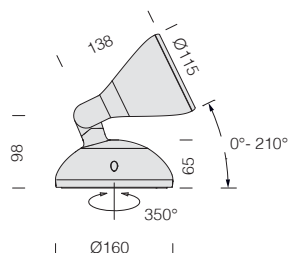
3000K - CRI 90 (sub-code -39)

W tot	ølm 700mA	W tot	ølm 1050mA
28	1831lm - 13°	42	2869lm - 13°
	1888lm - 28°		2960lm - 28°

2569 Podio - with reflector

wattage	colour	weight	CLD	CLD D-D (DALI)	W tot	LUMEN OUTPUT (tq= 25 °C)
			code	code		K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422570-00	422570-0041	28	4000K - 1928lm - CRI 90 - 13°
	white		422571-00	422571-0041		
LED COB	grey 9006	1.50	422574-00	422574-0041	28	4000K - 1988lm - CRI 90 - 28°
	white		422575-00	422575-0041		
LED COB	grey 9006	1.50	422572-00	422572-0041	42	4000K - 3021lm - CRI 90 - 13°
	white		422573-00	422573-0041		
LED COB	grey 9006	1.50	422576-00	422576-0041	42	4000K - 3116lm - CRI 90 - 28°
	white		422577-00	422577-0041		

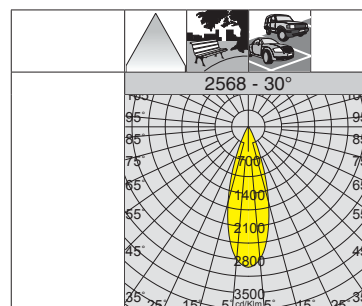
IP66IK08



LED: Luminous flux maintenance
80%: 50.000h (L80B20).
Power factor ≥ 0.92 .

Upon request version with:
• **CLD D-D (DALI)** wiring with **sub-code -0041**.

CRI 90

DALI
on requestRG0
Etr

U.V.

UNI EN
ISO 9227

210°

350°

3000K - CRI 90 (sub-code -39)

W tot	ølm 700mA	W tot	ølm 1050mA
28	1750lm - 15°	42	2743lm - 15°
	1826lm - 30°		2862lm - 30°

2568 Podio - with lens

wattage	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm - CRI - degrees
LED COB	grey 9006	1.50	422560-00	28	4000K - 1843lm - CRI 90 - 15°
	white		422561-00		
LED COB	grey 9006	1.50	422564-00	28	4000K - 1923lm - CRI 90 - 30°
	white		422565-00		
LED COB	grey 9006	1.50	422562-00	42	4000K - 2888lm - CRI 90 - 15°
	white		422563-00		
LED COB	grey 9006	1.50	422566-00	42	4000K - 3013lm - CRI 90 - 30°
	white		422567-00		



GENERAL CHARACTERISTICS

Housing: die-cast aluminium with cooling fins.

Reflector: anodised and polished turned aluminium.

Diffuser: tempered glass 4 mm thermal shock and impact resistant.

Standard Supply: electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

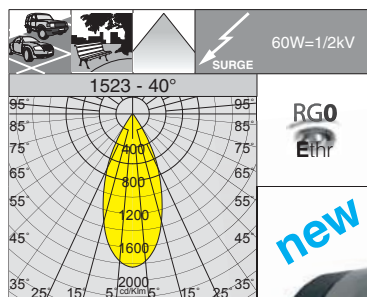
LED: Luminous flux maintenance 80%: 50.000h (L80B20)
Power factor ≥ 0.9

Upon request version with:

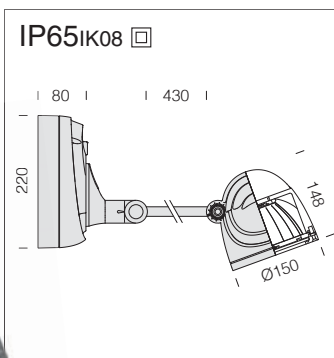
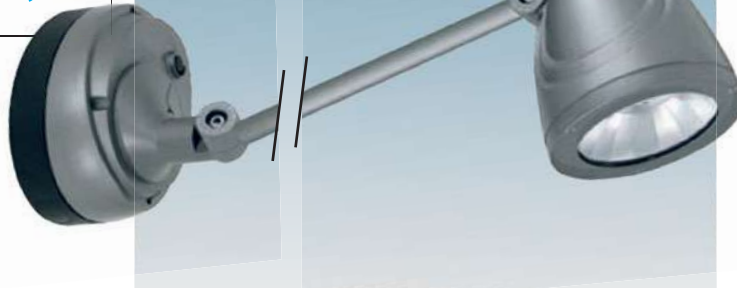
• **CLD D-D (DALI)** wiring with **sub-code -0041**.



Elfo is also available in the RGBW - DMX/RDM version (see chapter *Lighting management systems - DMX solution for LED RGBW*).

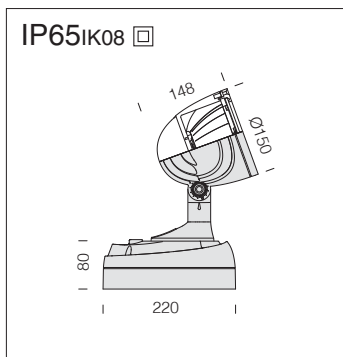


new

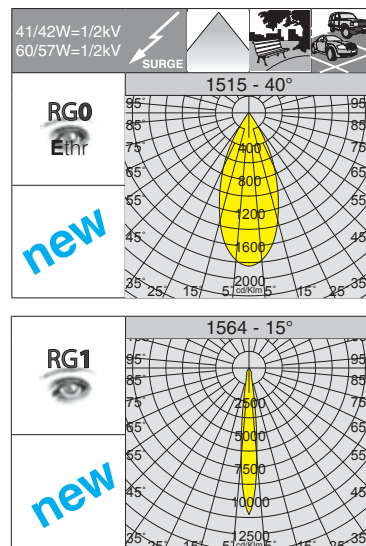


1523 Elfo - with adjustable arm

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED COB	graphite	4.00	432835-00	54	4000K - 5300lm - CRI 80 - 40°



Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



1515 Elfo - FL

		CLD		LUMEN OUTPUT (tq= 25 °C)			
wattage	colour	weight	code	W tot	K - ølm 700mA - CRI	K - ølm 1050mA - CRI	K - ølm 1400mA - CRI
LED COB	grey 9007	2.60	422392-00	28	4000K - 2140lm CRI 90 - 40°		
	graphite		422393-00				
LED COB AMBER	grey 9007	2.60	422392-73	28	2200K - 2397lm AMBER - 40°		
	graphite		422393-73				
LED COB	grey 9007	2.60	422390-00	41		4000K - 3198lm CRI 90 - 40°	
	graphite		422391-00				
LED COB AMBER	grey 9007	2.60	422390-73	42		2200K - 3710lm AMBER - 40°	
	graphite		422391-73				
LED COB	grey 9007	2.60	432836-00	54		4000K - 5300lm CRI 80 - 40°	
	graphite		432837-00				
LED COB AMBER	grey 9007	2.60	432836-73	57			2200K - 5200lm AMBER - 40°
	graphite		432837-73				

1564 Elfo - FS

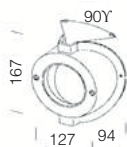
		CLD		LUMEN OUTPUT (tq= 25 °C)			
wattage	colour	weight	code	W tot	K - ølm 700mA - CRI	K - ølm 1050mA - CRI	K - ølm 1400mA - CRI
LED COB	grey 9007	2.60	422396-00	28	4000K - 2119lm CRI 90 - 15°		
	graphite		422397-00				
LED COB AMBER	grey 9007	2.60	422396-73	28	2200K - 2373lm AMBER - 15°		
	graphite		422397-73				
LED COB	grey 9007	2.60	422394-00	41		4000K - 3531lm CRI 90 - 15°	
	graphite		422395-00				
LED COB AMBER	grey 9007	2.60	422394-73	42		2200K - 4096lm AMBER - 15°	
	graphite		422395-73				
LED COB	grey 9007	2.60	432838-00	54		4000K - 5800lm CRI 80 - 15°	
	graphite		432839-00				
LED COB AMBER	grey 9007	2.60	432838-73	57			2200K - 5740lm AMBER - 15°
	graphite		432839-73				

ACCESSORIES

acc. 116 corner support

black 991332-00

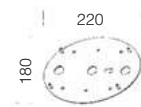
In fibreglass nylon. To install Elfo on a corner.



acc. 188 plate

black 995748-00

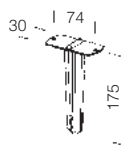
Made of steel. To be used with acc. 120 for pole installation.



acc. 119 spike

black 991335-00

In fiber glass nylon. For planting Elfo into the ground.



acc. 189 coloured filter - FS

blue 995749-00

red 995750-00

green 995751-00

yellow 995752-00

We recommend use with art. 1564.

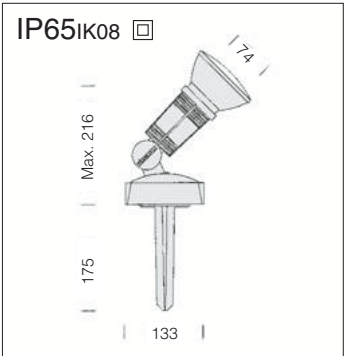
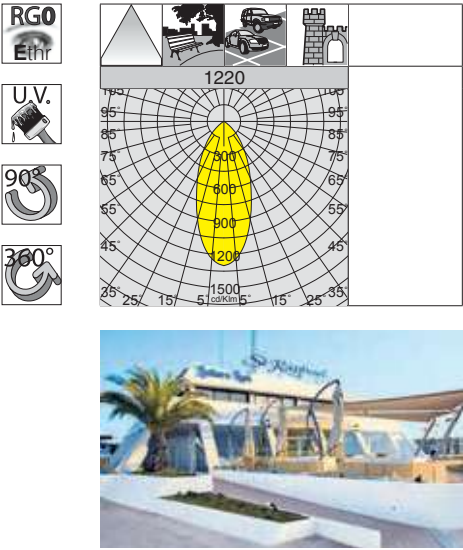


acc. 120 pole support

black 991336-00

In fibreglass nylon. To apply Koala on any Ø 60 pole in any position.



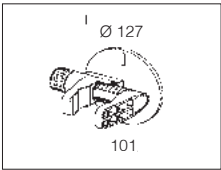


GENERAL CHARACTERISTICS
Housing/base: in fibreglass and self-extinguishing nylon.
Equipment: supplied with base and ground-sinking spike. Standard supply includes 2 cable glands.

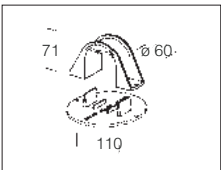
1220 Dafne - ES			
		CLD S	
wattage	colour	weight	code
LED PAR 38	black	0.40	431801-00

Mains voltage operated without transformer.

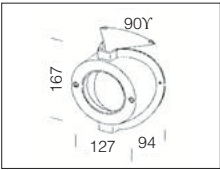
ACCESSORIES



acc. 118 étiau
black 991334-00
In fiber glass nylon. Enables Dafne to be installed on different surfaces without the need to fix it definitively. Clamp opening between 20mm (min) and 60mm (max).

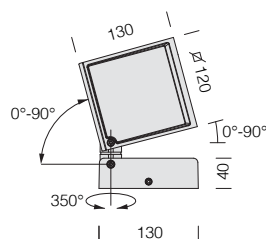


acc. 120 pole support
black 991336-00
In fibreglass nylon. To apply Dafne on any Ø 60 pole in any position.



acc. 116 corner support
black 991332-00
In fibreglass nylon. To install Dafne on a corner.

IP66IK08



CRI 90

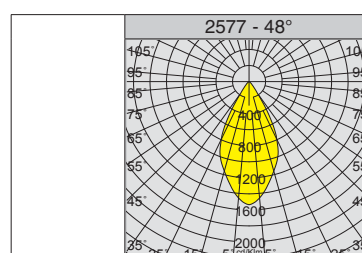
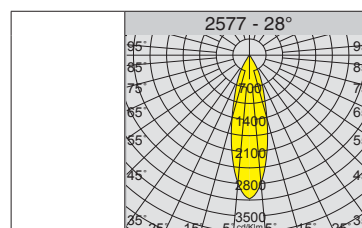
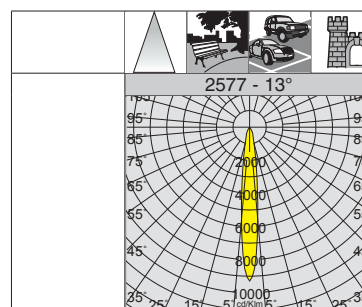


GENERAL CHARACTERISTICS

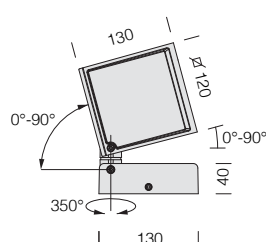
Housing: in die-cast aluminium.
Reflector: in high-performance silver aluminium.
LED: Luminous flux maintenance 80%: 50.000h (L80B20).
 Power factor ≥ 0.92 .

2577 Square - with reflector

wattage (1050mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm 1050mA - CRI - degrees
LED COB	white	1.75	431864-00	40	4000K - 3021lm - CRI 90 - 13°
	graphite		431865-00		
LED COB	white	1.75	431862-00	40	4000K - 3116lm - CRI 90 - 28°
	graphite		431863-00		
LED COB	white	1.75	431860-00	40	4000K - 3111lm - CRI 90 - 48°
	graphite		431861-00		



IP66IK08



CRI 90

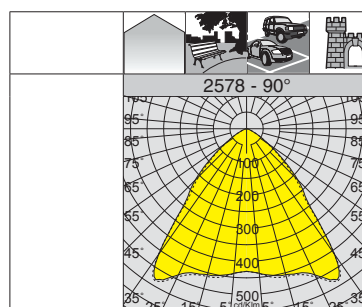


GENERAL CHARACTERISTICS

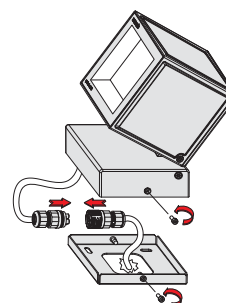
Housing: in die-cast aluminium.
Reflector: in high-performance silver aluminium.
LED: Luminous flux maintenance 80%: 50.000h (L80B20).
 Power factor ≥ 0.92 .

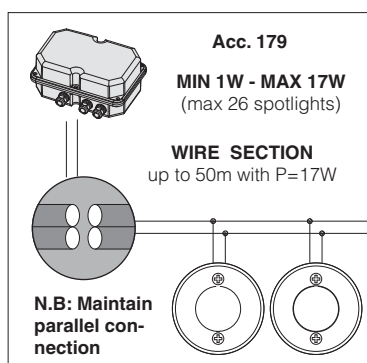
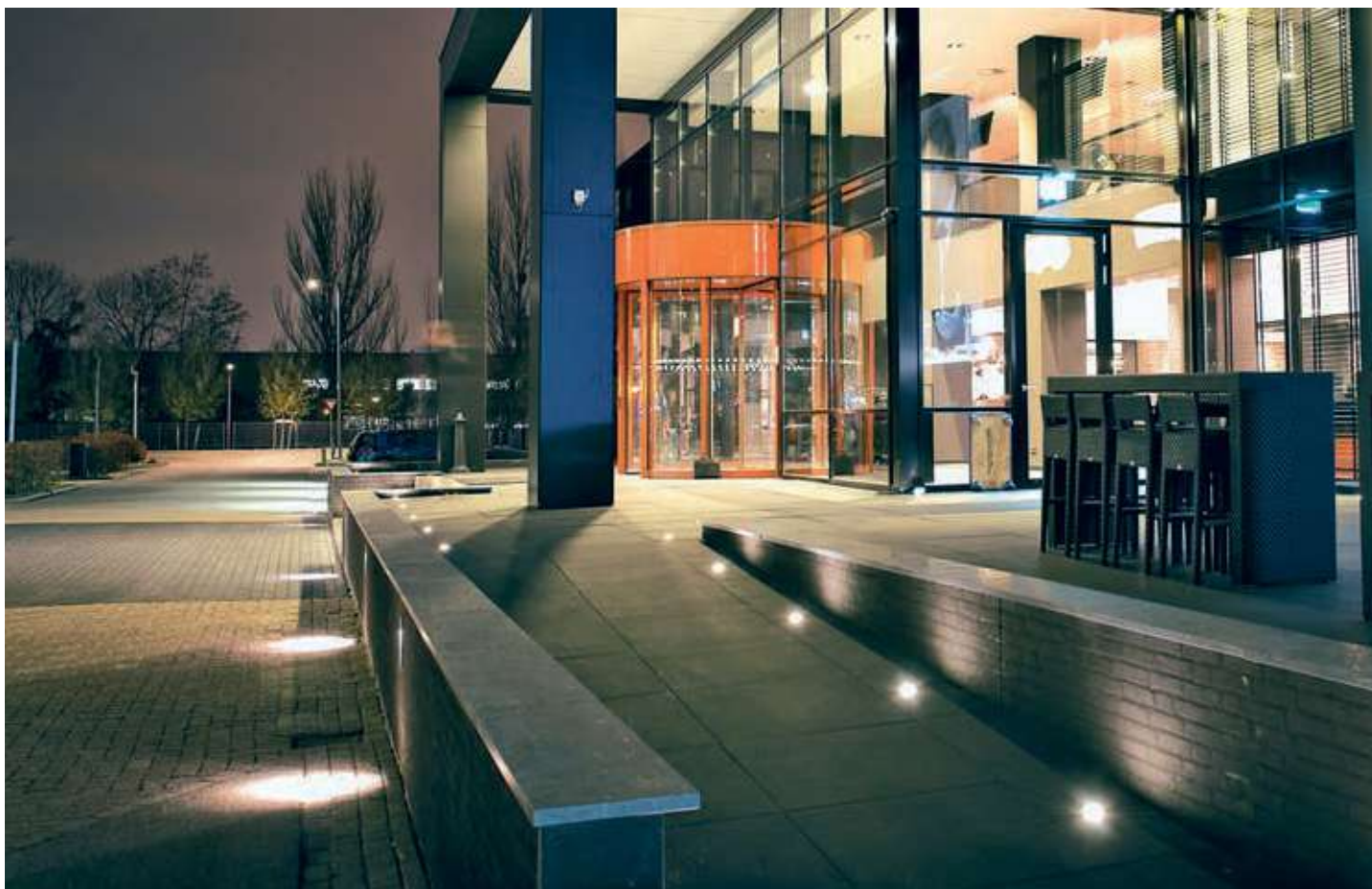
2578 Square - with optic

wattage (1050mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm 1050mA - CRI - degrees
LED COB	white	1.75	431870-00	40	4000K - 3152lm - CRI 90 - 90°
	graphite		431871-00		



Mounting: rapid connection, the fixture does not need to be opened.





IP67 IK08

**GENERAL CHARACTERISTICS**

Housing: vandal resistant fibre-glass nylon.

Frame: die-cast aluminium

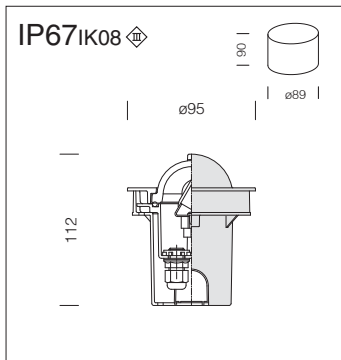
Diffuser: impact and thermal shock resistant tempered glass.

1622 Starled - wall and floor version									
		CLD S+L		temperature and load					LED (tj= 25 °C)
wattage 24V	colour	weight	code	Max T. on glass ta 25°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm 24V - CRI
LED	grey 9007	0.25	530690-00	30°	2000	OK	OK	0,6	4000K - 75lm - CRI≥80
	graphite		530691-00	30°	2000	OK	OK		

code	VOLTAGE in	VOLTAGE V _{DC} out	min. no. spotlight	max no. spotlight	W
997663-00	220-240V 50/60Hz	24V	1	26	17
Waterproof box containing the ballast.					

acc. 179 IP67CT

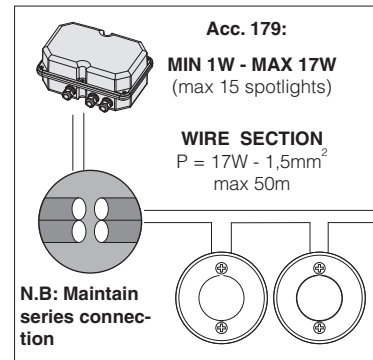


**GENERAL CHARACTERISTICS**

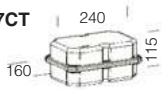
Housing: Vandal resistant fibre-glass nylon.

Frame: in die-cast aluminium.

Diffuser: tempered glass, resistant to thermal shock and impact.

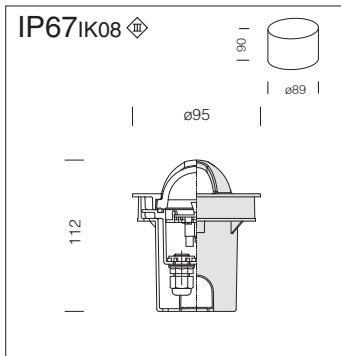


1637 Starled - wall eyelid screen version					
wattage (350mA)		CLD S+L		W	LED (tj= 25 °C)
colour	weight	code			K - ølm 350mA - CRI
grey 9007	0.25	530770-00	1	1	4000K - 140lm - CRI 75
graphite		530771-00			
corten		530770-2191			

acc. 179 IP67CT

code	VOLTAGE in	CURRENT I _{DC} out	min. no. spotlig.	max no. spotlig.	W
997665-00	220-240V 50/60Hz	350mA	1	15	17

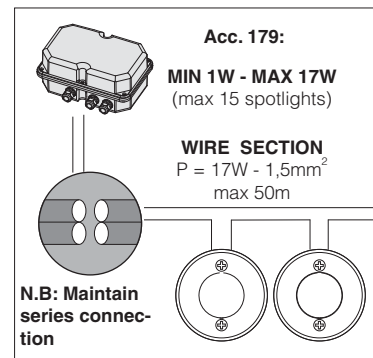
Waterproof box containing the ballast.

**GENERAL CHARACTERISTICS**

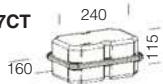
Housing: Vandal resistant fibre-glass nylon.

Frame: in die-cast aluminium.

Diffuser: tempered glass, resistant to thermal shock and impact.

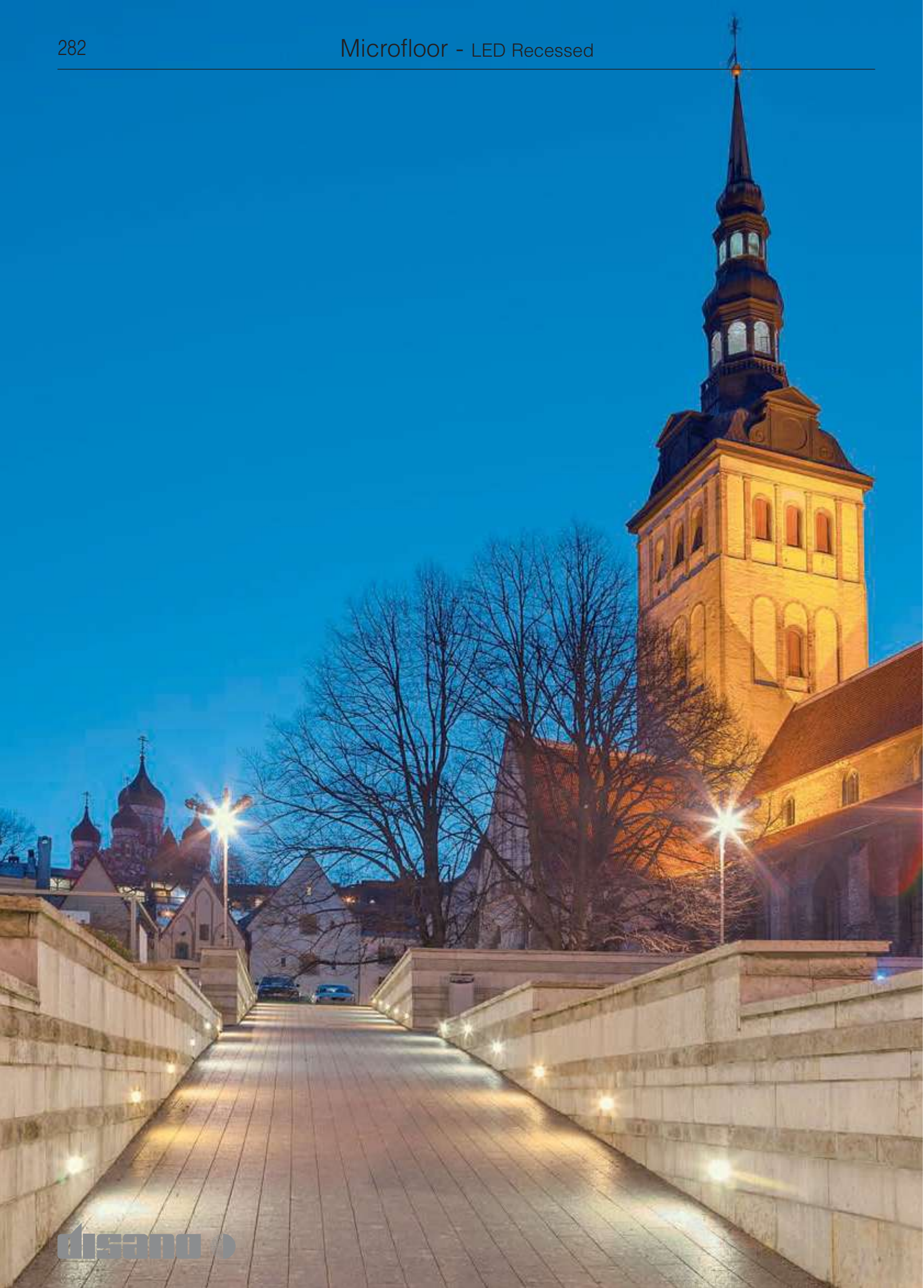


1638 Starled - wall/floor cross eyelid version								
wattage (350mA)		CLD S+L		temperature and load				LED (tj= 25 °C)
colour	weight	code	Max T. on glass ta 25°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm 350mA - CRI
grey 9007	0.16	530870-00	30°	2000	OK	OK	1	4000K - 140lm - CRI 75
graphite		530871-00	30°	2000	OK	OK		

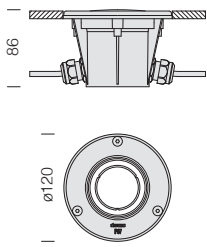
acc. 179 IP67CT

code	VOLTAGE in	CURRENT I _{DC} out	min. no. spotlig.	max no. spotlig.	W
997665-00	220-240V 50/60Hz	350mA	1	15	17

Waterproof box containing the ballast.

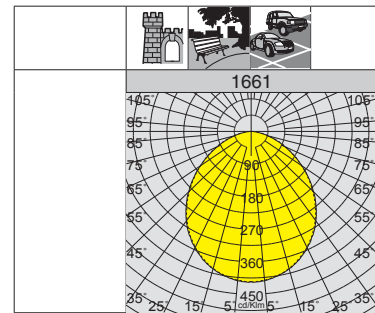


IP67IK08

**GENERAL CHARACTERISTICS**

Housing: in fibreglass aluminium and stainless steel AISI 316L frame.

Diffuser: in tempered glass, resistant to thermal shock and impacts.

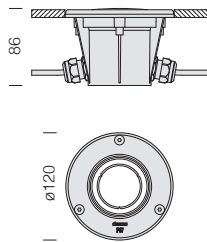


RG0

**1661 Microfloor - LED 230V**

		CLD		temperature and load				LED (tj= 25 °C)	
wattage (230V)	colour	weight	code	Max T. on glass ta 25°	max kg load	can be walked on	can bear vehicle loads	W	K - lm 230V
LED	s. steel	0.40	530816-00	30°	2000	OK	OK	1	4000K - 80lm - CRI 80

IP67IK08

**GENERAL CHARACTERISTICS**

Housing: in fibreglass aluminium and stainless steel AISI 316L frame.

Diffuser: in tempered glass, resistant to thermal shock and impacts.

3000K



RG0

**1670 Microfloor - LED - 230V**

		CLD S+L		temperature and load				LED (tj= 25 °C)	
wattage (230V)	colour	weight	code	T. max ta 25°	max load kg	can be walked on	can bear v ehicle loads	W	K - lm - degrees - CRI
LED COB GU10 (230V)	s. steel	0.40	530710-00	35°	2.000	OK	OK	6	3000K - 600lm - 38° - CRI 80

Operating voltage 220-240V/50-60HZ, not require power supplies.

acc. 314 - chassis

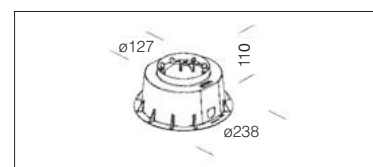
993926-00

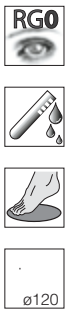
To install Microfloor on the wall.

**acc. 313 - outer shell**

993925-00

To install Microfloor into the ground.





Acc. 179
MIN 1W - MAX 17W
(max 26 spotlights)

WIRE SECTION
up to 50m with P=17W

N.B: Maintain parallel connection



IP67IK08

GENERAL CHARACTERISTICS

Housing: in fibreglass aluminium and stainless steel AISI 316L frame.

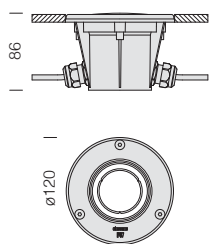
Diffuser: in tempered glass, resistant to thermal shock and impacts.

1650 Microfloor									
		CLD S+L		temperature and load				LED (tj= 25 °C)	
wattage 24V	colour	weight	code	T. max on glass ta 15°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm 24V
LED	s. steel	0.40	530810-00	30°	2000	OK	OK	0,6	4000K - 75lm

code	VOLTAGE in	VOLTAGE V _{DC} out	n. min spotlights	n. max spotlights	W
997663-00	220-240V 50/60Hz	24V	1	26	17
Waterproof box containing the ballast.					
997660-00	220-240V 50/60Hz	24V	1	26	17
Transformer, code 997660, should be purchased if the luminaire is used without a watertight box.					

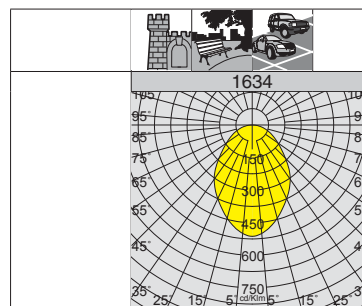
acc. 179 IP67CT

IP67IK08

**GENERAL CHARACTERISTICS**

Housing: in fibreglass aluminium and stainless steel AISI 316L frame.

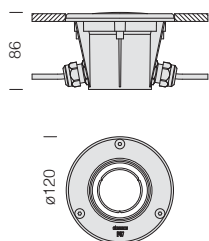
Diffuser: in tempered glass, resistant to thermal shock and impacts.

**1634 Microfloor - wide beam**

		CLD S+L		temperature and load				LED (tj= 25 °C)	
wattage (350mA)	colour	weight	code	T. max on glass ta 25°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm 350mA - degrees - CRI
LED	s. steel	0.40	530817-00	30°	2000	OK	OK	3	4000K - 520lm - 120° - CRI 80

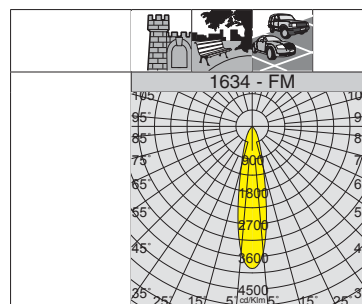
LED: Luminous flux maintenance 70% 50000h (L70B50). Power factor ≥0.95.

IP67IK08

**GENERAL CHARACTERISTICS**

Housing: in fibreglass aluminium and stainless steel AISI 316L frame.

Diffuser: in tempered glass, resistant to thermal shock and impacts.



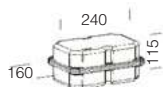
Microfloor is also available in the RGB Fullcolor version (see chapter *Lighting management systems - DMX solution for LED RGBW*).

1634 Microfloor - medium beam

		CLD S+L		temperature and load				LED (tj= 25 °C)	
wattage	colour	weight	code	T. max on glass ta 25°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm - degrees - CRI
LED	s. steel	0.40	530815-00	40°	2000	OK	OK	3,8	4000K - 520lm - 25° - CRI 70

LED: Luminous flux maintenance 70% 50000h (L70B50). Power factor ≥0.95. **Upon request:** 39° - 57° beam angle.

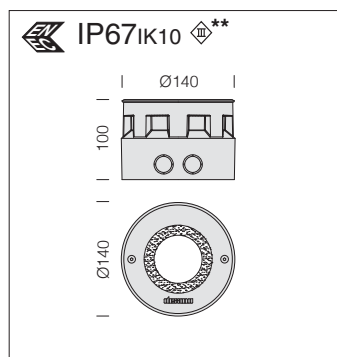
acc. 179 IP67CT



code	VOLTAGE in	CURRENT I _{DC} out	Microfloor art. 1634	min. no. spotlights	max no. spotlights
997665-00	220-240V 50/60Hz	350mA	530817-00	1	5
			530815-00	1	4



Midifloor is also available in the RGB Fullcolor version (see chapter *Lighting management systems - DMX solution for LED RGBW*).



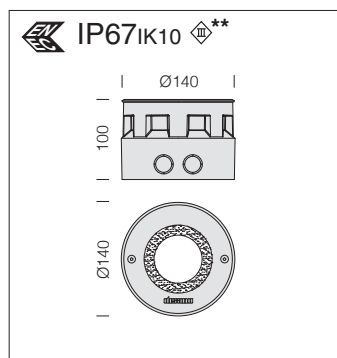
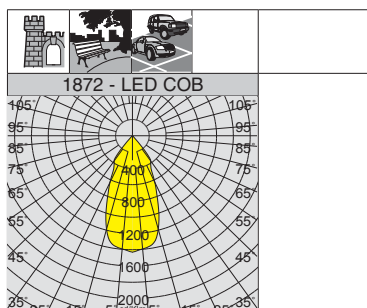
GENERAL CHARACTERISTICS

Housing: made in die-cast aluminum with stainless steel AISI 316L frame fibreglass nylon outer shell.

Diffuser: tempered shock and heat resistant glass.

(*) drive-over fixture for **restricted traffic areas**.

1872 Midifloor - adjustable									
		CLD S+L		temperature and load				LED (tp= 25 °C)	
wattage	colour	weight	code	T. max on glass	max load kg	can be walked on	can bear vehicle loads (*)	W	K - ølm - degrees - CRI
LED COB GU10 (230V)	s. steel	0.50	530791-00	45°	3000	OK	OK	6	3000K - 600lm - 38° - CRI 80
LED **			530792-00	45°	3000	OK	OK	4	2700K - 120lm - 25° - CRI≥80



GENERAL CHARACTERISTICS

Housing: made in die-cast aluminum with stainless steel AISI 316L frame fibreglass nylon outer shell.

Diffuser: tempered shock and heat resistant glass.

(*) drive-over fixture for **restricted traffic areas**.

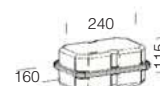
1872 Midifloor - COB									
		CLD S+L		temperature and load				LED (tp= 25 °C)	
wattage (350mA)	colour	weight	code	T. max on glass	max load kg	can be walked on	can bear vehicle loads (*)	W	K - ølm - degrees - CRI
LED COB **	s. steel	0.50	530793-00	40°	3000	OK	OK	13	3000K - 1600lm - 46° - CRI 90

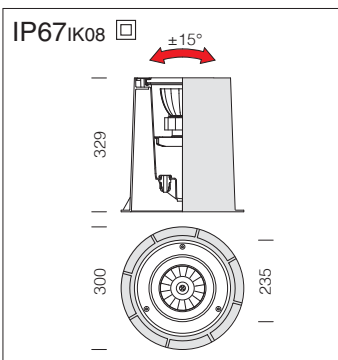
530793-00: version does not adjustable.

code	VOLTAGE in	for aaricle	min. no. spotlig.	max no. spotlig.
997661-00	220-240V 50/60Hz	530792-00	1	7
997666-00	220-240V 50/60Hz	530793-00	1	3

Waterproof box containing the ballast.

acc. 179 IP67CT



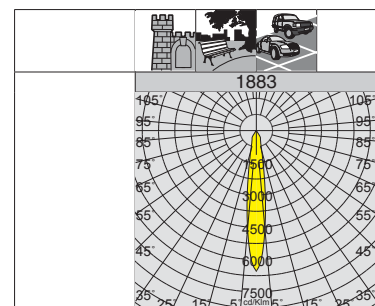


GENERAL CHARACTERISTICS

Housing: made in die-cast aluminum with stainless steel AISI 316L frame.

Diffuser: impact and thermal shock resistant tempered glass.

LED: Luminous flux maintenance 80% 50.000h (L80B20). Power factor ≥ 0.95 .

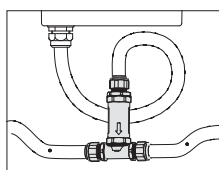


Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



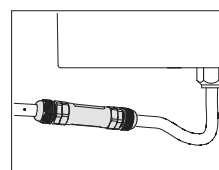
1883 Minifloor - adjustable									
		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage (350mA)	colour	weight	code	T. max on glass ta 15°	max load kg	can be walked on	can bear vehicle loads	W tot	K - ølm 350mA - degrees - CRI
LED COB	s. steel	5.10	530785-00	25°	2000	OK	OK	15	3000K - 1225lm - 15° - CRI 90
			530786-00	25°	2000	OK	OK		4000K - 1302lm - 15° - CRI 90
LED COB AMBER	s. steel	5.10	530785-73	25°	2000	OK	OK	15	2200K - 1493lm - 15° - AMBER

Upon request: version with **IP68** protection with gel watertight system at the bottom of the fixture (not suited for underwater installation) -0093.



acc. 399 - Conn. for continuous line
993837-00

Connector for solid line to be used with acc 369 for continuous lines.



acc. 369 - Connector
993838-00

To be used for continuous lines and to achieve waterproof connection.

GENERAL CHARACTERISTICS

Housing/Chassis: in die-cast aluminium.

Frame: in AISI 316L stainless steel.

Outer shell: in black nylon reinforced fibreglass.

Reflector: fixed and revolving with max. 0/+15° graduated brackets, in metalized polycarbonate.

Diffuser: 15 mm tempered glass, resistant to thermal shocks, impacts and static load.

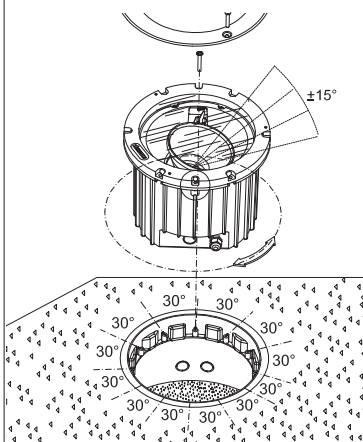
Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Equipment: silicone rubber seal and screws in anti-grip stainless steel.

LED: Luminous flux maintenance 80% 50.000h (L80B20). Power factor ≥ 0.95 .

OTHER CHARACTERISTICS

Installation: the fixture was designed for the installation on the ground with an outer shell where it can be rotated by 30° step angle.



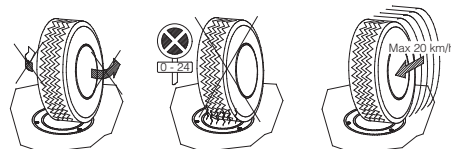
Floor is also available in the RGBW - DMX/RDM version (see chapter *Lighting management systems* - DMX solution for LED RGBW).

OTHER INFORMATION

AMBER COB
COB AMBER 2200K subcode -73: lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

The luminaire can be walked on and can bear vehicle loads.

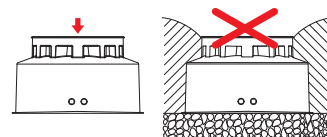


The masonry must be able to support a load of 4000 kg without strain. As the bottom is open to allow for draining, a gravel bed should be prepared at the time of installation. The electric gear is inside the luminaire.

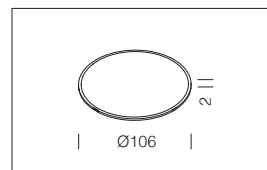
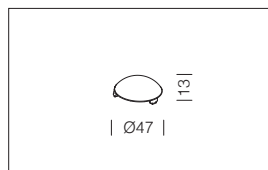
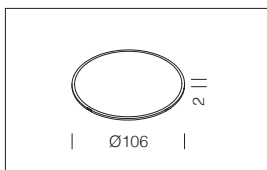
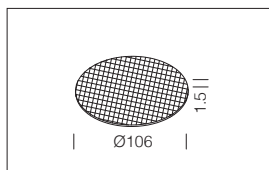
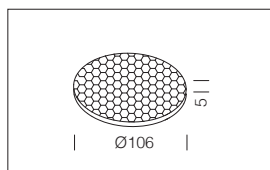
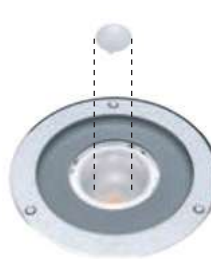
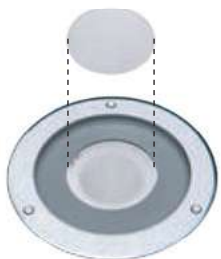
UPON REQUEST



Light shaper for sharp, narrow beam light emissions, ideal for architectural lighting applications.



OPTICAL ACCESSORIES FOR FIXED AND ADJUSTABLE FLOOR SPOTLIGHT



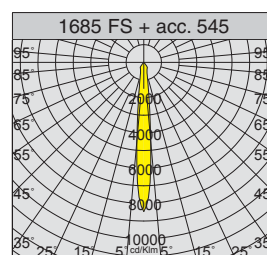
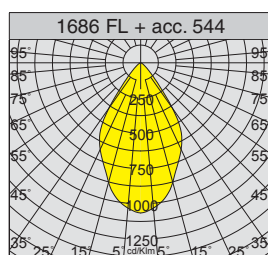
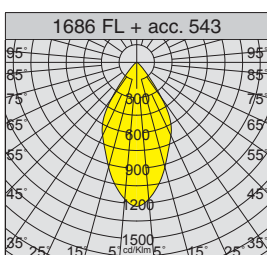
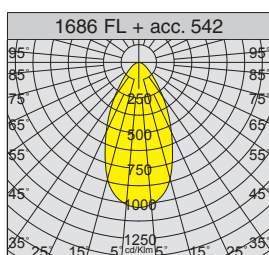
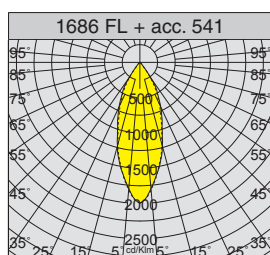
acc. 541
alveolar screen
993980-00

acc. 542
prismatic slab
993981-00

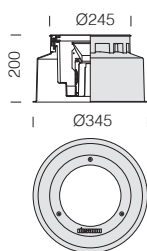
acc. 543
frosted slab
993982-00

acc. 544
dome-shaped
993983-00

acc. 545
clear slab
993984-00



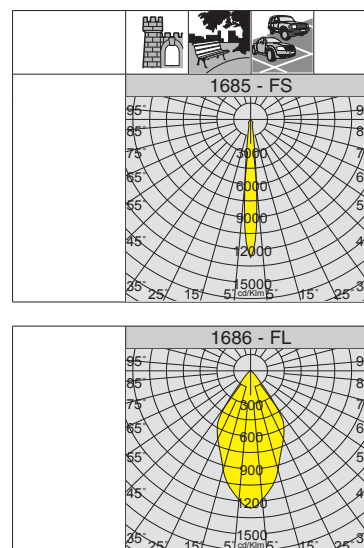
IP68IK10



Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

CRI 90

AMBER COB



RG0



2200K

4000K

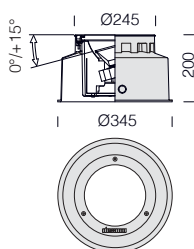
1685 Floor - fixed - FS

		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle loads	W tot
				ta 25°	ta 15°				K - ølm 700mA - degrees - CRI
LED COB	s. steel	4.40	530407-00	50°	40°	4000	OK	OK	28
LED COB AMBER			530407-73	50°	40°	4000	OK	OK	
									4000K - 2029lm - 10° - CRI 90
									2200K - 2272lm - 10° - AMBER

1686 Floor - fixed - FL

		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle loads	W tot
				ta 25°	ta 15°				K - ølm 700mA - degrees - CRI
LED COB	s. steel	4.40	530417-00	50°	40°	4000	OK	OK	28
LED COB AMBER			530417-73	50°	40°	4000	OK	OK	
									4000K - 2113lm - 62° - CRI 90
									2200K - 2367lm - 62° - AMBER

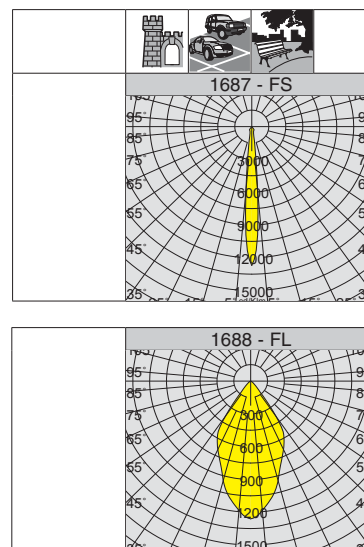
IP68IK10



Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

CRI 90

AMBER COB



RG0



2200K

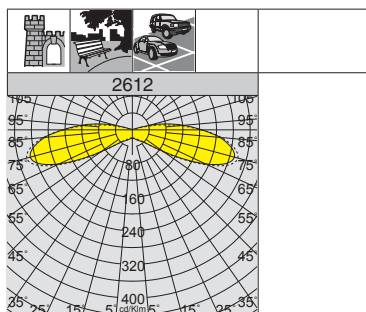
4000K

1687 Floor - adjustable - FS

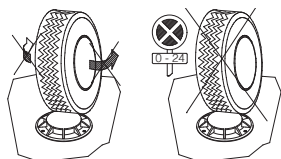
		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle loads	W tot
				ta 25°	ta 15°				K - ølm 700mA - degrees - CRI
LED COB	s. steel	4.40	530427-00	50°	40°	4000	OK	OK	28
LED COB AMBER			530427-73	50°	40°	4000	OK	OK	
									4000K - 2029lm - 10° - CRI 90
									2200K - 2272lm - 10° - AMBER

1688 Floor - adjustable - FL

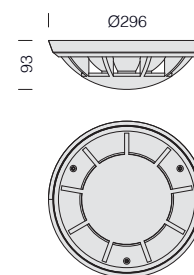
		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle loads	W tot
				ta 25°	ta 15°				K - ølm 700mA - degrees - CRI
LED COB	s. steel	4.40	530437-00	50°	40°	4000	OK	OK	28
LED COB AMBER			530437-73	50°	40°	4000	OK	OK	
									4000K - 2113lm - 62° - CRI 90
									2200K - 2367lm - 62° - AMBER



The luminaire can bear vehicle loads.



IP67IK08



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

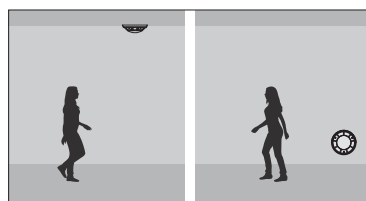
Diffuser: In hemispherical glass, resistant to thermal shocks, impacts and loads.

LED: Luminous flux maintenance 70% 50.000h (L70B50).

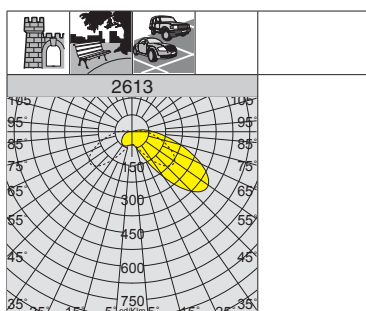
2612 Ground - with convex screen and radial louvre frame

wattage (230V)	colour	weight	code	temperature and load			W	LED (tp= 25 °C)
				T. max on glass ta 25°C	max load kg	can bear vehicle loads		
LED COB	graphite	2.50	530630-00	40°C	2000	OK	20	4000K - 1900lm - CRI 80

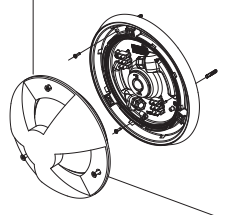
Equipment: cable gland in fiberglass nylon PG11 and provision for continuous line.



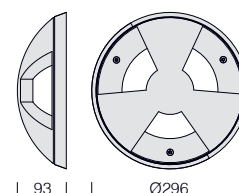
Example of ceiling/wall installation.



Wall version
sequence
installation.



IP67IK08



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

Diffuser: In hemispherical glass, resistant to thermal shocks, impacts and loads.

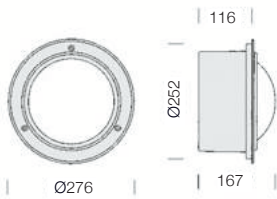
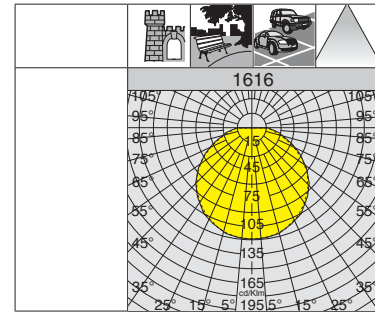
LED: Luminous flux maintenance 70% 50.000h (L70B50).

2613 Ground - with convex screen and frame for localized lighting

wattage (230V)	colour	weight	code	temperature and load			W	LED (tp= 25 °C)
				T. max on glass ta 25°C	max load kg	can bear vehicle loads		
LED COB	graphite	2.50	530600-00	40°C	2000	OK	20	4000K - 1900lm - CRI 80

Equipment: cable gland in fiberglass nylon PG11 and provision for continuous line. Ideal for wall or ceiling mounting.

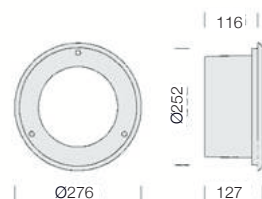
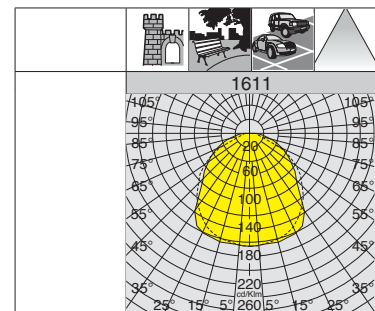
IP65IK08

**GENERAL CHARACTERISTICS****Frame:** in AISI 316L stainless steel.**Reflector:** in high-gloss aluminium.**Diffuser:** impact-resistant hemispherical glass**Standard supply:** standard recess box.**LED (LAMP E27):** 15.000h.**1616 Wall - with convex glass and stainless steel frame**

		CLD S+L		W	LED (tp= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED (LAMP E27)	inox	2.30	530680-00	7	2700K - 800lm - CRI 80

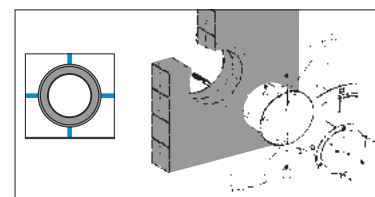
Ideal for ceiling mounting. Resistant to humid and salty environments.

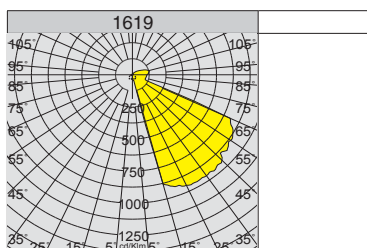
IP65IK08

**GENERAL CHARACTERISTICS****Frame:** in die-cast aluminium.**Reflector:** in high-gloss aluminium.**Diffuser:** in tempered glass**Standard supply:** standard recess box.**LED (LAMP E27):** 15.000h.**1611 Wall - with flat glass**

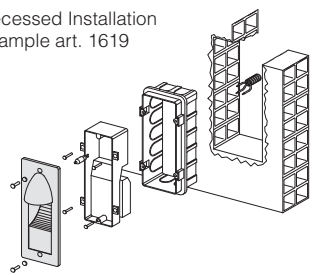
		CLD S+L		W	LED (tp= 25 °C)
wattage	colour	weight	code		K - ølm - CRI
LED (LAMP E27)	graphite	2.30	530622-00	7	2700K - 800lm - CRI 80

Recessed mounting box, fitted for input of power supply tube on the bottom or from the sides, with references for proper positioning.

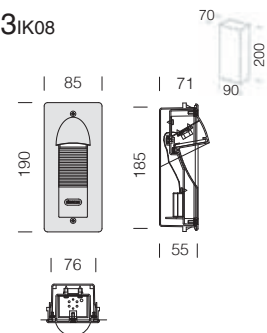




Recessed Installation
example art. 1619



IP43IK08



GENERAL CHARACTERISTICS

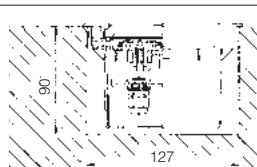
Housing/Frame: in die-cast aluminium.

Diffuser: tempered glass, resistant to thermal shock and impact.

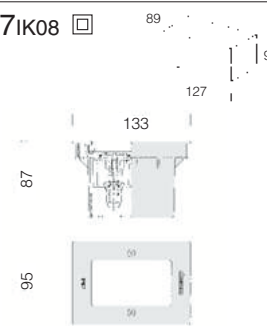
1619 Mini					
		CLD		LED (tj= 25 °C)	
wattage (230V)	colour	weight	code	W	K - ølm 230V - CRI
LED	grey 9007	0.30	530675-00	1	4000K - 80lm - CRI 80
	corten		530675-2191		



Recessed
dimensions
art. 1673



IP67IK08



GENERAL CHARACTERISTICS

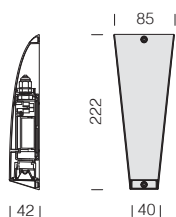
Housing: vandal resistant fibre-glass nylon.

Frame: die-cast aluminium.

Diffuser: frosted glass, resistant to impact and thermal shock.

1673 Starled - LED 230V									
		CLD		temperature and load				LED (tj= 25 °C)	
wattage (230V)	colour	weight	code	T. max on glass ta 15°	max kg load	can be walked on	can bear vehicle loads	W	K - ølm 230V - degrees - CRI
LED	graphite	0.41	530696-00	30°	2000Kg	OK	OK	1	4000K - 80lm - 120° - CRI≥80
	grey 9007		530697-00	30°	2000Kg	OK	OK		

IP65 IK08

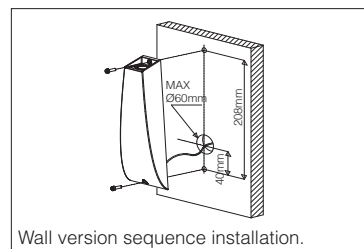


GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

Electric gear: supplied with inbuilt power supply.

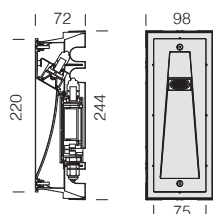
LED: Luminous flux maintenance 70%: 25.000h (L70B50).



1675 Spy					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
LED (350mA)	colour	weight	code	W tot	K - ølm (350mA) - CRI - degrees
LED	grey 9007	0.50	530672-00	1,2	4000K - 150lm - CRI 80 - 10°

On request: corten version, with sub-code 2191.

IP65 IK08

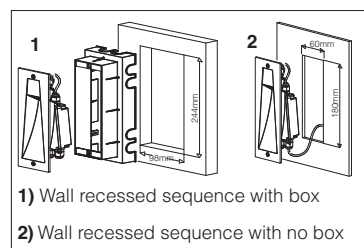
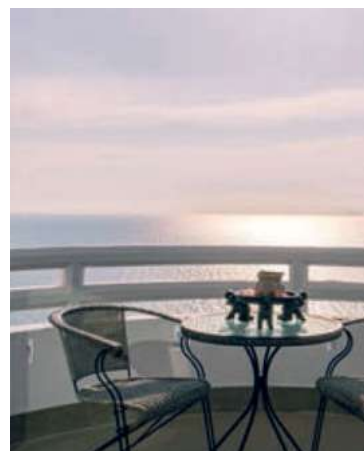


GENERAL CHARACTERISTICS

Housing: in die-cast aluminium.

Electric gear: supplied with inbuilt power supply.

LED: Luminous flux maintenance 70%: 25.000h (L70B50).

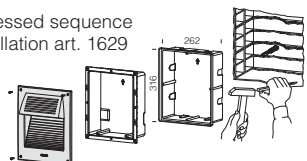


1676 Spy					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
LED (350mA)	colour	weight	code	W tot	K - ølm (350mA) - CRI - degrees
LED	grey 9007	0.50	530683-00	1,2	4000K - 150lm - CRI 80 - 24°

On request: corten version, with sub-code 2191.



Recessed sequence
installation art. 1629

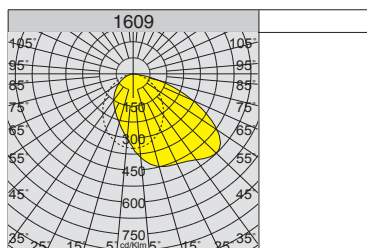


1624 Fonte - wall version (1)

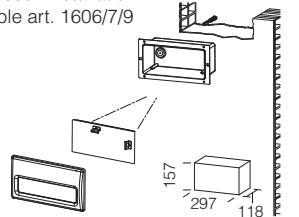
		CLD		LED (tj= 25 °C)	
wattage (116mA)	colour	weight	code	W	K - ølm 116mA - CRI
LED	grey 9007	2.20	431745-00	4,5	4000K - 480lm - CRI≥80
	corten		431745-2191		

1629 Fonte - recessed (2)

		CLD		LED (tj= 25 °C)	
wattage (116mA)	colour	weight	code	W	K - ølm 116mA - CRI
LED	grey 9007	2.20	431752-00	4,5	4000K - 480lm - CRI≥80
	corten		431752-2191		



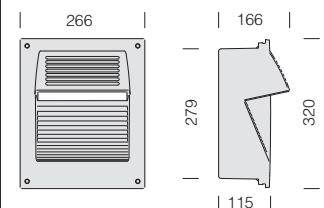
Recessed installation
example art. 1606/7/9



1609 Box 1 - asymmetric screen eyelid

		CLD		LED (tj= 25 °C)	
wattage (116mA)	colour	weight	code	W	K - ølm 116mA - CRI
LED	inox	1.70	431770-00	4,5	4000K - 480lm - CRI≥80

IP65IK06



GENERAL CHARACTERISTICS

Housing: in fibreglass nylon, UV stabilized.

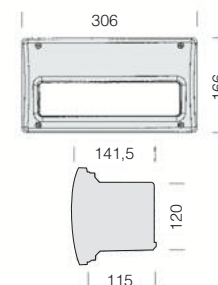
Front frame: in die-cast aluminium.

Diffuser: in 4 mm thick tempered glass, resistant to impact and thermal shock.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Equipment: electric gear on removable gear tray for easy maintenance. IP68 quick connector for rapid connection to the line.

IP66IK08



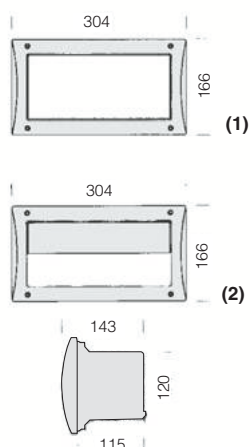
GENERAL CHARACTERISTICS

Housing: vandal resistant fibre-glass grey colour RAL 7035 nylon.

Frame: stainless steel AISI 316.

Diffuser: tempered glass.

IP65IK08 □



GENERAL CHARACTERISTICS

Housing: in f.g. nylon, RAL 7035 grey, shatterproof and UV-stabilised.

Frame: in thermoplastic material (designed for outdoor installation) UV-stabilised, in RAL 7045 grey

Reflector art. 1607: asymmetric; in scored aluminium.

Diffuser: in scored, matt-finished, V2 polycarbonate, shatterproof, self-extinguishing, UV-stabilised.

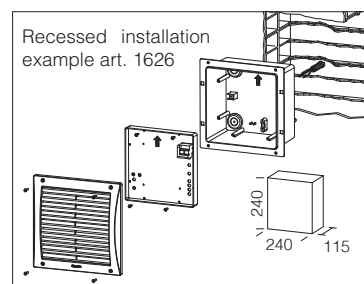
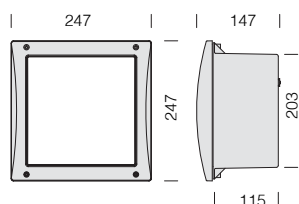
1606 Box (1)

1606 Box (1)					
			CLD	LED (tj= 25 °C)	
wattage (116mA)	colour	weight	code	W	K - ølm 116mA - CRI
LED	grey	0.80	431635-00	4,5	4000K - 480lm - CRI≥80

1607 Box - asymmetric screen eyelid (2)

1607 Box - asymmetric screen eyelid (2)					
			CLD	LED (tj= 25 °C)	
wattage (116mA)	colour	weight	code	W	K - ølm 116mA - CRI
LED	grey	1.00	431735-00	4,5	4000K - 480lm - CRI≥80

IP66IK08 □



GENERAL CHARACTERISTICS

Housing: in f.g. nylon, RAL 7035 grey, shatterproof and UV-stabilised.

Frame: in thermoplastic material (designed for outdoor installation) UV-stabilised, in RAL 7045 grey

Diffuser: in scored, matt-finished, V2 polycarbonate, shatterproof, self-extinguishing, UV-stabilised.

1626 Box 2

1626 Box 2			
		CLD S	
wattage	colour	weight	code
LED MAX 10W	grey	1.30	431640-00

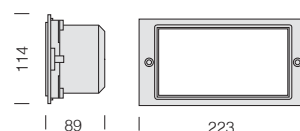




art. 1206



IP54IK08



GENERAL CHARACTERISTICS

Housing: vandal resistant nylon, UV-stabilised.

Frame: die-cast aluminium.

Frame art. 1231: stainless steel AISI 316.

Diffuser art. 1209: in glass.

Diffuser art. 1206: in opal plexi-glass.

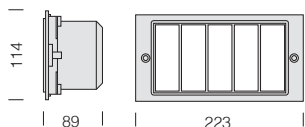
1209 Box - with diffuser

		CLD		LED (tj= 25 °C)	
wattage (230V)	colour	weight	code	W	K - ølm 230V - CRI
LED	graphite	0.50	431002-00	3	4000K - 280lm - CRI 80

1206 Box - with diffuser

		CLD S	
wattage	colour	weight	code
LED (LAMP E14)	graphite	0.50	431001-00

IP54IK08

**GENERAL CHARACTERISTICS**

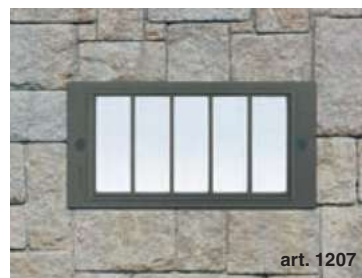
Housing: vandal resistant nylon, UV-stabilised.

Frame: die-cast aluminium.

Diffuser art. 1210: in glass.

Diffuser art. 1207: in opal plexi-glass.

Standard supply: grid with louvres.



art. 1207

1210 Box - with vertical screen

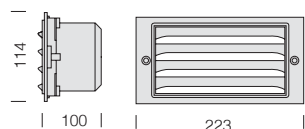
		CLD			LED (tj= 25 °C)
wattage (230V)	colour	weight	code	W	K - ølm 230V - CRI
LED	graphite	0.50	431502-00	3	4000K - 280lm - CRI 80

Upon request, versions with coloured LEDs.

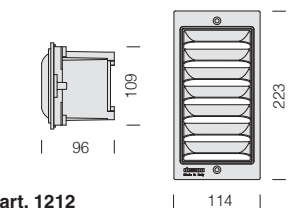
1207 Box - with vertical screen

		CLD S	
wattage	colour	weight	code
LED (LAMP E14)	graphite	0.50	431501-00

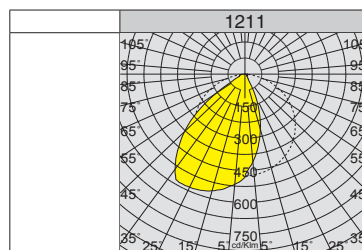
IP54IK08



art. 1208-1211



art. 1212



art. 1212

1211 Box - with horizontal screen

		CLD			LED (tj= 25 °C)
wattage (230V)	colour	weight	code	W	K - ølm 230V - CRI
LED	graphite	0.50	431602-00	3	4000K - 280lm - CRI 80

1212 Box - with vertical screen

		CLD			LED (tj= 25 °C)
wattage (230V)	colour	weight	code	W	K - ølm 230V - CRI
LED	graphite	0.50	431603-00	3	4000K - 280lm - CRI 80

1208 Box - with horizontal screen

		CLD S	
wattage	colour	weight	code
LED (LAMP E14)	graphite	0.50	431601-00





GENERAL CHARACTERISTICS

Housing: extruded aluminium suitable for continuous row.

Diffuser: tempered shock, resistant to impacts, thermal shocks and loads (max 2000 kg) 8 mm thick glass.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

LED: Luminous flux maintenance 80% 80.000h (L80B20). Power factor ≥ 0.9

OTHER INFORMATION

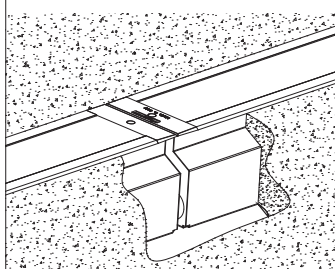
Equipment: complete with electrical cable for mains connection.



Sicura is also available in the RGBW - DMX/RDM version (see chapter *Lighting management systems - DMX solution for LED RGBW*).

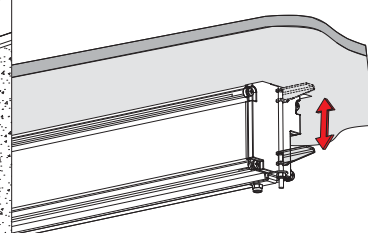
UPON REQUEST

with IP68 connector for mains connection; accessory for continuous row.

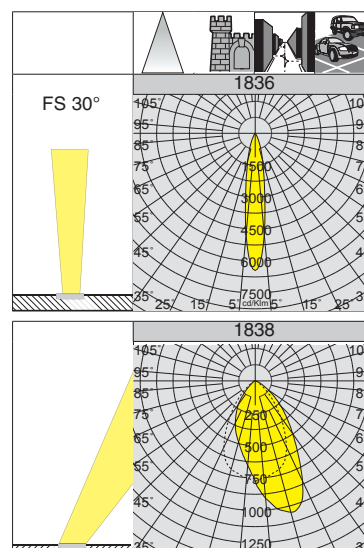
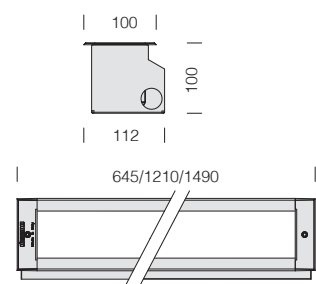


acc. 905 bracket

s. steel	998013-00
Support for ceiling mounting. Packet containing 2 brackets.	



IP67IK08



RG0

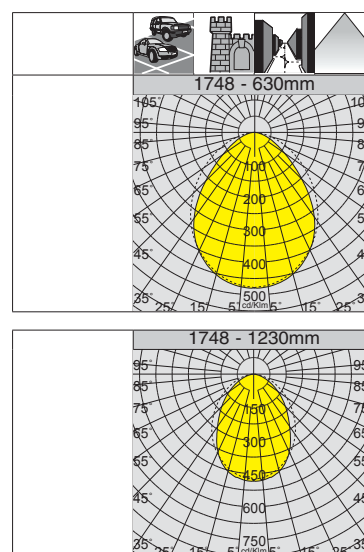
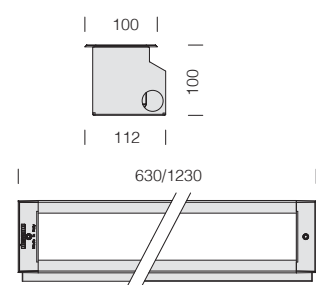
**1836 Sicura FS - symmetric**

1836 Sicura FS - symmetric											
			CLD		temperature and load						LUMEN OUTPUT (tq= 25 °C)
wattage	colour	L	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle load	W tot	K - ølm - CRI - degrees
					ta 15°	ta 25°					
LED	grey	645	5.20	414260-00	30°	40°	2000	OK	OK	22	4000K - 2952lm - CRI≥80 - 30°
		1210	6.20	414261-00	30°	40°	2000	OK	OK	43	4000K - 5905lm - CRI≥80 - 30°
		1490	7.20	414268-00	30°	40°	2000	OK	OK	54	4000K - 7381lm - CRI≥80 - 30°

1838 Sicura - asymmetric

1838 Sicura - asymmetric											
			CLD		temperature and load						LUMEN OUTPUT (tq= 25 °C)
wattage	colour	L	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle load	W tot	K - ølm - CRI
					ta 15°	ta 25°					
LED	grey	645	5.20	414280-00	30°	40°	2000	OK	OK	22	4000K - 2849lm - CRI≥80
		1210	6.20	414281-00	30°	40°	2000	OK	OK	43	4000K - 5699lm - CRI≥80
		1490	7.20	414282-00	30°	40°	2000	OK	OK	54	4000K - 7123lm - CRI≥80

IP67IK08



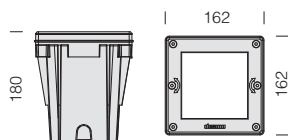
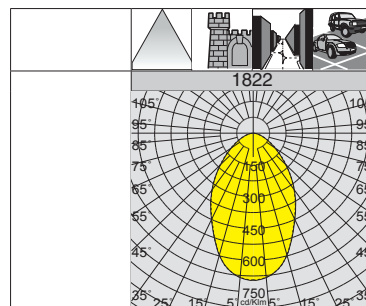
RG0

**1748 Sicura - wide beam**

1748 Sicura - wide beam												
			CLD		temperature and load						LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	L	weight	code	T. max on glass		max load kg	can be walked on	can bear vehicle loads	W tot	K - ølm - CRI	
					ta 15°	ta 25°						
LED	grey	630	5.20	414252-00	30°	40°	2000	OK	OK	14	4000K - 899lm - CRI≥80	
				414254-00	30°	40°	2000	OK	OK	28	4000K - 1800lm - CRI≥80	
LED	grey	1230	7.20	414258-00	30°	40°	2000	OK	OK	24	4000K - 1576lm - CRI≥80	
				414259-00	30°	40°	2000	OK	OK	48	4000K - 3261lm - CRI≥80	



IP67IK09 □

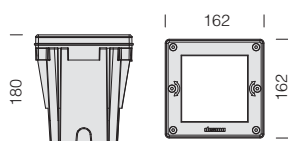
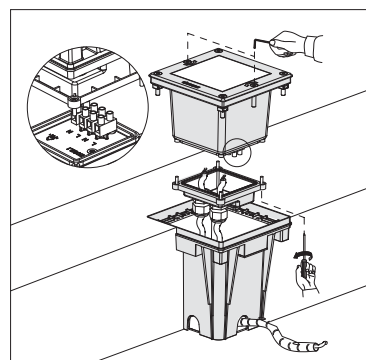
**GENERAL CHARACTERISTICS****Housing:** made of nylon.**Frame:** in AISI 304 stainless steel.**Outer casing:** nylon outer casing.**Diffuser:** tempered glass, 12mm thick, resistant to thermal shock, and mechanical stress up to 2000 Kg.

RG0

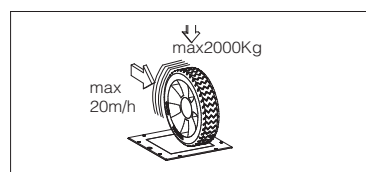
**1822 Miniquadro**

		CLD		temperature and load				LED (tj= 25 °C)	
wattage (24V)	colour	weight	code	T. max on glass		max load	can be walked on	can bear vehicle loads	W
				ta 25°	ta 15°				K - ølm 24V - CRI
LED	inox	1.70	530420-00	30°	20°	2000	OK	OK	3
									4000K - 135lm - CRI 80

IP67IK09 □

**LED:** Luminous flux maintenance 80% 50.000h (L80B20).

RG0

**1823 - Miniquadro**

		CLD		temperature and load				LED (tj= 25 °C)	
wattage (300mA)	colour	weight	code	T. max on glass		max load	can be walked on	can bear vehicle loads	W
				ta 25°	ta 15°				K - ølm 300mA - CRI
LED COB	inox	1.70	530425-00	40°	30°	2000	OK	OK	11
									4000K - 1400lm - CRI 90



ISCHIA



ISEO



COMO

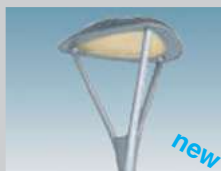


Ischia _____ p. 304
Iseo _____ p. 310
Como _____ p. 314

GARDA



LOTO



DISCO



Garda _____ p. 318
Loto _____ p. 324
Disco _____ p. 330

VISCONTI 2.0



AURA



LUCERNA



Visconti 2.0 _____ p. 332
Aura _____ p. 336
Lucerna _____ p. 338

VOLO



VISTA



POLAR



Volo _____ p. 350
Vista _____ p. 356
Polar _____ p. 358

CLIMA



TORCIA



ASTRO



Clima _____ p. 359
Torcia _____ p. 360
Astro _____ p. 362

CAMPANA



COMPOSITIONS WITH PEGASO



Campana _____ p. 364
Compositions with Pegaso _____ p. 366



GENERAL CHARACTERISTICS

Housing: pressed in die-cast aluminium.

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60 mm.

Diffuser: polycarbonate 2,5 mm thick, thermal shock and impact resistant (UNI EN 12150 tests 1/2001).

Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the new Ischia line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cathaphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.



UNI EN ISO 9227 Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

OTHER CHARACTERISTICS

Standard supply: automatic temperature control inside the device with automatic resetting; dedicated electronic device to protect the LED module; Complete with quick connection and anti-condensation valve for air recirculation.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.

THE RANGE OF ISCHIA STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort. **Upon request** LED 4000K - CRI 80 versions with **sub-code -60**.




BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
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LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

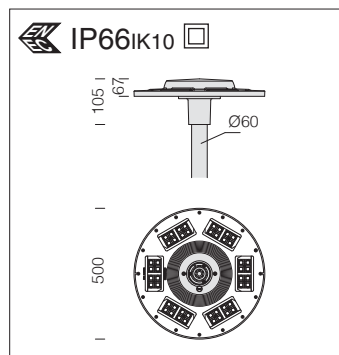
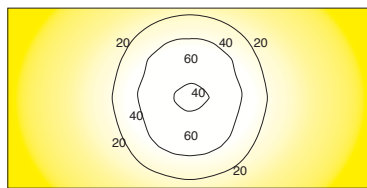
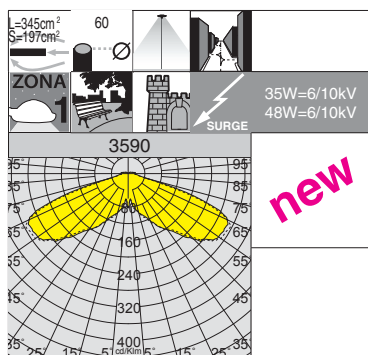
1-10V dimming ordered with sub-code -12		Adjustment range from 10%-100% with 1-10V
<div></div> <div>Virtual Midnight order with subcode -30</div>		<p>Stand-alone system with automatic luminous flux reduction in 4 steps.</p> <p>To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i></p> <p>ATTENTION: <i>original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.</i></p>
Factory settings		
Time	Flux	
on ÷ 22:00	100%	
22:00 ÷ 23:30	75%	
23:30 ÷ 02:30	50%	
02:30 ÷ 04:00	75%	
04:00 ÷ off	100%	
PLC remote control ordered with sub-code -0078		Point-to-point and system management and diagnosis system
For more information see page XVI-XX		



Example with Zhaga Socket (subcode -0054)

LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

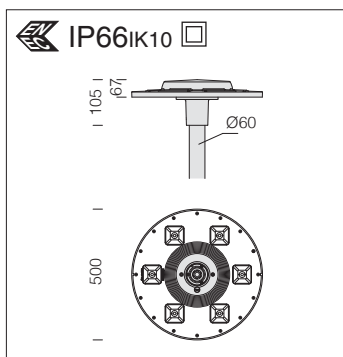


Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3590 Ischia - wide beam					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.60	424660-00	35	4000K - 4392lm - CRI 70
			424660-39		3000K - 4084lm - CRI 70
LED	graphite	4.60	424661-00	48	4000K - 5551lm - CRI 70
			424661-39		3000K - 5162lm - CRI 70

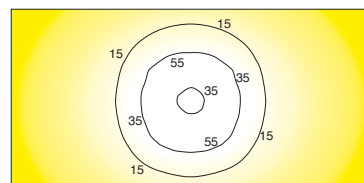
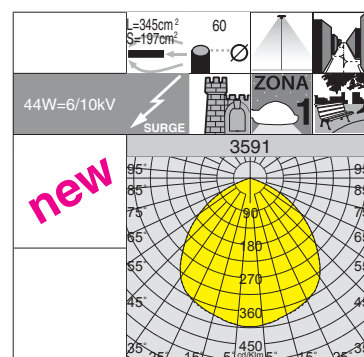
Upon request: possibility to choose different lighting point management systems (see table on p. 305).



Reflector: in pre-anodised 99.85 aluminium.

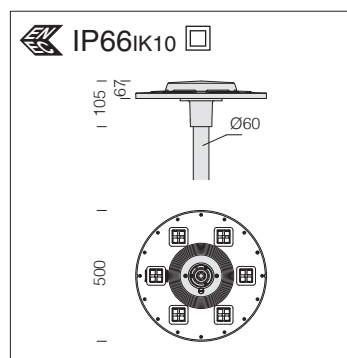
LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



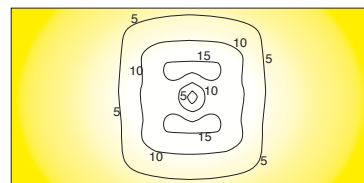
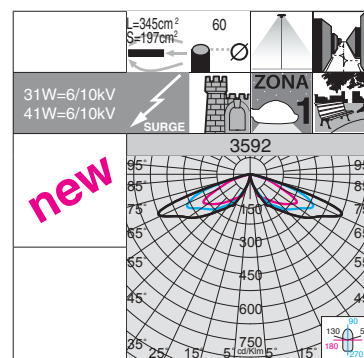
3591 Ischia - COB wide beam					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	4.60	424670-00	44	4000K - 5190lm - CRI 80
			424670-39		3000K - 4830lm - CRI 80
LED COB AMBER			424670-73	44	2200K - 4567lm - AMBER

Upon request: possibility to choose different lighting point management systems (see table on p. 305).



Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



3592 Ischia					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.60	424680-00	31	4000K - 3463lm - CRI 70
			424680-39		3000K - 3221lm - CRI 70
LED	graphite	4.60	424681-00	41	4000K - 5193lm - CRI 70
			424681-39		3000K - 4829lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 305).

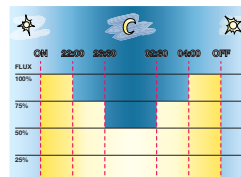


Upon request (sub-code -60)	
LED	4000K - CRI 80



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*

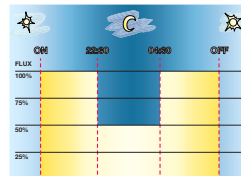
Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

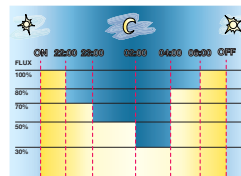
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.

Example of virtual midnight in 2 steps

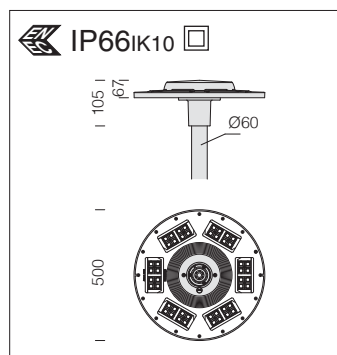
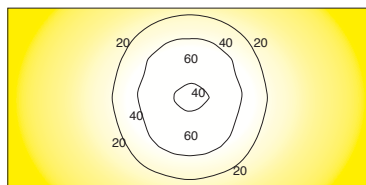
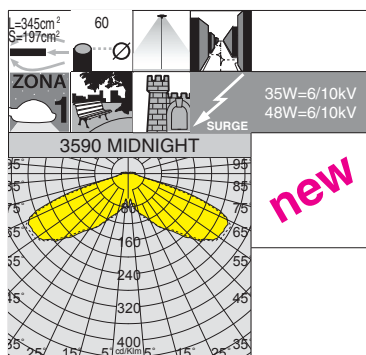


Settings upon request	
Time	Flux
on ÷ 22:30	100%
22:30 ÷ 04:30	50%
04:30 ÷ off	100%

Example of virtual midnight in 5 steps



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	70%
23:30 ÷ 02:00	50%
02:00 ÷ 04:00	30%
04:00 ÷ 06:00	80%
06:00 ÷ off	100%



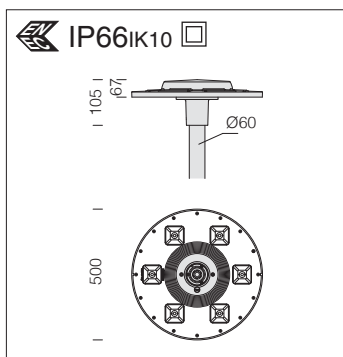
Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3590 Ischia MIDNIGHT - wide beam

wattage	colour	weight	CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
LED	graphite	4.60	424660-30	35	4000K - 4392lm	CRI 70
			424660-3028		3000K - 4084lm	CRI 70
LED	graphite	4.60	424661-30	48	4000K - 5551lm	CRI 70
			424661-3028		3000K - 5162lm	CRI 70

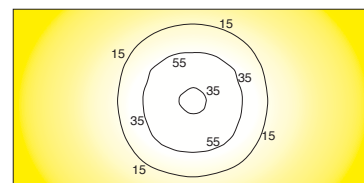
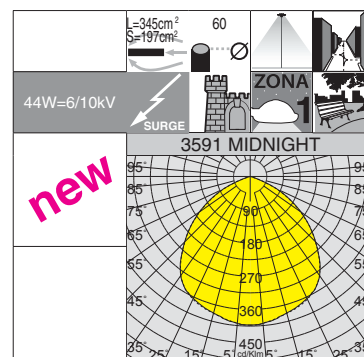
Upon request: possibility to choose different lighting point management systems (see table on p. 305).



Reflector: in pre-anodised 99.85 aluminium.

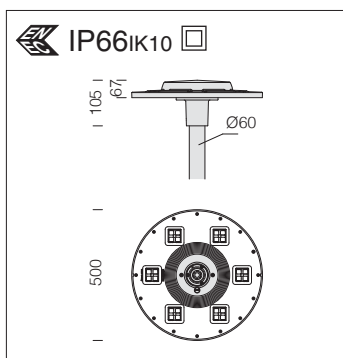
LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



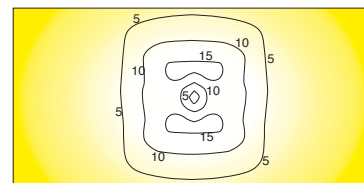
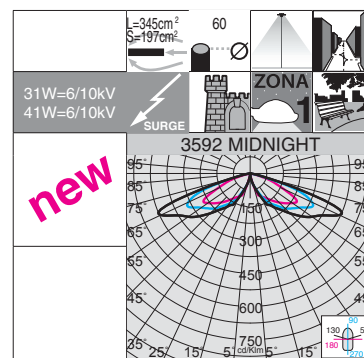
3591 Ischia MIDNIGHT - COB wide beam					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED COB	graphite	4.60	424670-30	44	4000K - 5190lm - CRI 80
			424670-3028		3000K - 4830lm - CRI 80
LED COB AMBER					424670-7330
Upon request: possibility to choose different lighting point management systems (see table on p. 305).					

Upon request: possibility to choose different lighting point management systems (see table on p. 305).



Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



3592 Ischia MIDNIGHT					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	4.60	424680-30	31	4000K - 3463lm - CRI 70
			424680-3028		3000K - 3221lm - CRI 70
LED	graphite	4.60	424681-30	41	4000K - 5193lm - CRI 70
			424681-3028		3000K - 4829lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 305).





GENERAL CHARACTERISTICS

Housing and arms: pressed in die-cast aluminium and designed with a very small surface exposed to wind.

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60-76mm.

Diffuser: extra-clear tempered glass, 5 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: nylon wiring plate 30% fibre glass complete with connector for mains connection and for LED module. Automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED

OTHER CHARACTERISTICS

module. Equipped with an air-circulation valve.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



THE RANGE OF ISEO STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.

Example with Nema Socket (subcode -40)



LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with **subcode -40** (sealing cap to be ordered separately)

Zhaga Socket order with **subcode -0054** (complete with sealing cap)

Mounted directly on the fixture's body, ideal for remote lighting management applications.



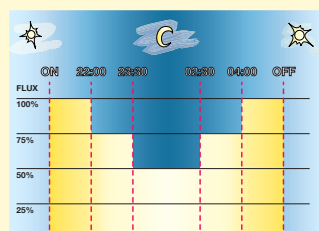
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



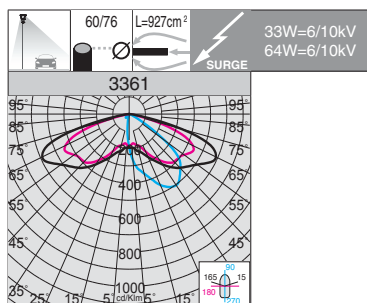
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

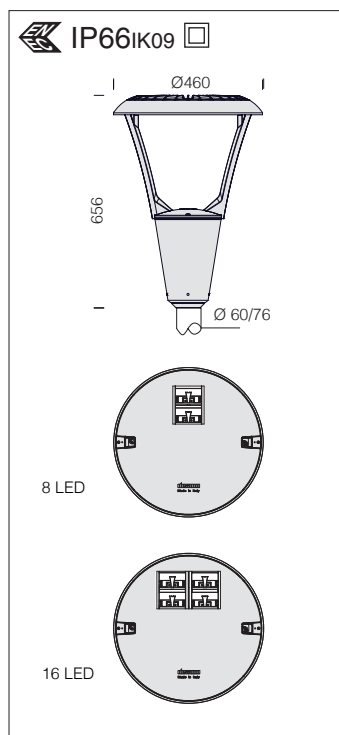
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



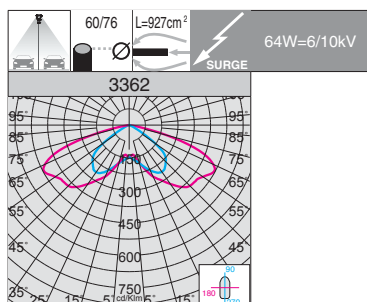
3361 Iseo 2 - residential amenities					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	7.10	330570-00	33	4000K - 3366lm - CRI 70
			330570-39		3000K - 3130m - CRI 70
LED	anthracite	7.10	330571-00	64	4000K - 6732lm - CRI 70
			330571-39		3000K - 6261lm - CRI 70

Integrated **ADVANCED PROG functions** (see table on p. 311).

Example	Power supply	n.LED	W tot	K	ølm
upon request	700mA	8	42	4000K	4455lm
		16	84		8891lm
upon request	700mA	8	42	3000K	4143lm
		16	84		8269lm

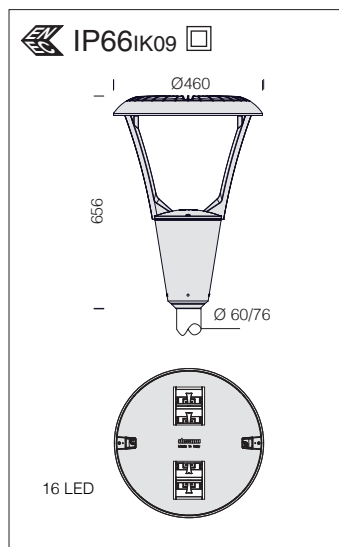


LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

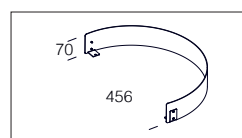


3362 Iseo 3 - residential amenities					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	7.10	330580-00	64	4000K - 6741lm - CRI 70
			330580-39		3000K - 6269lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 311).					

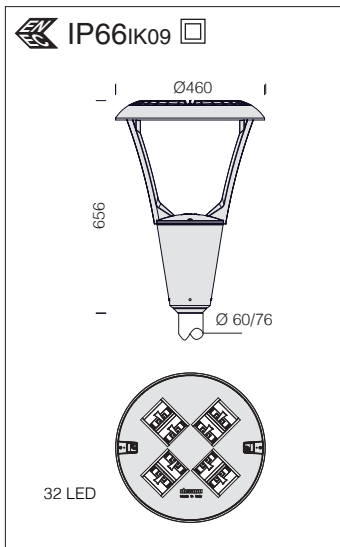
Example	Power supply	n.LED	W tot	K	ølm
upon request	700mA	16	84	4000K	8903lm
upon request	700mA	16	84	3000K	8280lm



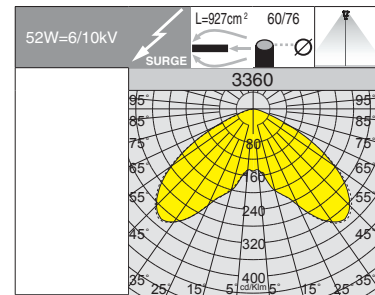
LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



acc. 109 anti-glare shield	
anthracite	991309-00
To prevent glare effects. To be fitted when Garda is installed near a window.	

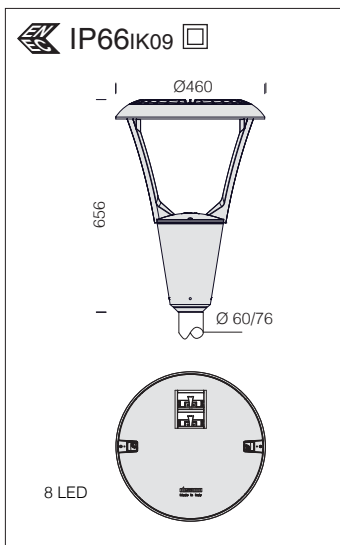


LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

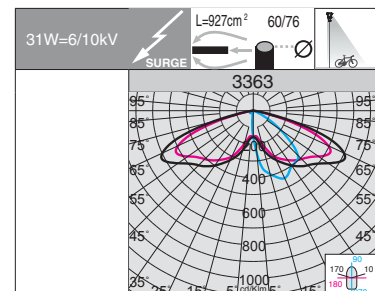


3360 Iseo 1 - wide beam					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	7.30	330560-00	52	4000K - 5667lm - CRI 70
			330560-39		3000K - 5270lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 311).					

Example	Power supply	n.LED	W tot	K	ølm
upon request	700mA	32	68	4000K	7485lm
upon request	700mA	32	68	3000K	6961lm



LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3363 Iseo 4 - cycleways					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	7.00	330590-00	31	4000K - 3319lm - CRI 70
			330590-39		3000K - 3087lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 311).					

Example	Power supply	n.LED	W tot	K	ølm
upon request	700mA	8	42	4000K	4384lm
upon request	700mA	8	42	3000K	4077lm





GENERAL CHARACTERISTICS

Housing and arms: pressed in die-cast aluminium and designed with a very small surface exposed to wind.

Optics: made of PMMA with high temperature resistance and UV rays.

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60-76mm.

Diffuser: extra-clear tempered glass, 5 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: nylon wiring plate 30% fibre glass complete with connector for mains connection and for LED module. Automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module. Equipped with an air-circulation valve.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.

Available in colour **RAL 6004**



THE RANGE OF COMO STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

**3000K
4000K**

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.



BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
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LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

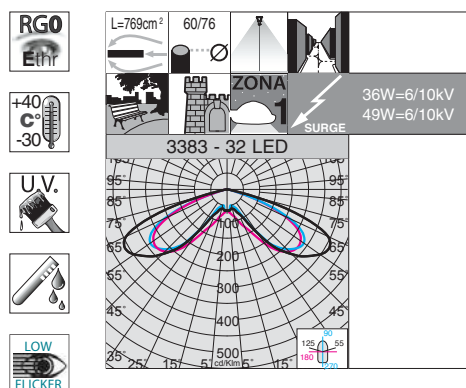
1-10V dimming ordered with sub-code -12	Adjustment range from 10%-100% with 1-10V
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps . To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i>
Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%
PLC remote control ordered with sub-code -0078	Point-to-point and system management and diagnosis system
For more information see page XVI-XX	



Exemple with
Zhaga Socket
(subcode -0054)

LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	



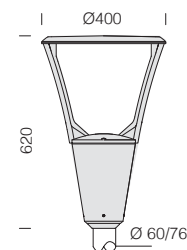
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
36	2200K - 4605lm
49	2200K - 7073lm



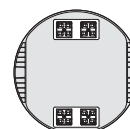
3383 Como 1 - wide beam					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.90	340552-00	36	4000K - 4112lm - CRI 70
			340552-39		3000K - 3824lm - CRI 70
LED	anthracite	5.90	340553-00	49	4000K - 6315lm - CRI 70
			340553-39		3000K - 5872lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 315).

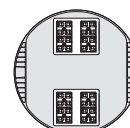
IP66IK09



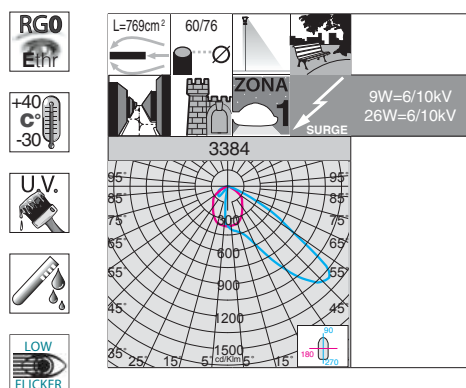
16 LED



32 LED



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



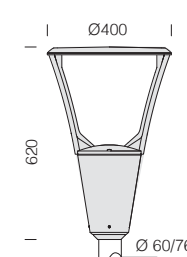
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
9	2200K - 1158lm
26	2200K - 3436lm



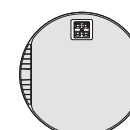
3384 Como 2 - asymmetric					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.60	340560-00	9	4000K - 1034lm - CRI 70
			340560-39		3000K - 961lm - CRI 70
LED	anthracite	5.70	340561-00	26	4000K - 3068lm - CRI 70
			340561-39		3000K - 2853lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 315).

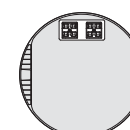
IP66IK09



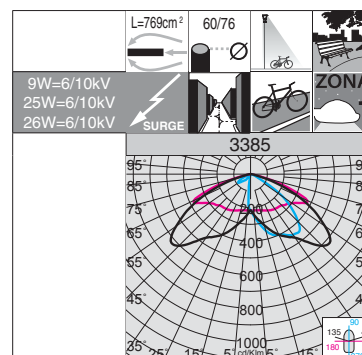
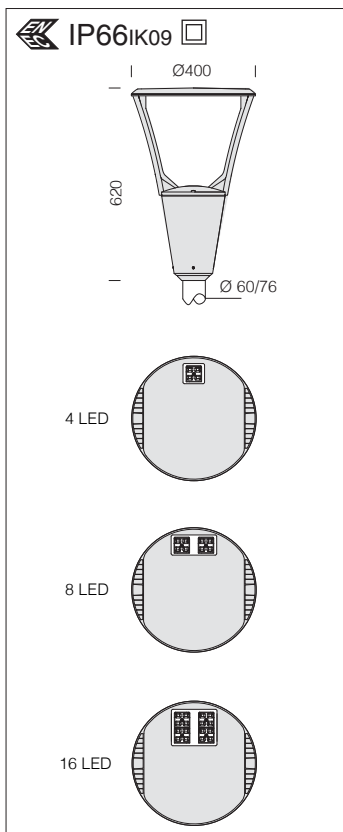
4 LED



8 LED



LED: Power factor: $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

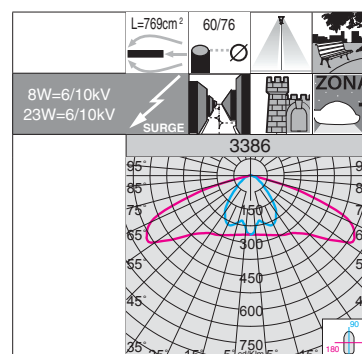
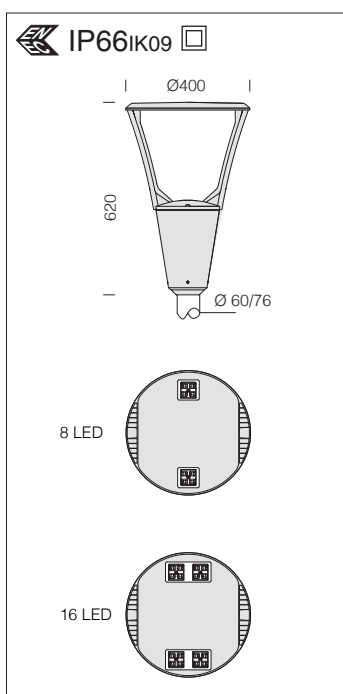


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
9	2200K - 1167lm
25	2200K - 3409lm
26	2200K - 3515lm

3385 Como 3 - cycleways					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.60	340570-00	9	4000K - 1042lm - CRI 70
			340570-39		3000K - 969lm - CRI 70
LED	anthracite	5.70	340571-00	25	4000K - 3044lm - CRI 70
			340571-39		3000K - 2830lm - CRI 70
LED	anthracite	5.70	340572-00	26	4000K - 3138lm - CRI 70
			340572-39		3000K - 2918lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 315).

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
8	2200K - 1669lm
23	2200K - 4787lm

3386 Como 4 - bi-asymmetric					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.70	340580-00	8	4000K - 1490lm - CRI 70
			340580-39		3000K - 1386lm - CRI 70
LED	anthracite	5.90	340581-00	23	4000K - 4274lm - CRI 70
			340581-39		3000K - 3975lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 315).

LED: Power factor: ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).





GENERAL CHARACTERISTICS

Housing and arms: pressed in die-cast aluminium and designed with a very small surface exposed to wind.

Optics: made of PMMA with high temperature resistance and UV rays.

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60-76mm.

Diffuser: extra-clear tempered glass, 5 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: nylon wiring plate 30% fibre glass complete with connector for mains connection and for LED module. Automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module. Equipped with an air-circulation valve.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.

Available in colour **RAL 6004**



THE RANGE OF GARDA STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

**3000K
4000K**

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.



BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
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LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

1-10V dimming ordered with sub-code -12	Adjustment range from 10%-100% with 1-10V
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps . To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i>
Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%
PLC remote control ordered with sub-code -0078	Point-to-point and system management and diagnosis system
For more information see page XVI-XX	

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.



Exemple with
Zhaga Socket
(subcode -0054)

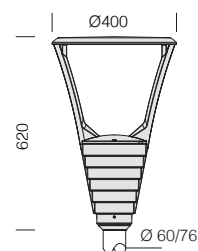
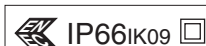
LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

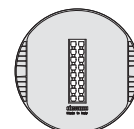


anthracite	991312-00
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To prevent glare effects. To be fitted when Garda is installed near a window.



16 LED



32 LED



3351 Garda 2 - asymmetric

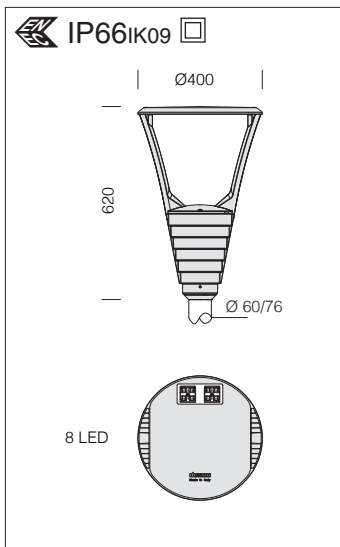
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.70	330520-00	35	4000K - 3773lm - CRI 70
			330520-39		3000K - 3508lm - CRI 70
LED	anthracite	5.90	330521-00	66	4000K - 7275lm - CRI 70
			330521-39		3000K - 6765lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 319).

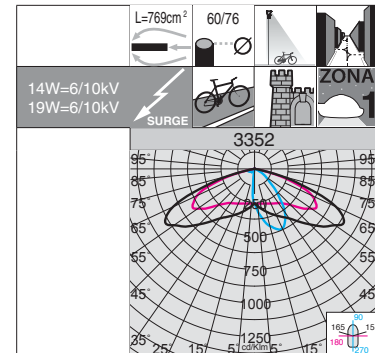
LED: Power factor ≥ 0.9 .

Luminous flux maintenance 80%:
>100.000h (L80B10).

Example	Power supply	n.LED	W tot	K	ølm
upon request	530mA	16	26	4000K	2830lm
		32	50		5765lm
upon request	530mA	16	26	3000K	2632lm
		32	50		5361lm



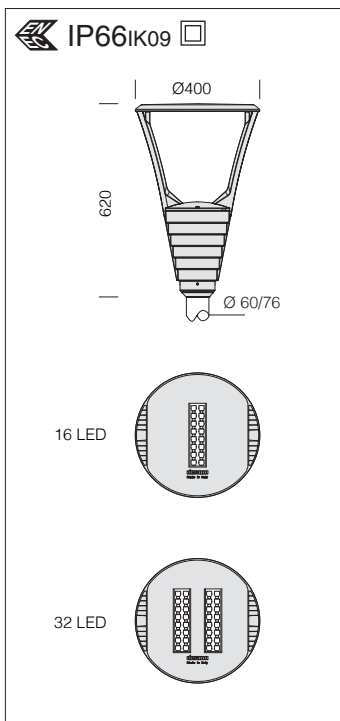
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



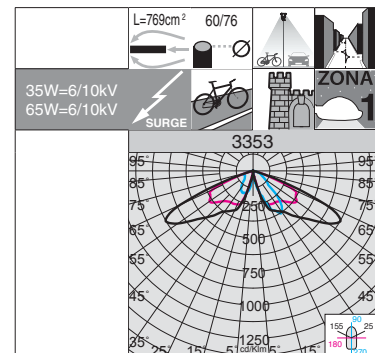
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
14	2200K - 1590lm
19	2200K - 2058lm

3352 Garda 3 - cycleways					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.60	330530-00	14	4000K - 1790lm - CRI 70
			330530-39		3000K - 1664lm - CRI 70
LED	anthracite	5.60	330531-00	19	4000K - 2318lm - CRI 70
			330531-39		3000K - 2155lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 319).



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



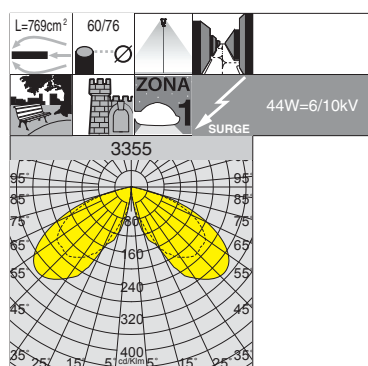
Upon request (sub-code -60)	
LED	LUMEN OUTPUT (tq= 25 °C)
LED	4000K - CRI 80

3353 Garda 4 - cycleways + residential amenities					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.70	330540-00	35	4000K - 3525lm - CRI 70
			330540-39		3000K - 3278lm - CRI 70
LED	anthracite	5.90	330541-00	65	4000K - 6887lm - CRI 70
			330541-39		3000K - 6404lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 319).

Example	Power supply	n.LED	W tot	K	ølm
upon request	530mA	16	26	4000K	2644lm
		32	50		5514lm
upon request	530mA	16	26	3000K	2458lm
		32	50		5128lm



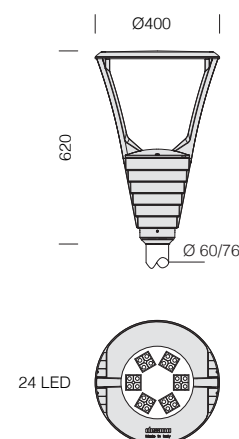


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
44	2200K - 5195lm

80.000h



IP66IK09

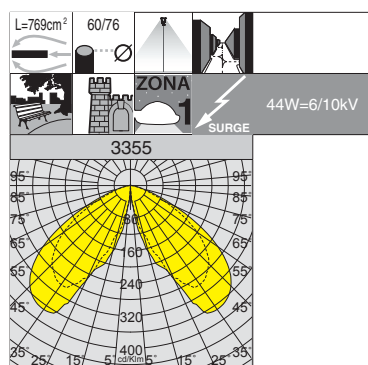


LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3355 Garda 6 - wide beam

		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.80	330551-00	44	4000K - 5851lm - CRI 70
			330551-39		3000K - 5441lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 319).

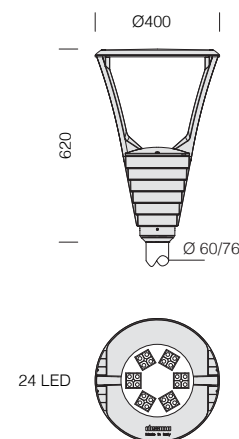


2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
44	2200K - 5121lm

80.000h



IP66IK09



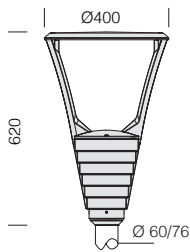
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3355 Garda 5 - wide beam

		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	anthracite	5.80	330550-00	44	4000K - 5767lm - CRI 70
			330550-39		3000K - 5363lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 319).

IP66IK09



16 LED

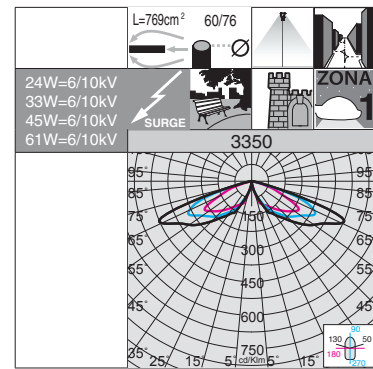


32 LED



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

>100.000h



Upon request (sub-code -60)

LED	4000K - CRI 80
-----	----------------

RG0
E_{thr}+50
C°
-40

U.V.

LOW
FLICKERLOW
FLICKER

3000K

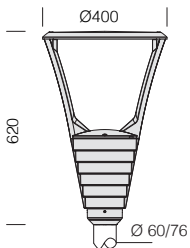
4000K

3350 Garda 1 - wide beam

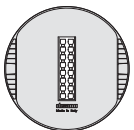
CLD BASIC					LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI	
LED	anthracite	5.70	330518-00	24	4000K - 2400lm - CRI 70	
			330518-39		3000K - 2232lm - CRI 70	
LED	anthracite	5.90	330519-00	45	4000K - 4800lm - CRI 70	
			330519-39		3000K - 4464lm - CRI 70	
LED	anthracite	5.70	330510-00	33	4000K - 3200lm - CRI 70	
			330510-39		3000K - 2976lm - CRI 70	
LED	anthracite	5.90	330511-00	61	4000K - 6400lm - CRI 70	
			330511-39		3000K - 5952lm - CRI 70	

Upon request: possibility to choose different lighting point management systems (see table on p. 319).

IP66IK09



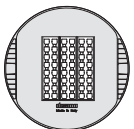
16 LED



32 LED



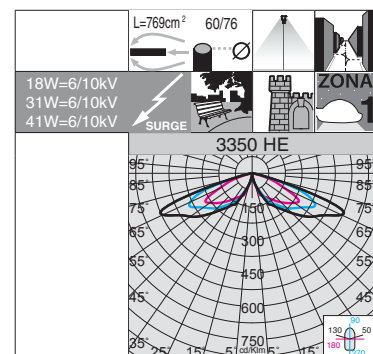
48 LED



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

>100.000h

HE



Upon request (sub-code -60)

LED	4000K - CRI 80
-----	----------------

RG0
E_{thr}+50
C°
-40

U.V.

LOW
FLICKERLOW
FLICKER

3000K

4000K

3350 Garda 1 HE - wide beam

CLD BASIC					LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI	
LED	anthracite	5.70	330512-00	18	4000K - 1823lm - CRI 70	
			330512-39		3000K - 1695lm - CRI 70	
LED	anthracite	5.90	330513-00	31	4000K - 3463lm - CRI 70	
			330513-39		3000K - 3221lm - CRI 70	
LED	anthracite	5.90	330517-00	41	4000K - 5193lm - CRI 70	
			330517-39		3000K - 4829lm - CRI 70	

Upon request: possibility to choose different lighting point management systems (see table on p. 319).



GENERAL CHARACTERISTICS

Housing and frame: pressed in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Optics: made of PMMA with high temperature resistance and UV rays.

Diffuser: extra-clear tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

UNI EN
ISO 9227



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module.

Equipment: equipped with an air-circulation valve. Complete with IP67 airtight connector for mains connection.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



THE RANGE OF LOTO STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.



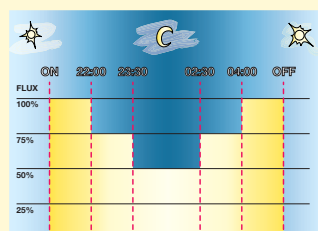
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard (except for versions with LED COB).

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



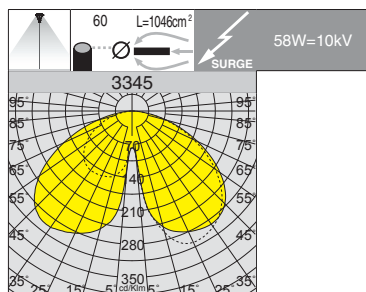
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



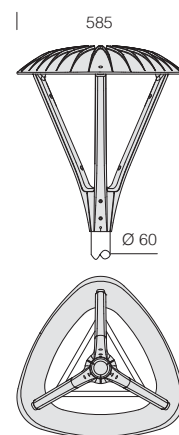
Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



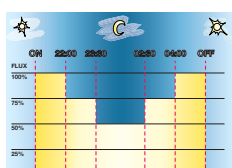
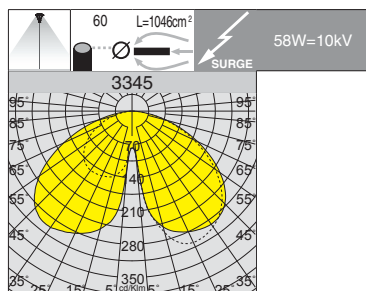
IP66IK09



3345 Loto 6 - COB					
wattage (1400mA)	colour	weight	CLD	W tot	LUMEN OUTPUT (tq= 25 °C)
			weight		K - ølm 1400mA - CRI
LED COB	grey 9007	12.50	330264-00	58	4000K - 3502lm - CRI 90
	graphite		330265-00		
LED COB	grey 9007	12.50	330264-39	58	3000K - 3257lm - CRI 90
	graphite		330265-39		
LED COB AMBER	grey 9007	12.50	330264-73	58	2200K - 3934lm - AMBER
	graphite		330265-73		

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80% 50.000h (L80B20).

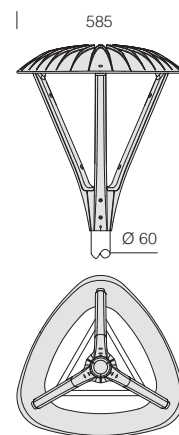
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



Sub-code -30: version with virtual midnight.



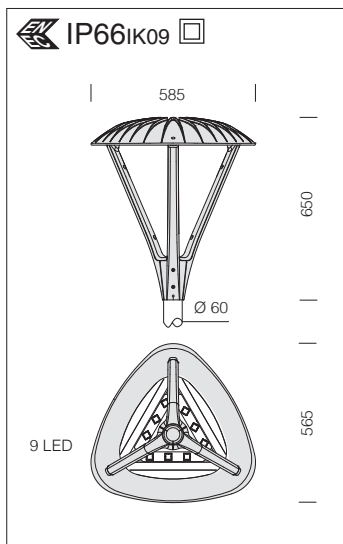
IP66IK09



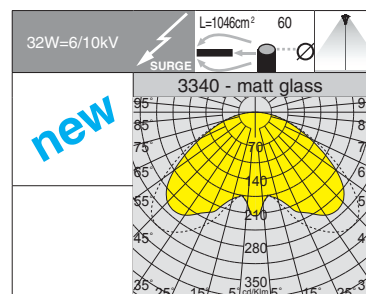
3345 Loto 6 MIDNIGHT - COB					
wattage (1400mA)	colour	weight	CLD MIDNIGHT	W tot	LUMEN OUTPUT (tq= 25 °C)
			weight		K - ølm 1400mA - CRI
LED COB	grey 9007	12.50	330264-30	58	4000K - 3502lm - CRI 90
	graphite		330265-30		
LED COB	grey 9007	12.50	330264-3028	58	3000K - 3257lm - CRI 90
	graphite		330265-3028		
LED COB AMBER	grey 9007	12.50	330264-3073	58	2200K - 3934lm - AMBER
	graphite		330265-3073		

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80% 50.000h (L80B20).

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

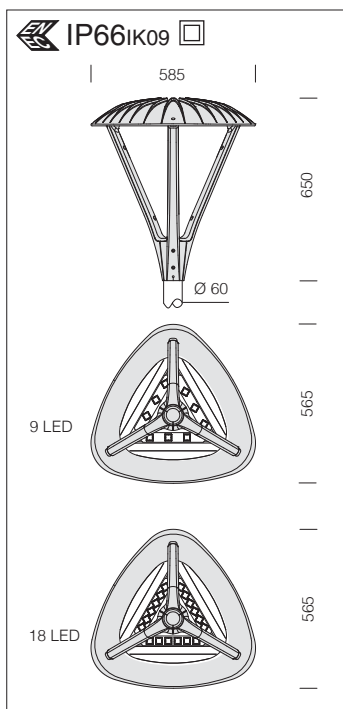


Upon request: (subcode -39)	
LED	3000K - CRI 80

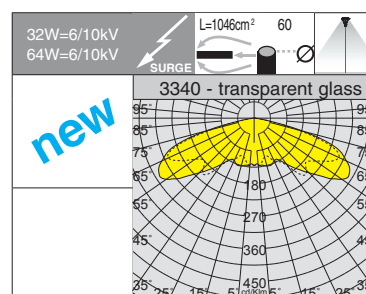
3340 Loto 2 - wide beam - matt					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (550mA)	colour	weight	code	W tot	K - ølm 550mA - CRI
LED	grey 9007	12.50	330214-00	32	4000K - 2933lm - CRI 80
	graphite	12.50	330215-00		

Integrated **ADVANCED PROG** functions (see table on p. 325).

Example	Power supply	n.LED	W tot	ølm
upon request	350mA	9	20	1937lm



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

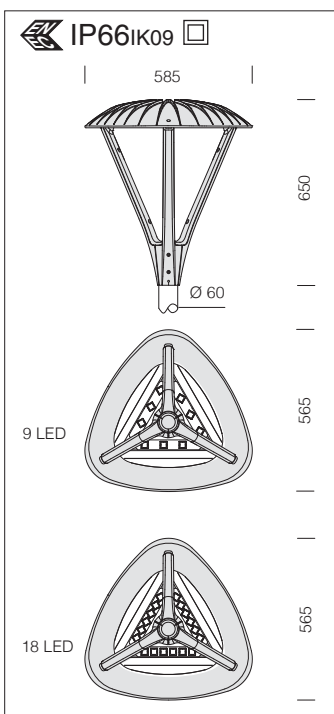
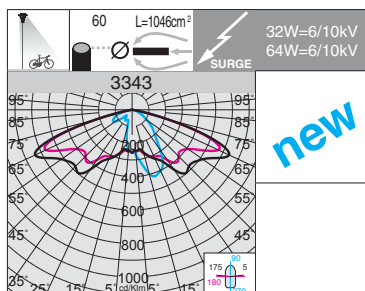


3340 Loto 1 - wide beam					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (550mA)	colour	weight	code	W tot	K - ølm 550mA - CRI
LED	grey 9007	12.50	330210-00	32	4000K - 3960lm - CRI 80
	graphite		330211-00		
LED	grey 9007	12.50	330210-39	32	3000K - 3683lm - CRI 80
	graphite		330211-39		
LED	grey 9007	12.80	330212-00	64	4000K - 7922lm - CRI 80
	graphite		330213-00		
LED	grey 9007	12.80	330212-39	64	3000K - 7367lm - CRI 80
	graphite		330213-39		

Integrated **ADVANCED PROG** functions (see table on p. 325).

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	9	20	4000K	2615lm
		18	41		5231lm
upon request	350mA	9	20	3000K	2432lm
		18	41		4665lm





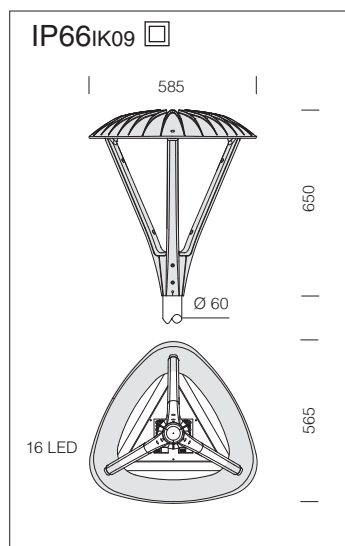
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3343 Loto 4 - cycleways

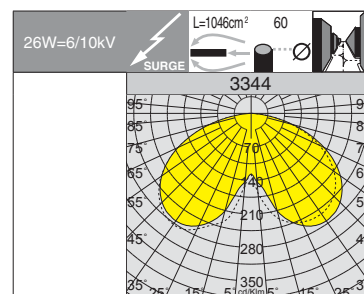
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (550mA)	colour	weight	code	W tot	K - ølm 550mA - CRI
LED	grey 9007	12.50	330240-00	32	4000K - 3956lm - CRI 80
	graphite		330241-00		
LED	grey 9007	12.50	330240-39	32	3000K - 3679lm - CRI 80
	graphite		330241-39		
LED	grey 9007	12.80	330242-00	64	4000K - 7913lm - CRI 80
	graphite		330243-00		
LED	grey 9007	12.80	330242-39	64	3000K - 7359m - CRI 80
	graphite		330243-39		

Integrated **ADVANCED PROG** functions (see table on p. 325).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	9	20	4000K	2612lm	9	20	3000K	2429lm
		18	41		5225lm	18	41		4859lm
upon request	700mA	9	41	4000K	5225lm	9	41	3000K	4859lm
		18	81		10451lm	18	81		9719lm



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

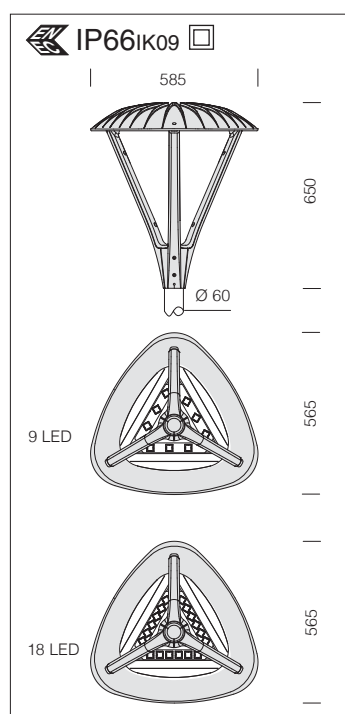


Upon request: (subcode -39)	
LED	3000K - CRI 80

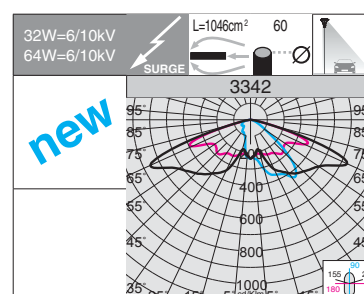
3344 Loto 5 - wide beam					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
	grey 9007	12.50	330250-00	26	4000K - 2845lm - CRI 70
	graphite		330251-00		

Integrated **ADVANCED PROG** functions (see table on p. 325).

Example	Power supply	n.LED	W tot	ølm
upon request	700mA	16	35	3757lm



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3342 Loto 3 - asymmetric					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (550mA)	colour	weight	code	W tot	K - ølm 550mA - CRI
LED	grey 9007	12.50	330230-00	32	4000K - 4010lm - CRI 80
	graphite		330231-00		
LED	grey 9007	12.50	330230-39	32	3000K - 3729lm - CRI 80
	graphite		330231-39		
LED	grey 9007	12.80	330232-00	64	4000K - 8005lm - CRI 80
	graphite		330233-00		
LED	grey 9007	12.80	330232-39	64	3000K - 7445lm - CRI 80
	graphite		330233-39		

Integrated **ADVANCED PROG** functions (see table on p. 325).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	9	20	4000K	2643lm	9	20	3000K	2458lm
		18	41		5286lm	18	41		4916lm
upon request	700mA	9	41	4000K	5286lm	9	41	3000K	4916lm
		18	81		10570lm	18	81		9830lm





GENERAL CHARACTERISTICS

Housing and frame: pressed in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Optics: made of PMMA with high temperature resistance and UV rays. Flow recovery in V0 polycarbonate, metallized high yield.

Pole connection: version with pole connector incorporated directly into the fixture's housing to enable whip-type installation on poles with diameters Ø60/62mm. Adjustable from 0° to +15° for side-mount applications; and from 0° to +15° for top-mount applications. Tilting angle of 5°.

Diffuser: extra-clear tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001). Art. 3334 in pleiglass.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

OTHER CHARACTERISTICS



UNI EN ISO 9227
Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: Complete with IP67 airtight connector for mains connection. Supplied with double insulation switch that cuts off electricity when the cover is opened. Electric gear on a removable tray for easy maintenance. Automatic temperature control inside the device with automatic resetting; equipped with an air-circulation valve.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



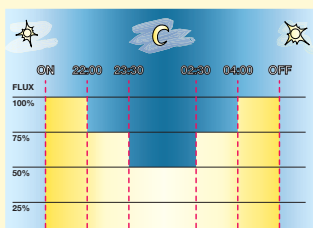
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*

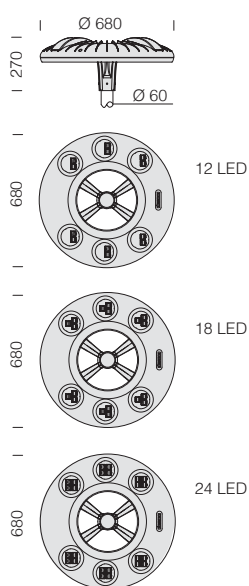


Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

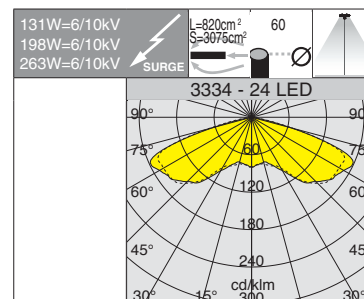
Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

IP66IK08



LED: Power factor >0.9.
Luminous flux maintenance 80%:
>100.000h (L80B20).

RG0
Ethr+40
C
-30

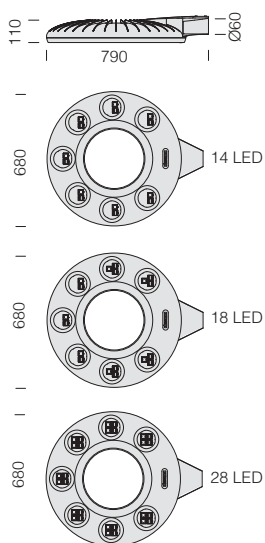
U.V.

LOW
FLICKERZONA
1LOW
FLICKERLOW
FLICKERLOW
FLICKER

3334 Disco 5 - central fixing					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (900mA)	colour	weight	code	W tot	K - ølm 900mA - CRI
LED	grey 9007	12.00	330110-00	131	4000K - 12292lm - CRI 80
	graphite		330113-00		
LED	grey 9007	12.00	330111-00	198	4000K - 18439lm - CRI 80
	graphite		330114-00		
LED	grey 9007	13.00	330112-00	263	4000K - 24585lm - CRI 80
	graphite		330115-00		

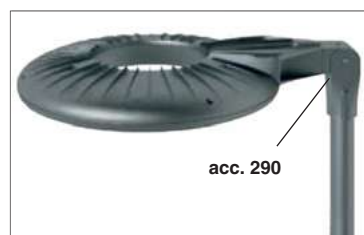
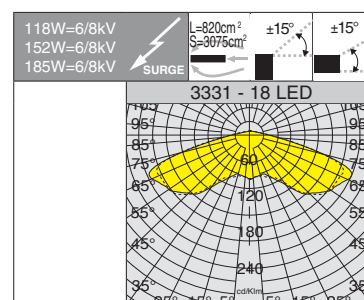
Example	Power supply	n.LED	W tot	ølm
upon request	530mA	12	77	7239lm
		18	116	10858lm
		24	153	14478lm

IP66IK08



LED: Power factor >0.9.
Luminous flux maintenance 80%:
>100.000h (L80B20).

Pole joint: acc. 290.

RG0
Ethr+40
C
-30

U.V.

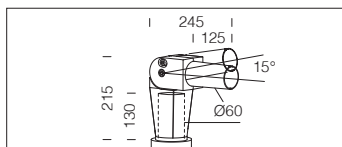
LOW
FLICKERZONA
1LOW
FLICKERLOW
FLICKERLOW
FLICKER

3331 Disco 2 - wide beam					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey 9007	12.00	330040-00	118	4000K - 12181lm - CRI 80
	graphite		330043-00		
LED	grey 9007	12.00	330041-00	152	4000K - 18273lm - CRI 80
	graphite		330044-00		
LED	grey 9007	13.00	330042-00	236	4000K - 28425lm - CRI 80
	graphite		330045-00		

acc. 290 joint

graphite	991439-00
grey	991438-00

To be used for installation on poles acc.
1477/1478 - 1485/1487.





GENERAL CHARACTERISTICS

Housing: pressed in die-cast aluminium with fastening clamp for application of the arms.

Pole connection: version with pole connector incorporated directly into the fixture's housing to enable whip-type installation on poles with diameters Ø60mm.

Diffuser: art. 3336 polycarbonate 2,5 mm thick and art. 3337-3338 tempered glass, 4 mm thick, thermal shock and impact resistant (UNI EN 12150 tests 1/2001).

Optics: made of PMMA with high temperature resistance and UV rays.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

UNI EN ISO 9227 **Upon request:** coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: automatic temperature control inside the device with automatic resetting; dedicated electronic device to protect the

OTHER CHARACTERISTICS

LED module; Complete with quick connection and anti-condensation valve for air recirculation.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



THE RANGE OF VISCONTI 2.0 STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.

Exemple with Zhaga Socket (subcode -0054)



LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with **subcode -40** (sealing cap to be ordered separately)

Zhaga Socket order with **subcode -0054** (complete with sealing cap)

Mounted directly on the fixture's body, ideal for remote lighting management applications.



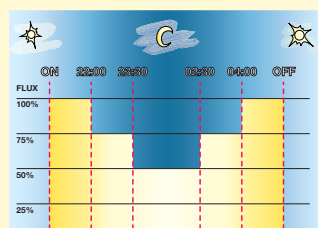
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



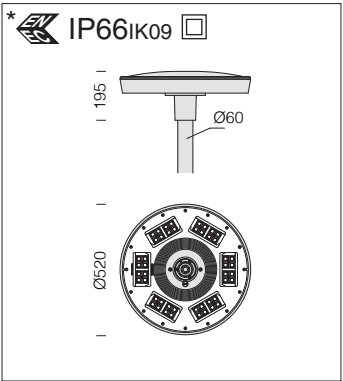
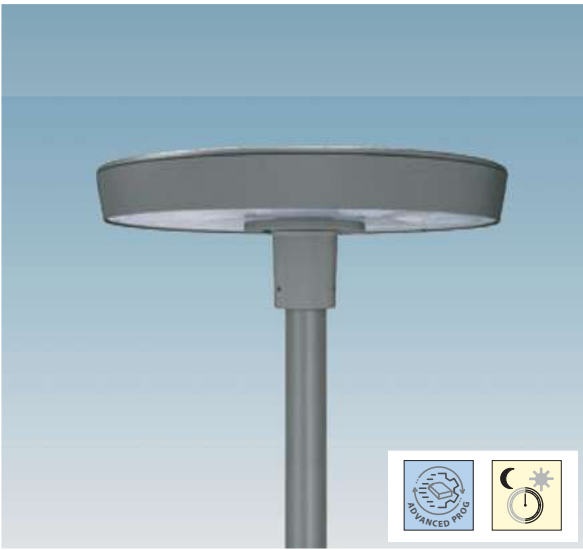
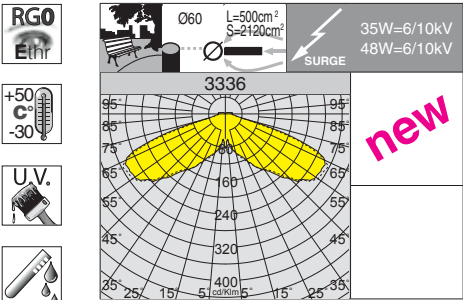
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

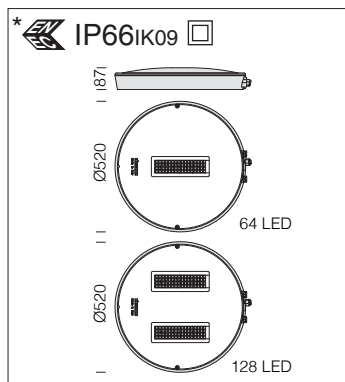
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



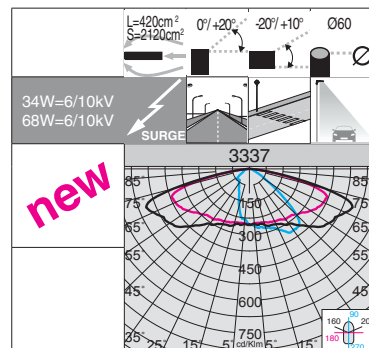
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3336 Visconti 2.0 - wide beam					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	7.20	328200-00	35	4000K - 4392lm - CRI>70
			328200-39		3000K - 4084lm - CRI>70
LED	graphite	7.20	328201-00	48	4000K - 5551lm - CRI>70
			328201-39		3000K - 5162lm - CRI>70

Integrated **ADVANCED PROG** functions (see table on p. 333).



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



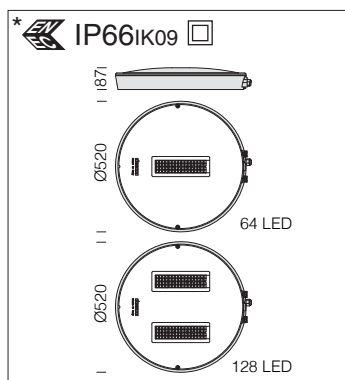
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
34	2200K - 5711lm
68	2200K - 11117lm

3337 Visconti 2.0 - residential amenities ME					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	8.30	328210-00	34	4000K - 5099lm - CRI 70
			328210-39		3000K - 4589lm - CRI 70
LED	graphite	8.30	328211-00	68	4000K - 9926lm - CRI 70
			328211-39		3000K - 8933lm - CRI 70

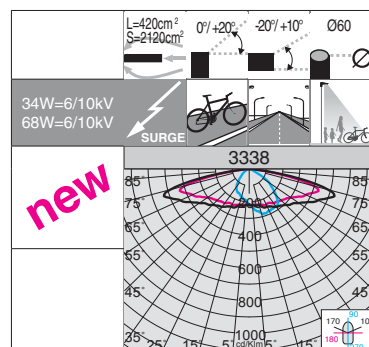
Integrated **ADVANCED PROG** functions (see table on p. 333).

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2703lm
		128	32		5263lm
upon request	530mA	64	25	4000K	3978lm
		128	50		7743lm

n.LED	W tot	K	ølm
64	16	3000K	2433lm
128	32		4736lm
64	25	3000K	3580lm
128	50		6969lm



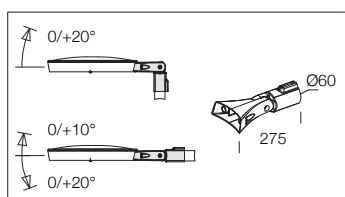
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
34	2200K - 5935lm
68	2200K - 11859lm

3338 Visconti 2.0 - cycleways					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	8.30	328240-00	34	4000K - 4971lm - CRI 70
			328240-39		3000K - 4474lm - CRI 70
LED	graphite	8.30	328241-00	68	4000K - 9641lm - CRI 70
			328241-39		3000K - 8677lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 333).



acc. 286 adjustable arm	
graphite	991445-00
In die-cast aluminium. For Ø60mm side-mount applications.	

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2636lm
		128	32		5111lm
upon request	530mA	64	25	4000K	3878lm
		128	50		7521lm

n.LED	W tot	K	ølm
64	16	3000K	2372lm
128	32		4600lm
64	25	3000K	3490lm
128	50		6769lm





GENERAL CHARACTERISTICS

Housing/cover: in die-cast aluminium.

Optics: Combined optical system made in PMMA.

Diffuser: pressed, in plexiglass.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: automatic temperature control inside the device with automatic resetting; complete with socket-plug. With dedicated electronic device to protect the LED module.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with

EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

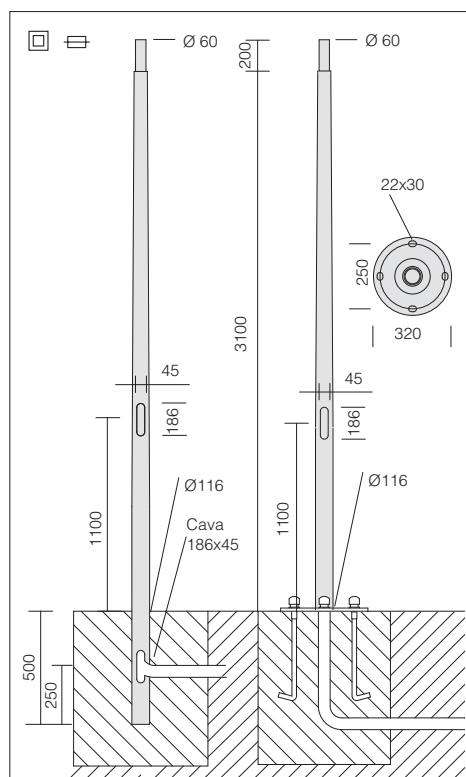
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



ACCESSORIES



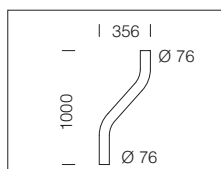
Poles and arm in painted galvanized aluminium. Designed with a hole for the insertion of the power supply cable, with mast-top mounting of $\varnothing 60$ cm for arm acc. 513 or 532. With inspection window, complete with 4-pole/3-way removable 10 mm² terminal block and 2.5 mm² shunt, with 16A fuse. The version with base requires the purchase of 4 long bolts, nuts and caps to be buried for ground installation.

acc. 1441 - Steel cone-shaped to be buried for acc. 513/532

colour	code								
grey	425266-00	3600	3100	500	1100	186	45	$\varnothing 116$	$\varnothing 60$
graphite	425267-00								

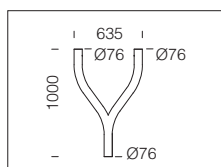
acc. 1440 - Steel cone-shaped with base acc. 513/532

colour	code								
grey	425276-00	3100	1100	186	45	$\varnothing 116$	$\varnothing 60$	$\varnothing 320$ foro 22x30	
graphite	425277-00								



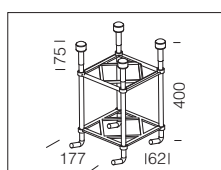
acc. 513 arm for pole

grey	991290-00
graphite	991291-00
arm for Aura pole acc. 1440-1441.	



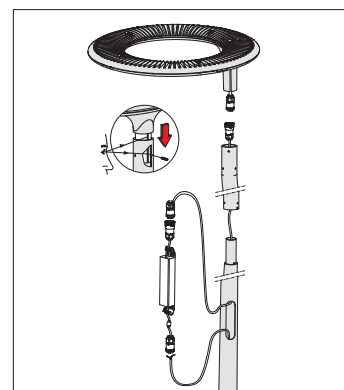
acc. 532 double arm for pole

grey	991292-00
graphite	991293-00
arm for Aura pole acc. 1440-1441.	

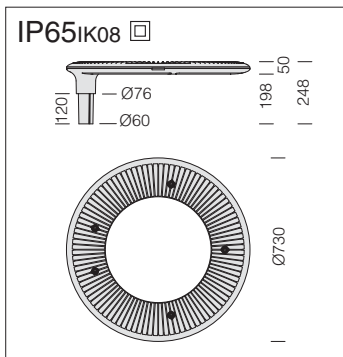


acc. 299 Long bolts

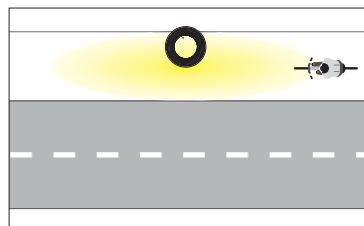
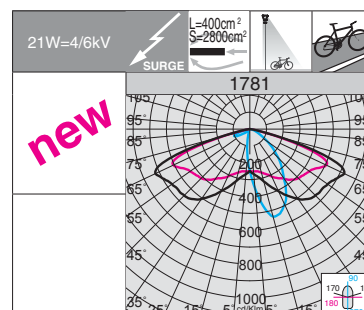
991396-00
Long bolts should always be purchased with pole 1440.



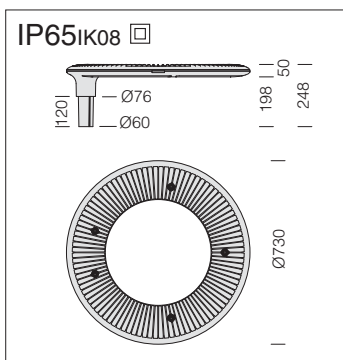
Fixture supplied with driver to be placed inside the pole, complete with 3.5 m connector and cable.



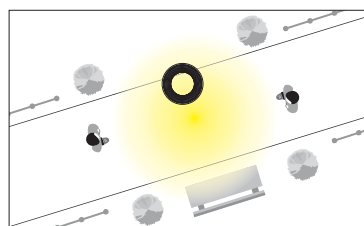
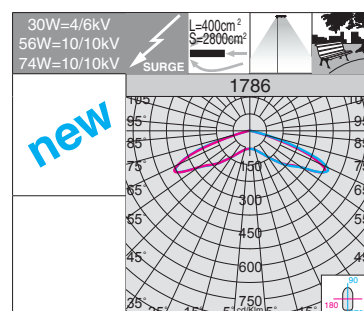
LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



1781 Aura - pedestrian/cycleways					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	8.50	423280-00	21	4000K - 2905lm - CRI 70
	graphite		423281-00		
LED	grey 9007	8.50	423280-39	21	3000K - 2715lm - CRI 70
	graphite		423281-39		



LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



1786 Aura - wide beam					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	8.50	423278-00	30	4000K - 4200lm - CRI 70
	graphite		423279-00		
LED	grey 9007	8.50	423278-39	30	3000K - 3924lm - CRI 70
	graphite		423279-39		
LED	grey 9007	8.50	423270-00	56	4000K - 7242lm - CRI 70
	graphite		423271-00		
LED	grey 9007	8.50	423270-39	56	3000K - 6768lm - CRI 70
	graphite		423271-39		
LED	grey 9007	8.50	423274-00	74	4000K - 9170lm - CRI 70
	graphite		423277-00		
LED	grey 9007	8.50	423274-39	74	3000K - 8528lm - CRI 70
	graphite		423277-39		





GENERAL CHARACTERISTICS

Housing, lid, spokes, and pole connection: die-cast aluminium.

Diffuser: tempered glass, 5 mm thick, withstands thermal shock and impacts.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

UNI EN
ISO 9227



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: nylon wiring plate, 30% fibre glass, removable, tool-free, for quick maintenance. Standard knife switch, which enables to automatically cut off the power supply during maintenance. Complete with quick-connector for connection to the line (art. 3202, 3209, 3212, 3214, 3322). Can be adjusted by loosening the bolts without taking the lighting fixture apart. Temperature control device. In the event of an unexpected LED temperature rise caused by particular weather conditions or a LED failure, the system will reduce the luminous flux to lower the working temperature and guarantee proper operation.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.

Available in white color.



THE RANGE OF LUCERNA STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.



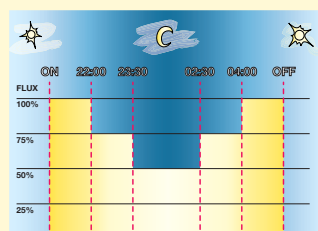
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard (except for versions with LED COB).

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

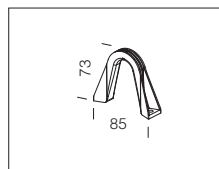
Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



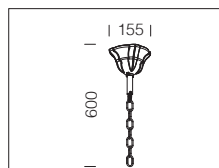
SUSPENSION ACCESSORIES: ART

3206 - 3216 - 3326

**acc. 329 suspension unit**

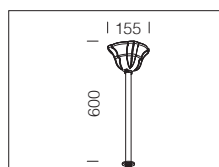
anthracite 998003-00

In die-cast aluminium. Supplied separately for suspension applications.

**acc. 518 chain connection**

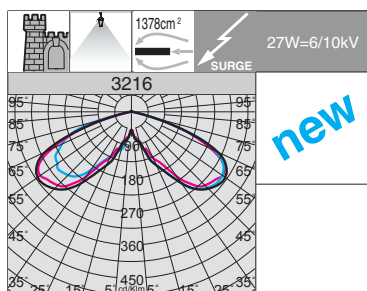
anthracite 991284-00

Supplied with suspension chain. To be used with acc. 329.

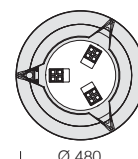
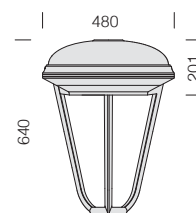
**acc. 519 rod connection**

anthracite 991285-00

Supplied with suspension rod.



>100.000h

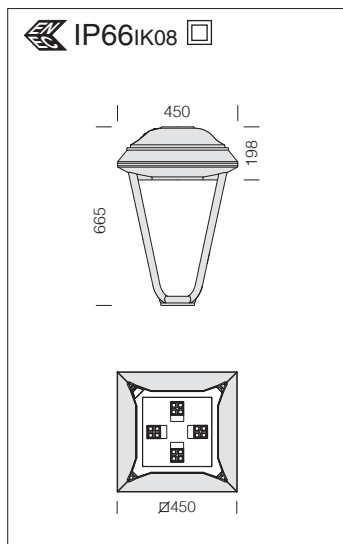
**3216 Lucerna R 6**

		CLD CTL		LUMEN OUTPUT (tg= 25 °C)	
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	anthracite	10.55	327210-00	27	4000K - 3390lm - CRI>70
			327210-39		3000K - 3153lm - CRI>70

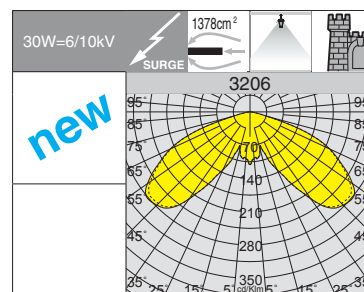
Integrated **ADVANCED PROG** functions (see table on p. 339).

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	530mA	12	42	4000K	5180lm	12	42	3000K	4817lm



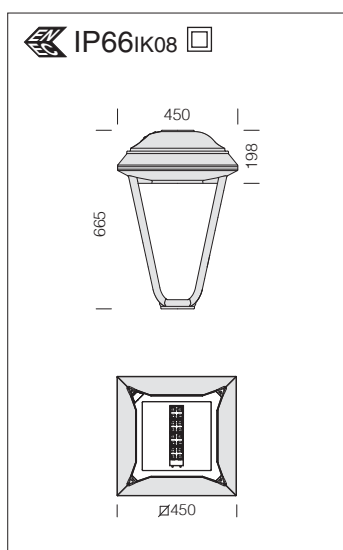
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



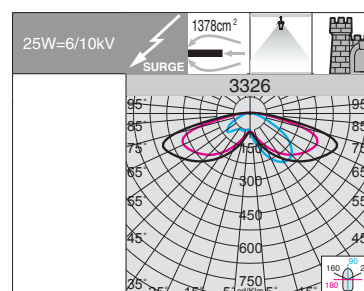
3206 Lucerna Q 6					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (300mA)	colour	weight	code	W tot	K - ølm 300mA - CRI
LED	anthracite	10.55	327200-00	30	4000K - 3830lm - CRI>70
			327200-39		3000K - 3562lm - CRI>70
Integrated ADVANCED PROG functions (see table on p. 339).					

Example	Power supply	n.LED	W tot	K	ølm
upon request	470mA	16	48	4000K	5700lm

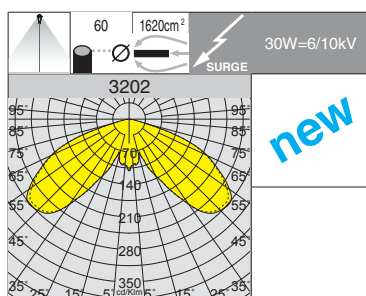
n.LED	W tot	K	ølm
16	48	3000K	5301lm



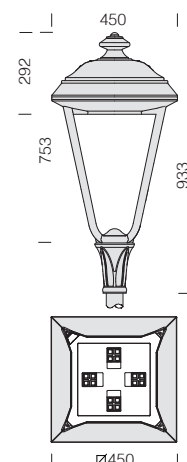
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3326 Lucerna Q 9 FX					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	10.55	327202-00	25	4000K - 2910lm - CRI 70
			327202-39		3000K - 2706lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 339).					



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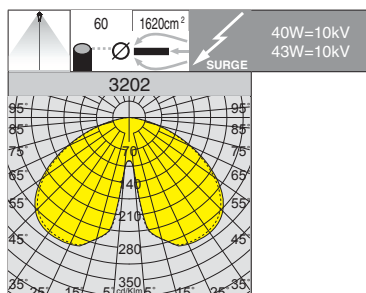
3202 Lucerna Q

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (300mA)	colour	weight	code	W tot	K - ølm 300mA - CRI
LED	anthracite	12.55	326920-00	30	4000K - 3830lm - CRI>70
			326920-39		3000K - 3562lm - CRI>70

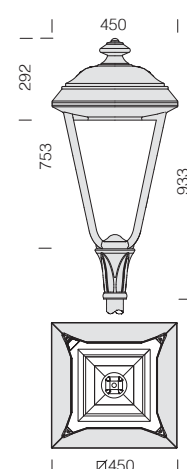
Integrated **ADVANCED PROG** functions (see table on p. 339).

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	470mA	16	48	4000K	5700lm	16	48	3000K	5301lm



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3202 Lucerna Q - COB

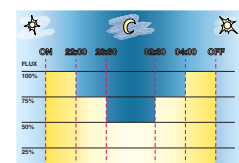
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED COB	anthracite	12.55	326923-00	40	4000K - 2579lm - CRI 90
			326923-39		3000K - 2398lm - CRI 90
LED COB AMBER	anthracite	12.55	326923-73	43	2200K - 2953lm - AMBER

LED COB: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

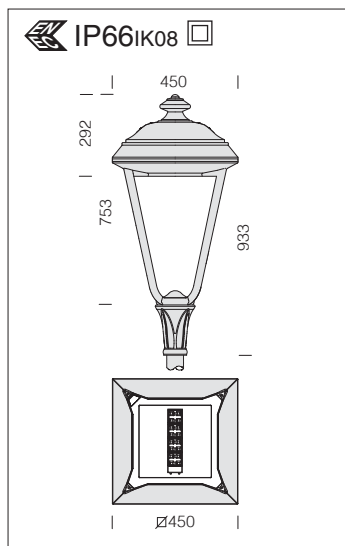
Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

3202 Lucerna Q MIDNIGHT - COB

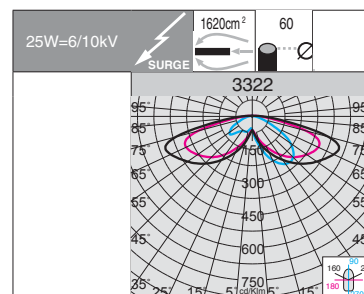
		CLD MIDNIGHT		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED COB	anthracite	12.55	326923-30	40	4000K - 2579lm - CRI 90
			326923-3028		3000K - 2398lm - CRI 90
LED COB AMBER	anthracite	12.55	326923-3073	43	2200K - 2953lm - AMBER



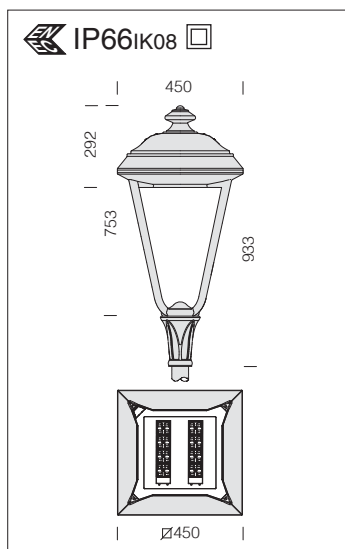
Sub-code -30: version with **virtual midnight**.



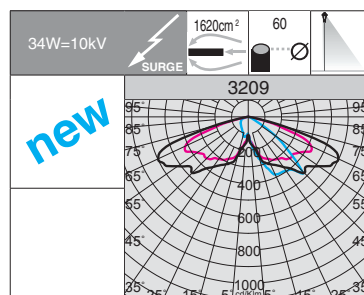
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3322 Lucerna Q 7 FX					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (530mA)	colour	weight	code	W tot	K - ølm 530mA - CRI
LED	anthracite	12.55	326922-00	25	4000K - 2910lm - CRI 70
			326922-39		3000K - 2706lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 339).					



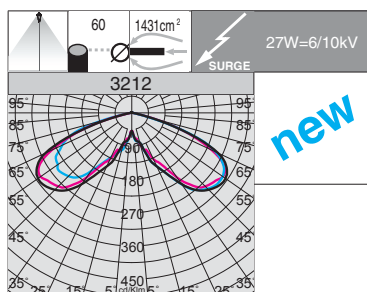
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3209 Lucerna Q 8 - residential amenities					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	anthracite	13.55	327220-00	34	4000K - 4072lm - CRI>70
			327220-39		3000K - 3787lm - CRI>70
Integrated ADVANCED PROG functions (see table on p. 339).					

Example	Power supply	n.LED	W tot	K	ølm
upon request	520mA	32	50	4000K	5720lm

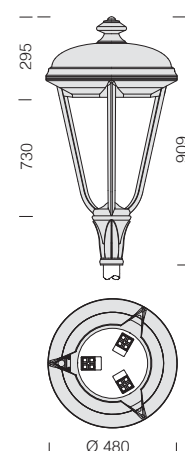
n.LED	W tot	K	ølm
32	50	3000K	5320lm



>100.000h



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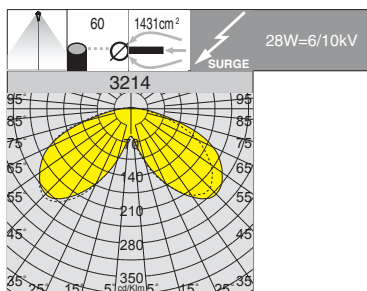
3212 Lucerna R					
CLD PROG			LUMEN OUTPUT (tq= 25 °C)		
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	anthracite	12.35	326970-00	27	4000K - 3390lm - CRI>70
			326970-39		3000K - 3153lm - CRI>70

Integrated **ADVANCED PROG** functions (see table on p. 339).

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

	Power supply	n.LED	W tot	K	ølm
Upon request	530mA	12	42	4000K	5180lm

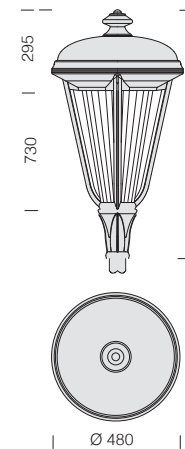
n.LED	W tot	K	ølm
12	42	3000K	4817lm



>100.000h



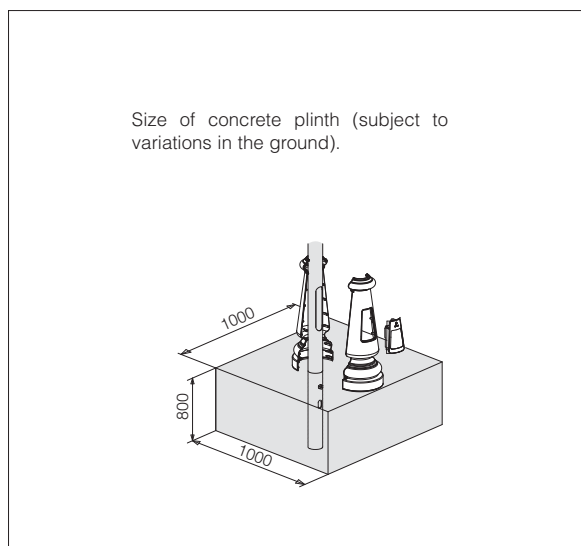
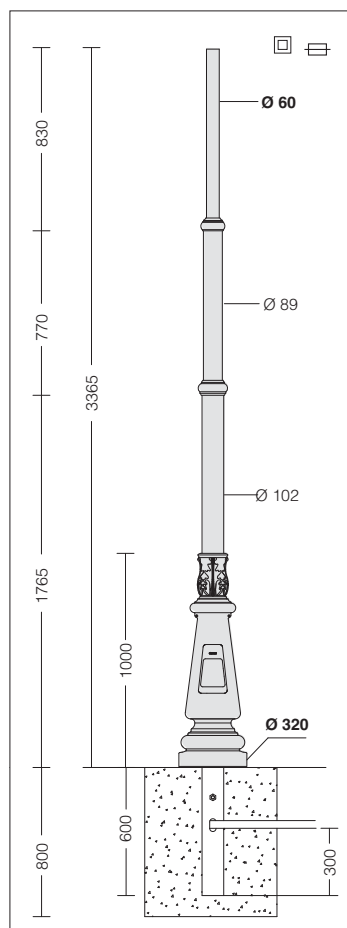
IP66IK08



3214 Lucerna R					
CLD PROG			LUMEN OUTPUT (tq= 25 °C)		
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	anthracite	12.35	326985-00	28	4000K - 2626lm - CRI>70

Integrated **ADVANCED PROG** functions (see table on p. 339).

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).
Diffuser: in shatterproof and self-extinguishing V2 polycarbonate, UV-stabilized, frosted inside for improved glare control.



acc. 1411 - Lucerna pole to be buried									
colour	code								
anthracite	425230-00	3965	3365	600	300	320	60	Ø 320	Ø 60

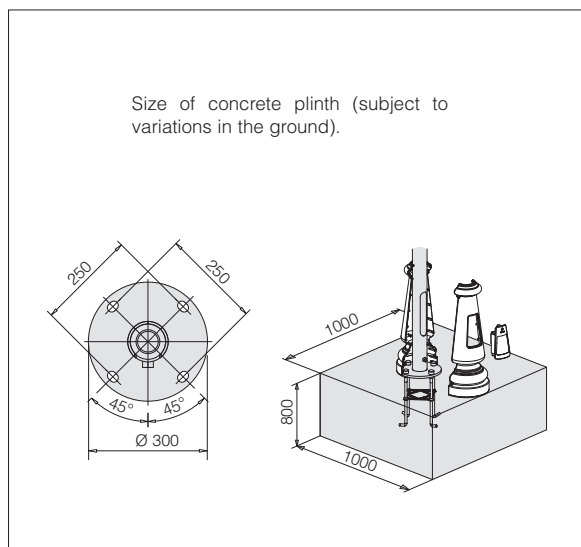
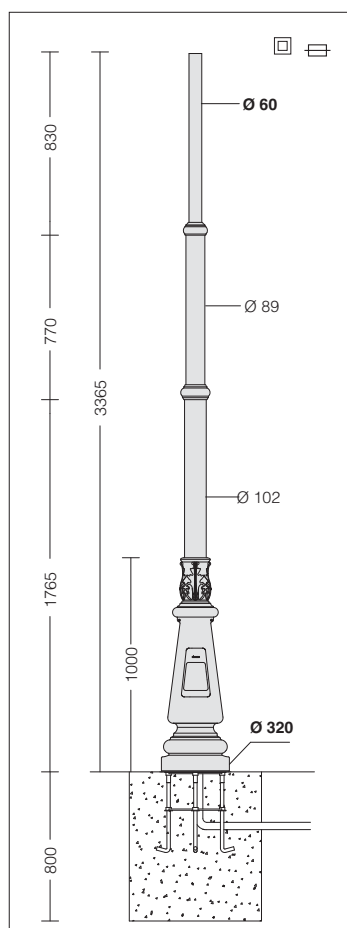
Hot galvanized steel poles, coated using thermosetting polyester powder.

Base, inspection window and decorations made from die-cast aluminium, pressed and varnished. Equipped with inspection window, 2 protection fuse holders, 2 fuses (16A), removable terminal block.

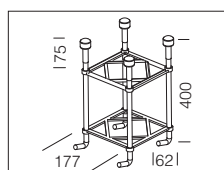
Stainless steel screws, double insulation.



Available on request: an inspection window that can be customized logo.

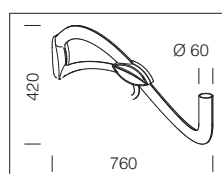
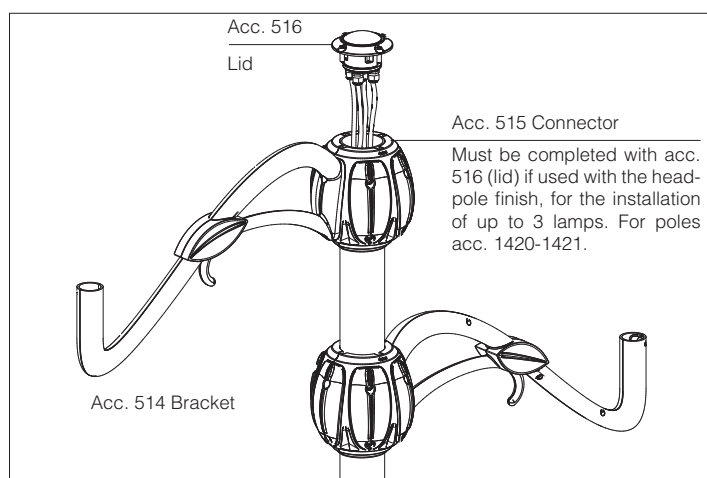


acc. 1410 - Lucerna pole with base								
colour	code							
anthracite	425220-00	3365	300	320	60	Ø 320	Ø 60	Ø 300

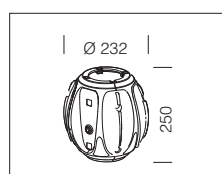


acc. 299 log bolts
991396-00
Log bolts supplied with poles 1410.

NOTE: before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted.



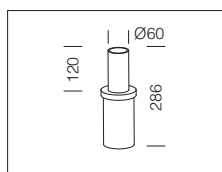
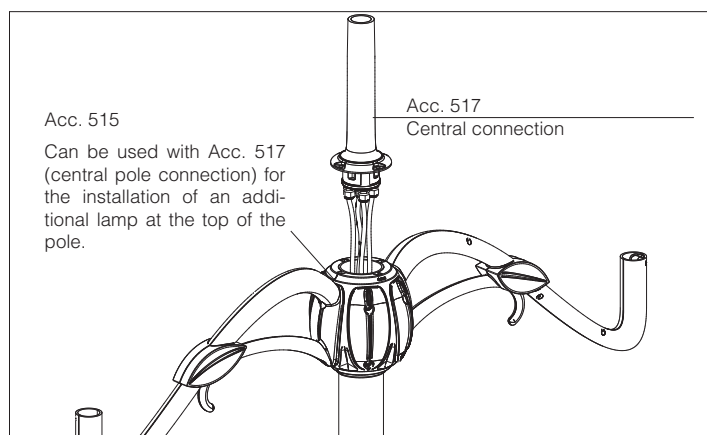
acc. 514 bracket	
anthracite	991280-00
Bracket in die-cast aluminium with feeder, external PVC sheath and double insulated conductors, 2x1 sqmm section. Stainless steel screws.	



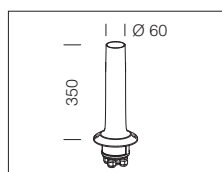
acc. 515 connector Ø 102	
anthracite	991281-00
In die-cast aluminium for stainless steel pole Ø 102, for the installation of up to 3 brackets (acc. 514) plus a central bracket (acc. 517). Stainless steel screws.	



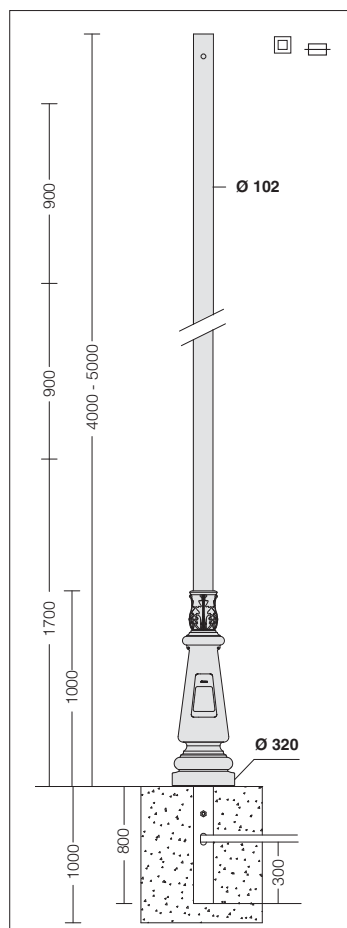
acc. 516 lid	
anthracite	991282-00
Die-cast aluminium lid. Supplied with plastic distribution box and terminal for power connection. Stainless steel screws.	



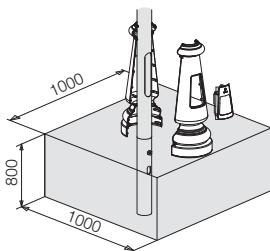
acc. 528 mast top pole connection	
anthracite	991288-00
To be used as a mast top pole connection on poles acc. 1420/21.	



acc. 517 central connection	
anthracite	991283-00
Made from die-cast aluminium, to be used with acc. 1420-21. Supplied with power lead, 2x1 sqmm section. Plastic distribution box and terminal for electrical connection. Stainless steel screws. To be used for pole-head connection with acc. 1420-21.	



Size of concrete plinth (subject to variations in the ground).



acc. 1421 - Lucerna pole to be buried

colour	code								
anthracite	425330-00	4800	4000	800	300	320	60	Ø 320	Ø 102
anthracite	425331-00	5800	5000	800	300	320	60	Ø 320	Ø 102

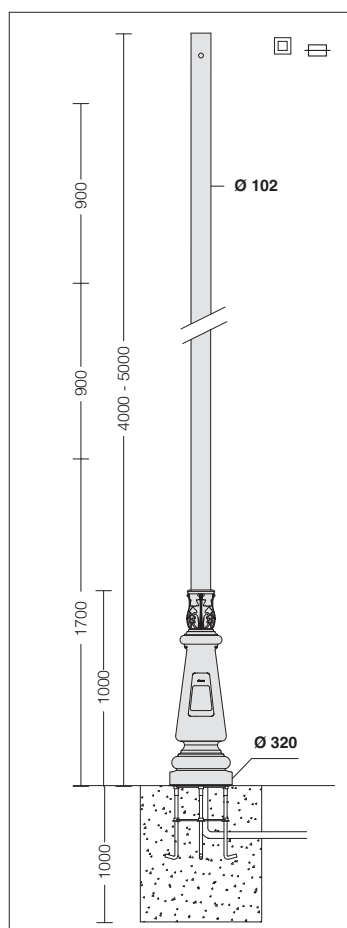
Hot galvanized steel poles, coated using thermosetting polyester powder.

Base, inspection window and decorations made from die-cast aluminium, pressed and varnished. Equipped with inspection window, 2 protection fuse holders, 2 fuses (16A), removable terminal block.

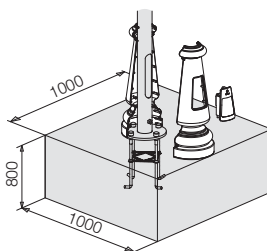
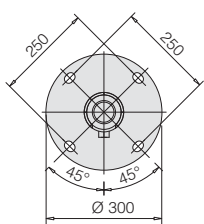
Stainless steel screws, double insulation.



Available on request: an inspection window that can be customized logo.

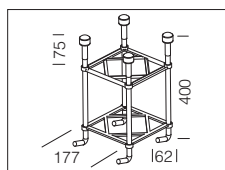


Size of concrete plinth (subject to variations in the ground).



acc. 1420 - Lucerna pole with base

colour	code								
anthracite	425320-00	4000	300	320	60	Ø 320	Ø 102	Ø 300	
anthracite	425321-00	5000	300	320	60	Ø 320	Ø 102	Ø 300	



acc. 299 log bolts

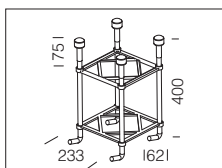
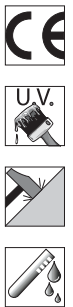
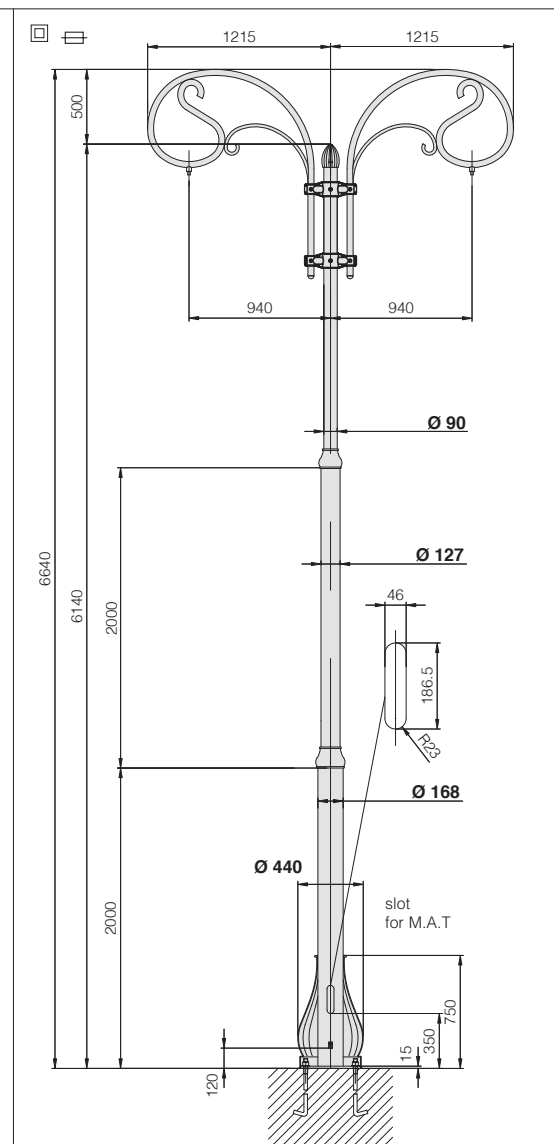
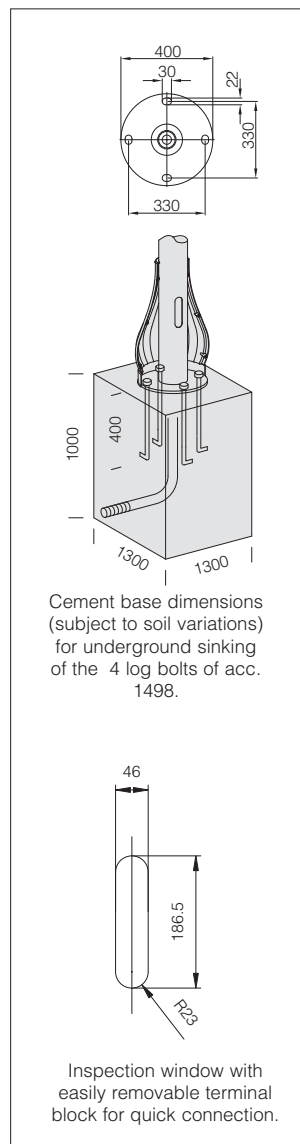
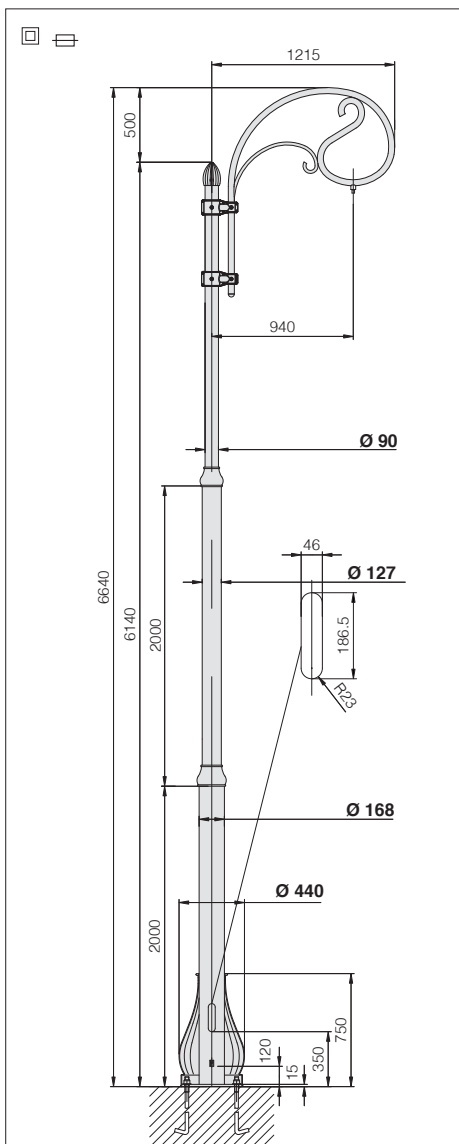
991396-00

Log bolts supplied with poles 1420.

NOTE: before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted.







acc. 297 log bolts
426448-00
Log bolts are always to be used with the pole 1498.

acc. 1498 Liberty pole									
version	colour	code	6140	350	186.5	46	Ø 440	Ø 90	Ø 400 hole 30x22
with 1 arm	anthracite	425203-00							
with 2 arms	anthracite	425204-00							

Log bolts are to be bought separately acc. 297.



GENERAL CHARACTERISTICS

Housing and frame: pressed in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Pole connection: pressed in die-cast aluminium. Suited for poles with a diameter 60 mm.

Diffuser: extra-clear tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1: 2001).

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: dedicated electronic device to protect the LED module. Supplied with connector for mains connection and complete with an air-circulation valve

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Registered Design The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.

Available in:

- two-colour version (anthracite - graphite)
- pearl colour (for codes see website)



THE RANGE OF VOLO STREET LAMPS IS AVAILABLE IN THE FOLLOWING COLOUR TEMPERATURES:

3000K
4000K

3000K - 4000K as standard: lamps with 3000K-4000K white light, instead, is the best choice for lighting up urban areas, streets, residential centres and generally all areas where this type of light guarantees greater safety and visual comfort.

Upon request LED 4000K - CRI 80 versions with **sub-code -60**.

Example with Zhaga Socket
(subcode -0054)



LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with **subcode -40**
(sealing cap to be ordered separately)

Zhaga Socket order with **subcode -0054** (complete with sealing cap)

Mounted directly on the fixture's body, ideal for remote lighting management applications.



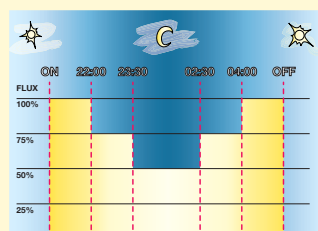
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



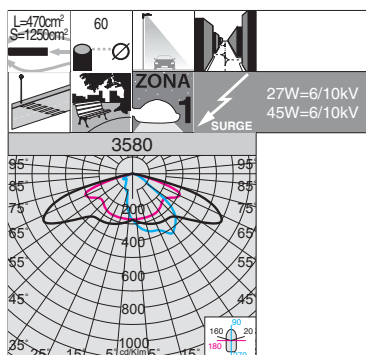
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

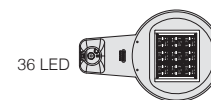
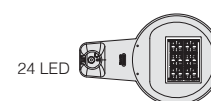
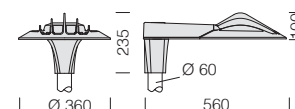
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



Upon request (sub-code -60)	
LED	CRI 80



* IP66 IK09 Registered Design DM/100271

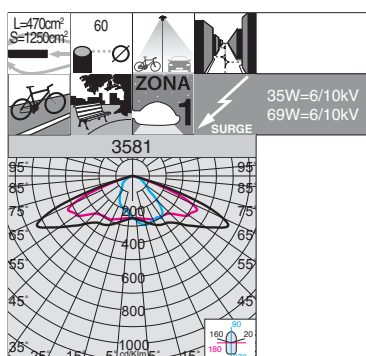


3580 Volo - residential amenities - high performance					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.00	424600-2168	27	4000K - 4346lm - CRI 70
			424600-3968		3000K - 4115lm - CRI 70
LED	graphite	6.50	424602-2168	45	4000K - 7412lm - CRI 70
			424602-3968		3000K - 7019lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 351).					

Integrated **ADVANCED PROG** functions (see table on p. 351).

Optique : made of PMMA with high temperature resistance and UV rays.

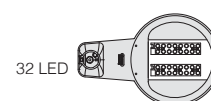
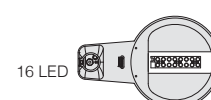
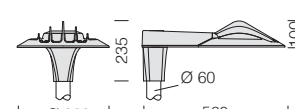
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



Upon request (sub-code -60)	
LED	CRI 80



* IP66 IK09 Registered Design DM/100271

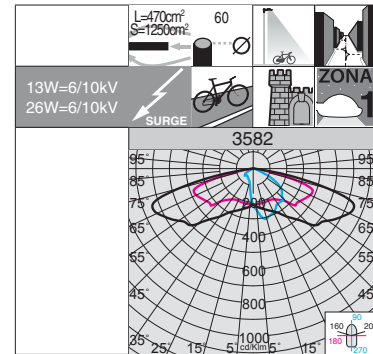
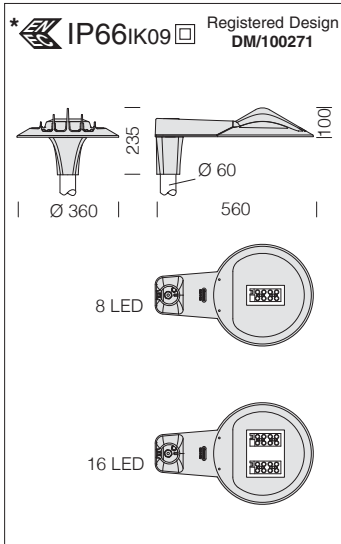


3581 Volo - cycleways + residential amenities					
		CLD PROG			LUMEN OUTPUT (tq= 25 °C)
wattage	colour	weight	code	W tot	K - olm - CRI
LED	graphite	6.00	424610-2168	35	4000K - 4411lm - CRI 70
			424610-3968		3000K - 4177lm - CRI 70
LED	graphite	6.20	424612-2168	69	4000K - 8970lm - CRI 70
			424612-3968		3000K - 8494lm - CRI 70
Integrated ADVANCED PROG functions (see table on p. 351).					

Integrated **ADVANCED PROG** functions (see table on p. 351).

Optique : made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



Upon request (sub-code -60)	
LED	CRI 80

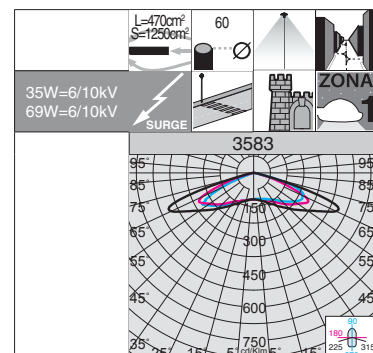
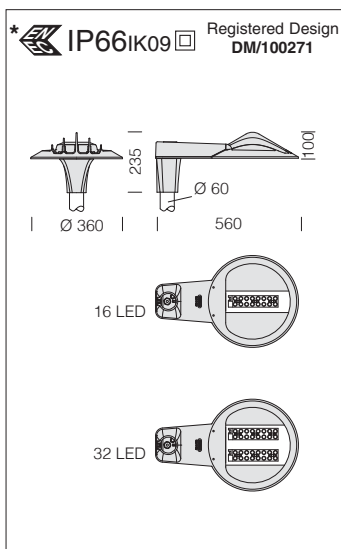


Optique : made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3582 Volo - cycleways					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.00	424620-2168	13	4000K - 1847lm - CRI 70
			424620-3968		3000K - 1716lm - CRI 70
LED	graphite	6.20	424622-2168	26	4000K - 3589lm - CRI 70
			424622-3968		3000K - 3337lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 351).



Upon request (sub-code -60)	
LED	CRI 80



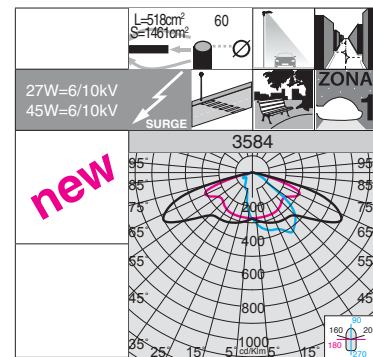
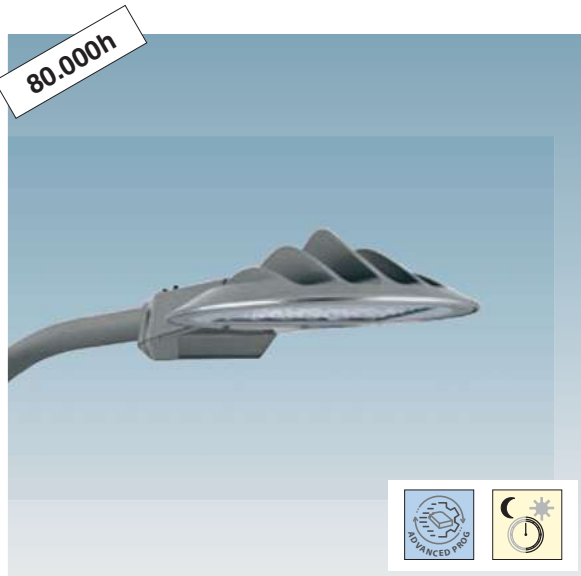
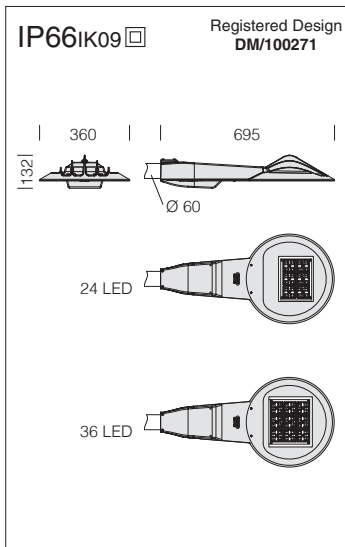
Optique : made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3583 Volo - wide beam					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	6.00	424630-2168	35	4000K - 4261lm - CRI 70
			424630-3968		3000K - 4035lm - CRI 70
LED	graphite	6.20	424632-2168	69	4000K - 8715lm - CRI 70
			424632-3968		3000K - 8253lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 351).





Upon request (sub-code -60)	
LED	CRI 80

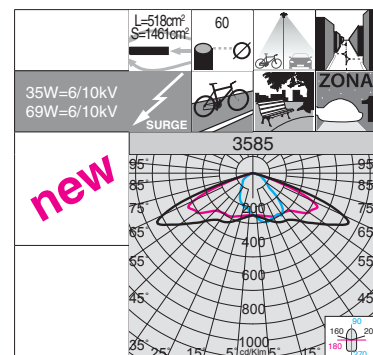
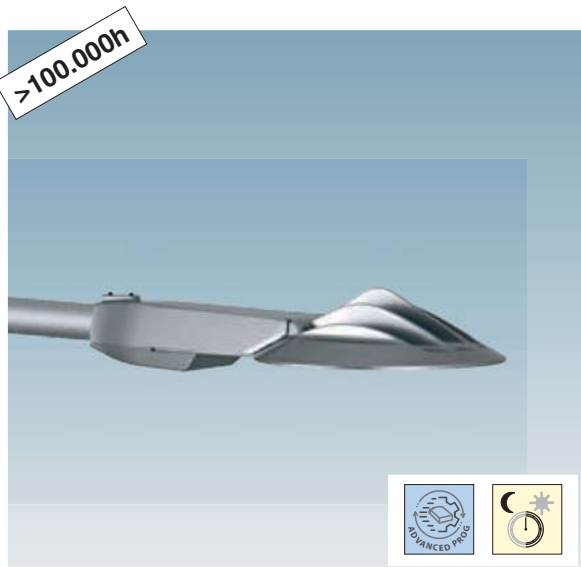
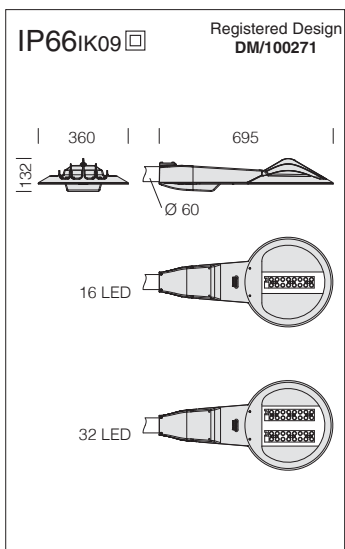


Optique : made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3584 Volo - residential amenities - high performance					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - CRI
LED	graphite	6.00	424640-00	27	4000K - 4346lm - CRI 70
			424640-39		3000K - 4115lm - CRI 70
LED	graphite	6.50	424641-00	45	4000K - 7412lm - CRI 70
			424641-39		3000K - 7019lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 351).



Upon request (sub-code -60)	
LED	CRI 80



Optique : made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3585 Volo - cycleways + residential amenities					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - CRI
LED	graphite	6.00	424650-00	35	4000K - 4411lm - CRI 70
			424650-39		3000K - 4177lm - CRI 70
LED	graphite	6.20	424651-00	69	4000K - 8970lm - CRI 70
			424651-39		3000K - 8494lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 351).



GENERAL CHARACTERISTICS

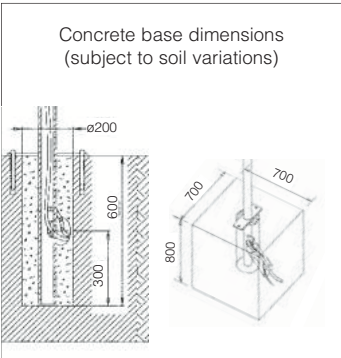
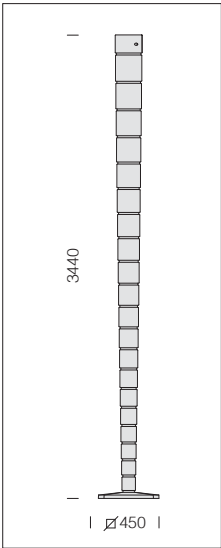
Housing/Frame: in die-cast aluminium.

Reflector: made of satin aluminium.

Painting: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cathaphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

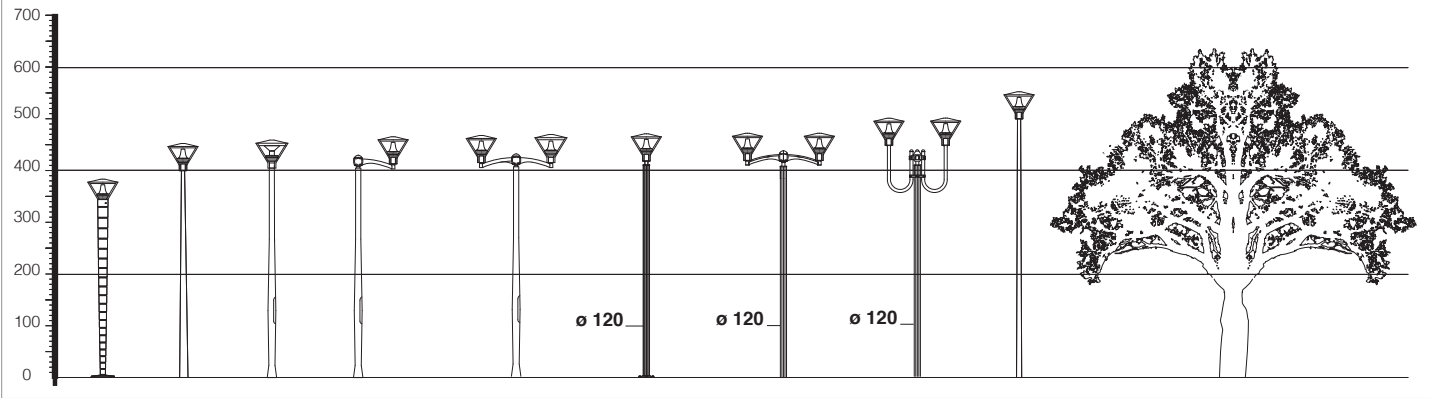
Diffuser: in vandal-resistant V2 self-extinguishing polycarbonate, UV-stabilized, smooth and clear.

Standard supply: safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module. Supplied with double insulation switch.

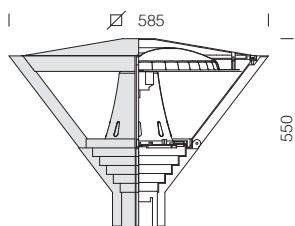


acc. 1510 Ambrosiano pole	
grey 9007	426360-00
grey	426359-00
In cast iron. Complete with base. Internal tube Ø 70mm.	

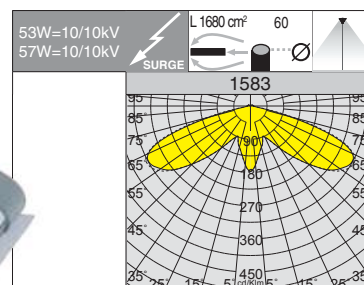
Specify pole height. For poles and accessories, see chapter: Poles



IP65IK09



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

RG0
E_h+40
C
-20

U.V.

ZONA
2ZONA
1LOW
FLICKER

2200K

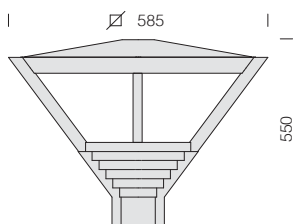
4000K

Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.

1583 Vista					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1400mA)	colour	weight	code	W tot	K - ølm 1400mA - CRI
LED COB	graphite	13.30	422212-00	53	4000K - 3700lm - CRI \geq 80
	grey 9007		422213-00		
LED COB AMBER	graphite	13.30	422212-73	57	2200K - 3415lm - AMBER
	grey 9007		422213-73		

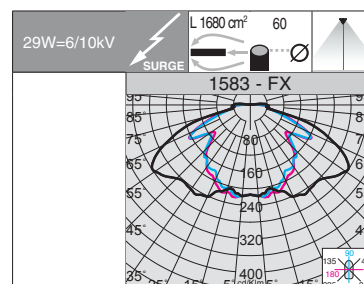
1583 Vista - anti-light pollution					
		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1400mA)	colour	weight	code	W tot	K - ølm 1400mA - CRI
LED COB	graphite	12.50	422212-0016	53	4000K - 3441lm - CRI \geq 80
	grey 9007		422213-0016		

IP65IK09



Optics: made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B10).

RG0
E_h+40
C
-20

U.V.

ZONA
1LOW
FLICKER

3000K

4000K

1583 Vista - FX					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	12.00	422304-00	29	4000K - 3691lm - CRI 70
			422304-39		3000K - 3432lm - CRI 70

Integrated **ADVANCED PROG** functions (see page XVI-XX).



GENERAL CHARACTERISTICS

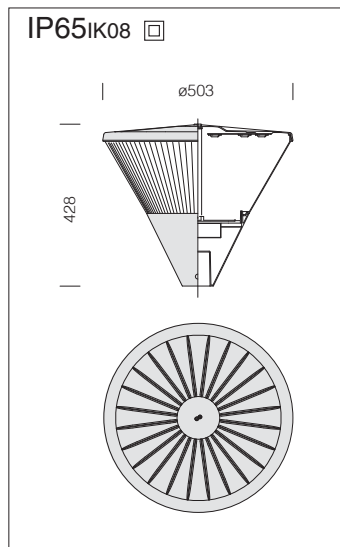
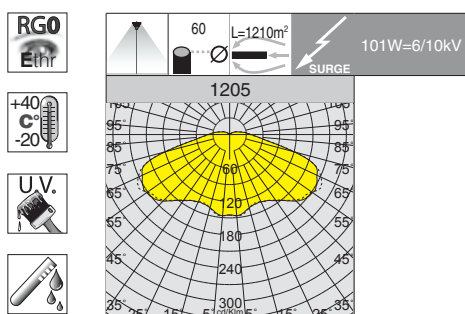
Housing: made of die-cast aluminium.

Cover: art. 1205 made of turned aluminium; art. 1570 made of die-cast aluminium; art. 1517/1518 made of aluminium plate.

Diffuser: in vandal-resistant V2 self-extinguishing polycarbonate, UV-stabilized.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Equipment: Automatic temperature control inside the device with automatic resetting. Complete with quick-connector for connection to the line.

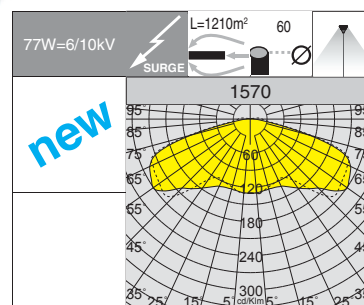
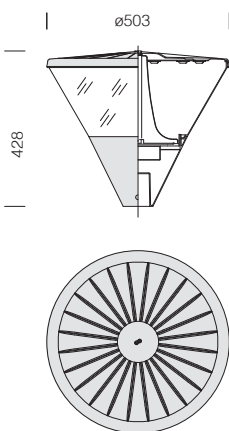


1205 Polar					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey 9007	5.90	422140-00	101	4000K - 8656lm - CRI>70
	graphite		422141-00		
Upon request: possibility to choose different lighting point management systems (see page XVI-XX).					

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Example	Power supply	W tot	ølm
upon request	350mA	49	4328lm

IP65IK08 □



Upon request		W tot	ølm
Power supply	-	101	11078lm
700mA	-0016	101	10524lm

RG0
E_{thr}+40
°C
-20

U.V.

LOW
FLICKERZONA
1ZONA
2LOW
FLICKER

3000K

4000K

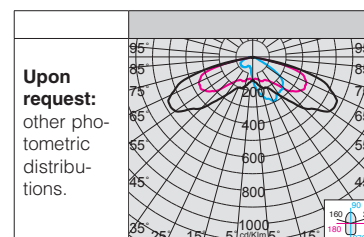
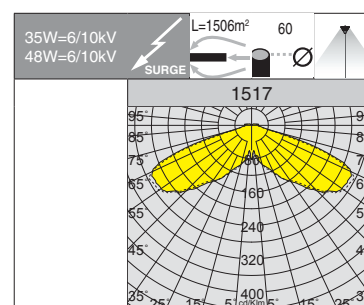
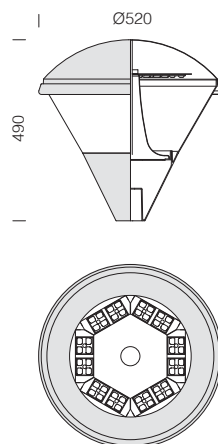
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

13W version is recommended for
poles up to 2 metres tall.

1570 Clima					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	grey 9007	5.90	422403-00	13	4000K - 1903lm - CRI 70
	graphite		422404-00		
LED	grey 9007	5.90	422403-39	13	3000K - 1770lm - CRI 70
	graphite		422404-39		
LED	grey 9007	5.90	422400-56	49	4000K - 5539lm - CRI>70
	graphite		422401-56		
wattage (530mA)					K - ølm 530mA - CRI
LED	grey 9007	5.90	422400-00	77	4000K - 8387lm - CRI>70
	graphite		422401-00		
LED	grey 9007	5.90	422400-0016	77	4000K - 7968lm - CRI>70
	graphite		422401-0016		
Upon request: possibility to choose different lighting point management systems (see page XVI-XX).					

Upon request: possibility to choose different lighting point management systems (see page XVI-XX).

IP65IK08 □



Upon request:
other photometric
distributions.

RG0
E_{thr}+40
°C
-20

U.V.

LOW
FLICKERZONA
1ZONA
2LOW
FLICKER

3000K

4000K

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

1517 Clima					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	5.90	422372-00	35	4000K - 4392lm - CRI>70
	graphite		422373-00		
LED	grey 9007	5.90	422372-39	35	3000K - 4084lm - CRI>70
	graphite		422373-39		
LED	grey 9007	5.90	422370-00	48	4000K - 5551lm - CRI>70
	graphite		422371-00		
LED	grey 9007	5.90	422370-39	48	3000K - 5162lm - CRI>70
	graphite		422371-39		

Upon request: possibility to choose different lighting point management systems (see page XVI-XX).

1518 Clima - anti-light pollution					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	5.90	422380-00	37	4000K - 3920lm - CRI>70
	graphite		422381-00		

Upon request: possibility to choose different lighting point management systems (see page XVI-XX).



GENERAL CHARACTERISTICS

Housing/cover: made of die-cast aluminium.

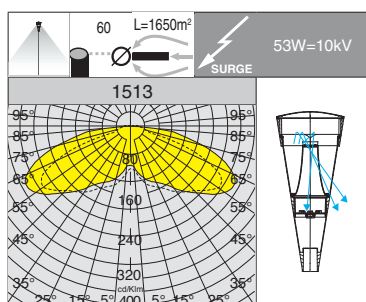
Diffuser: in transparent, vandal-resistant and V2 self-extinguishing polycarbonate, UV-stabilized.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

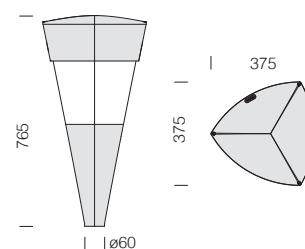


Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: Automatic temperature control inside the device with automatic resetting. Safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module. Complete with quick connection. Art. 1513 supplied with double insulation switch.



IP66IK08



Reflector art. 1513: made of specular aluminium

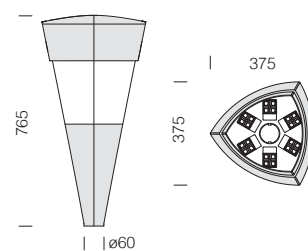
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
50.000h (L80B20).

1513 Torcia - COB

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1400mA)	colour	weight	code	W tot	K - ølm 1400mA - CRI
LED COB	grey 9007	7.40	423250-00	53	4000K - 5060lm - CRI \geq 80
	graphite		423251-00		
LED COB	grey 9007	7.40	423250-39	53	3000K - 4706lm - CRI \geq 80
	graphite		423251-39		

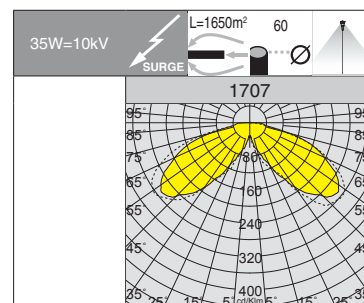
1513 Torcia - COB - anti-light pollution

		CLD		LUMEN OUTPUT (tq= 25 °C)	
wattage (1400mA)	colour	weight	code	W tot	K - ølm 1400mA - CRI
LED COB	grey 9007	7.40	423250-0016	53	4000K - 4048lm - CRI \geq 80
	graphite		423251-0016		

IP66IK08 

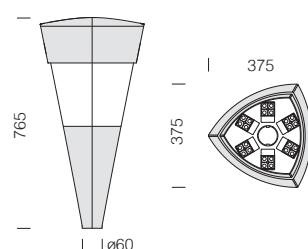
Optics: Optics made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).



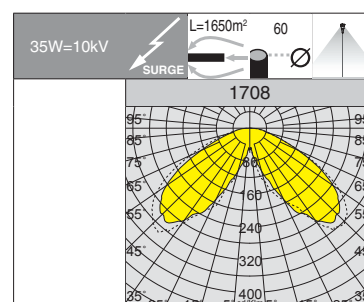
1707 Torcia					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (240mA)	colour	weight	code	W tot	K - ølm 240mA - CRI
LED	grey 9007	7.40	423252-00	35	4000K - 4600lm - CRI>70
	graphite		423253-00		
LED	grey 9007	7.40	423252-39	35	3000K - 4278lm - CRI>70
	graphite		423253-39		

Integrated **ADVANCED PROG** functions (see page XVI-XX).

IP66IK08 

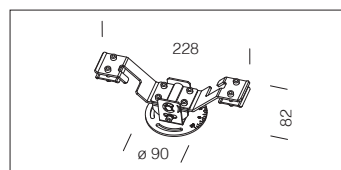
Optics: Optics made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).)



1708 Torcia					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (240mA)	colour	weight	code	W tot	K - ølm 240mA - CRI
LED	grey 9007	7.40	423255-00	35	4000K - 4200lm - CRI>70
	graphite		423256-00		

Integrated **ADVANCED PROG** functions (see page XVI-XX).



acc. 55 suspension connection

0.90 998098-00

In stainless steel AISI 304. For installation on ropes and steel cables.

GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium with cooling fins integrated into the cover and designed with a very small surface exposed to wind.

Diffuser: tempered glass, 4 mm thick, resistant to thermal shocks and impacts (UNI-EN 12150-1:2001).

Optics: made of PMMA with high temperature resistance and UV rays. Flow recovery in V0 polycarbonate, metallized high yield.

Coating: The standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module. Supplied with double insulation switch. Equipped with anti-condensation filter; complete with quick connection.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



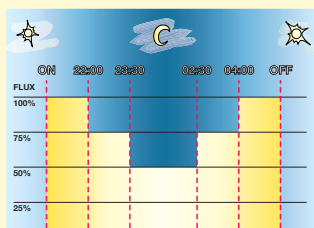
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



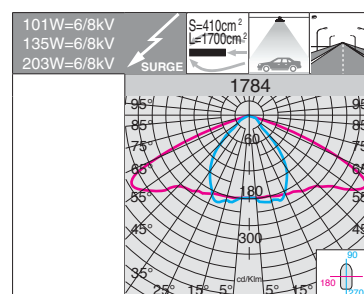
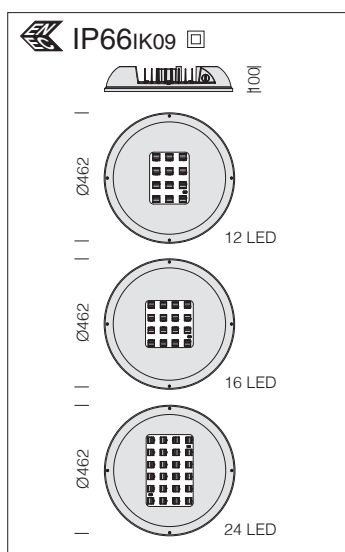
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



LED: Power factor ≥ 0.95 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

1784 Astro - with central connection

wattage (700mA)	colour	weight	CLD PROG	W tot	LUMEN OUTPUT (tq= 25 °C)
			code		K - ølm 700mA - CRI
LED	graphite	11.10	330066-00	101	4000K - 10407lm - CRI 70
	grey		330067-00		
LED	graphite	11.10	330065-00	135	4000K - 13876lm - CRI 70
	grey		330064-00		
LED	graphite	12.00	330062-00	203	4000K - 20818lm - CRI 70
	grey		330060-00		

Example	Power supply	n.LED	W tot	ølm
upon request	350mA	12	49	5203lm
		16	66	6938lm
		24	98	10409lm



GENERAL CHARACTERISTICS

Housing: die-cast aluminium.

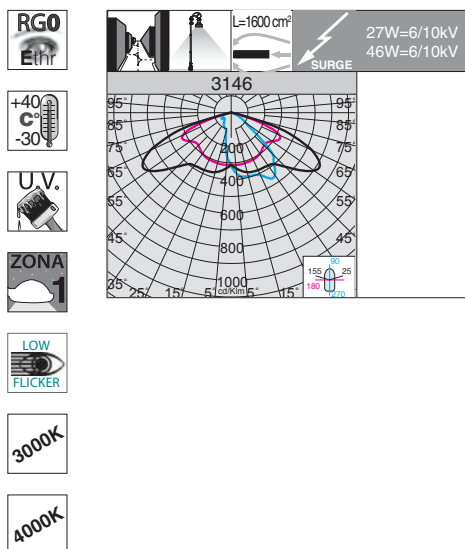
Diffuser: tempered glass, resistant to thermal shock and impacts.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating. Reflector, ceramic white.

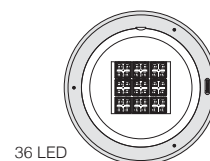
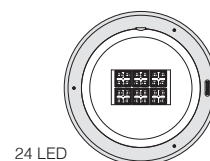
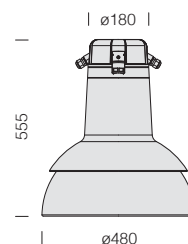


Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: these lighting fixtures also come with an automatic control temperature device, which protects the LEDs from peak current through a protection diode. Safety diode to protect against voltage peaks compliant with EN 61547. With dedicated electronic device to protect the LED module. Supplied with double insulation switch.



IP65 IK08



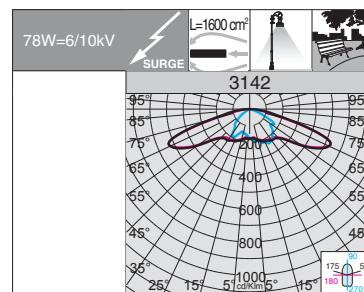
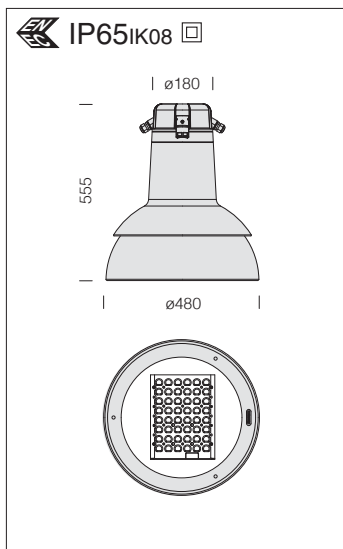
Optics: Optics made of PMMA with high temperature resistance and UV rays.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3146 Campana

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm - CRI
LED	graphite + white	7,20	326790-00	27	4000K - 3951lm - CRI>70
			326790-39		3000K - 3674lm - CRI>70
LED	graphite + white	7,20	326791-00	46	4000K - 6779lm - CRI>70
			326791-39		3000K - 6304lm - CRI>70

Integrated **ADVANCED PROG** functions (see page XVI-XX).

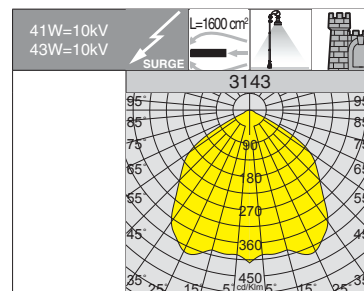
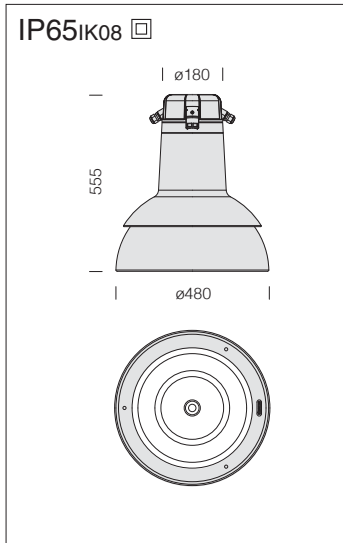


Optics: in high-efficiency, metal-coated V0 polycarbonate, matt finish and micro-faceted to reduce direct glare.

LED: Power factor ≥ 0.9 .

Luminous flux maintenance 80%: 80.000h (L80B20).

3142 Campana					
CLD PROG			LUMEN OUTPUT (tq= 25 °C)		
wattage 530mA	colour	weight	code	W tot	K - 530mA - CRI
LED	graphite + white	8,30	326785-00	78	4000K - 8512lm - CRI>70
Integrated ADVANCED PROG functions (see page XVI-XX).					



Note: when ordering, make sure you select the **AMBER LED** type best suited for your lighting design and installation needs.



Reflector: made of 3μ thick 99.85 anodised and polished hammered aluminium.

LED: Power factor ≥ 0.9 .

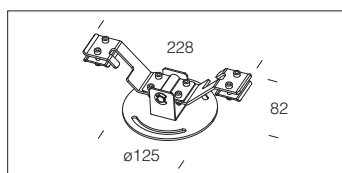
Luminous flux maintenance 80%: 50.000h (L80B20).

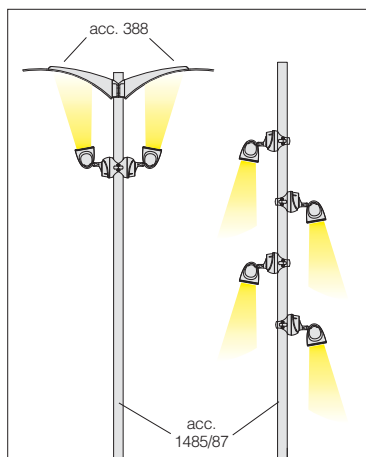
3143 Campana - COB					
CLD			LUMEN OUTPUT (tq= 25 °C)		
wattage (1050mA)	colour	weight	code	W tot	K - 1050mA - CRI
LED COB	graphite + white	8,30	326786-00	41	4000K - 3732lm - CRI 90
LED COB AMBER			326786-73	43	2200K - 4273lm - AMBER

acc. 56 suspension connection

0.70 995727-00

Made of stainless steel AISI 304. For installation on rope and steel cables.

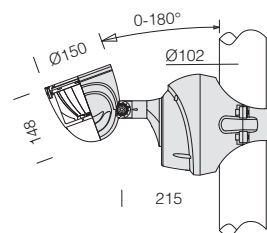




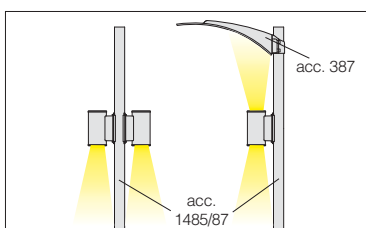
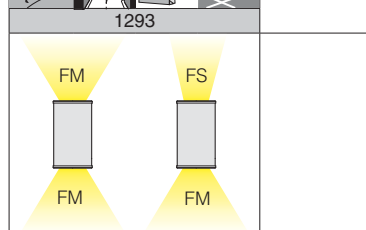
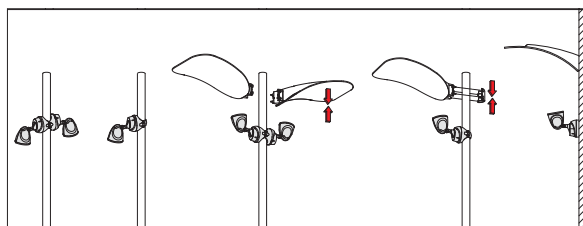
CRI 90



IP65IK08

**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** tempered glass, 4 mm thick, shock and heat resistant**Standard supply:** safety diode to protect against voltage peaks (EN 61547)**LED:** Power factor ≥ 0.9 .
Luminous flux maintenance 80%: 50.000h (L80B20).**1561 Elfo**

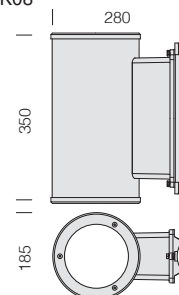
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI - degrees
LED COB	grey 9007	2.60	422398-00	41	4000K - 3531lm - CRI 90 - 15°



CRI 90

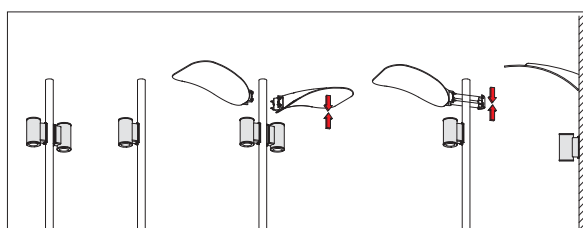


IP65IK08

**GENERAL CHARACTERISTICS****Housing:** die-cast aluminium.**Diffuser:** tempered glass, 4 mm thick, shock and heat resistant**Standard supply:** safety diode to protect against voltage peaks (EN 61547)**LED:** Power factor ≥ 0.9 .
Luminous flux maintenance 80%: 50.000h (L80B20).**1293 Cilindro 4**

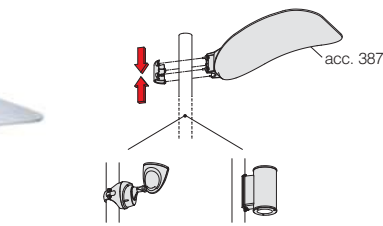
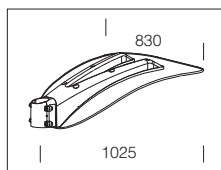
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED COB	grey 9007	6.90	420410-00	42	4000K - 2663lm - FM+FM - CRI 90
			420427-00		4000K - 1897lm - FS+FM - CRI 90

Standard version includes double switching.

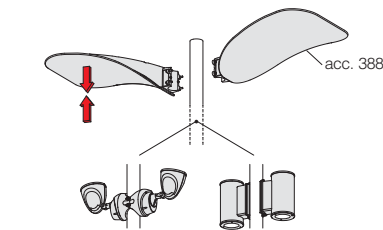
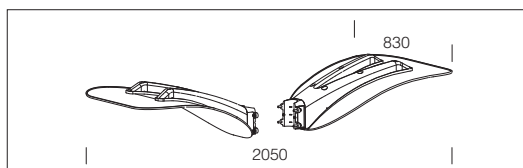


Housing Pegaso: 6 mm. thick fibreglass reinforced polyester

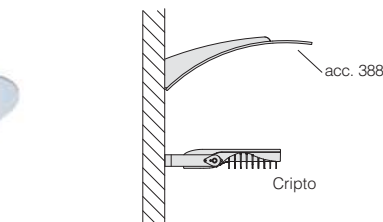
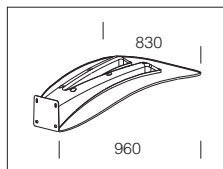
acc. 387 Pegaso single	
grey	991391-00
Indirect light plate to be mounted directly on the pole - access.1485/1487.	



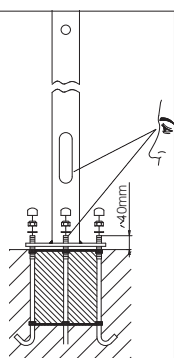
acc. 388 Pegaso double	
grey	991392-00
Indirect light plate to be mounted directly on the pole - access.1485/1487.	



acc. 389 Pegaso wall mount.	
grey	991393-00
Indirect light plate to be mounted directly on the wall.	



For correct installation of pole and base, the plastic cap should be fitted as shown in the assembly drawing featured opposite.

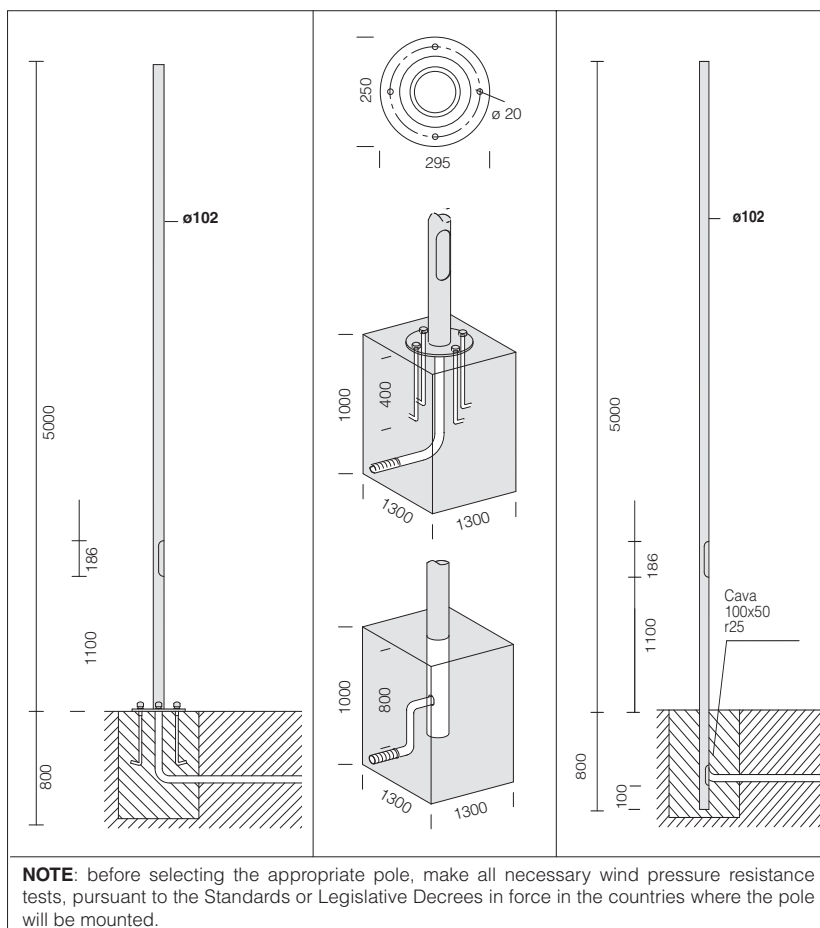
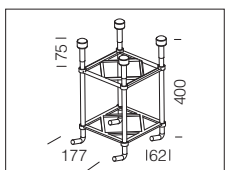


Pole designed for Pegaso: ø 102 silver colour steel. Complete with inspection window with removable terminal block. Single or double polyester plate to create indirect lighting effects. To be used mounted directly on the pole together with the fittings of the various products to install Pegaso on the poles - access. 1485/1487.

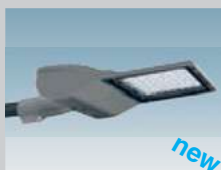
acc. 1485 pole with base		
5000	grey	425070-00

acc. 1487 pole to be buried in the ground		
5000+800	grey	425060-00

acc. 299 log bolts
991396-00
Log bolts are to be always used with the pole 1485.





MINI GIOVI HP

MINI GIOVI


Mini Giovi p. 370

GIOVI - HP

GIOVI


Giovi p. 382

SELLA 1 - HP

SELLA 1


Sella 1 p. 392

SELLA 2 - HP

SELLA 2


Sella 2 p. 398

MINI STELVIO - HP

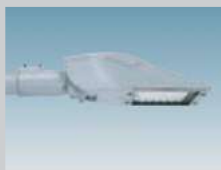
MINI STELVIO


Mini Stelvio p. 404

STELVIO - HP

STELVIO


Stelvio p. 412

ROLLE - HP

ROLLE


Rolle p. 418

SUSA ME

SUSA T2-T3


Susa p. 426

VISCONTI 2.0

MONZA


Visconti 2.0 p. 430

Monza p. 434



GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium, EN-AB 47100 alloy and designed with a very small surface exposed to wind. Cooling fins integrated in the cover. Once removed, the cover allows accessing the electric gear compartment and power terminal board.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.

Pole connection: in die-cast aluminium suited for poles with a diameter of min. 46 mm to max. 76 mm, adjustable from -20° to +10° for side-mount applications; and from 0° to +20° for top-mount applications. Tilting angle of 5°.

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001).

OTHER CHARACTERISTICS

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard supply: complete with insulation connector for quick installation.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.



The ENEC Plus mark certifies that the LED luminaires are compliant and reliable in terms of safety and declared performance.



The products of the Mini Giovi family are compliant with all applicable tests (third-party certification) pursuant to standard **ANSI C136.31: Street Lighting - Luminaire Vibration.**
- Test level: 3.0G Level 2 for bridge/overpass applications.

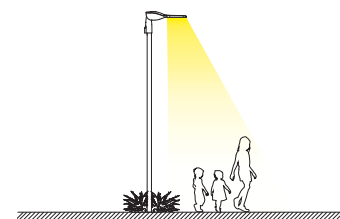
UPON REQUEST



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



CUT-OFF accessory (HP versions excluded): ideal for blocking backlight and eliminating potential intensity peak behind the light pole; available in either white or black shades (*NOTE: the black version will block backlight best, while the white version will enable greater efficiency.*)



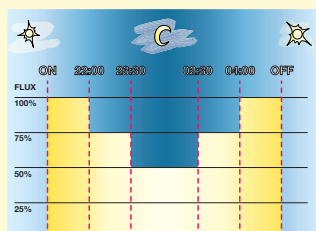
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

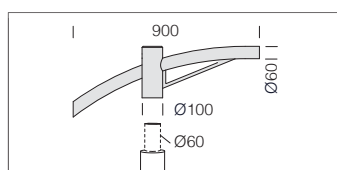
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

Example with Zhaga Socket (subcode -0054)

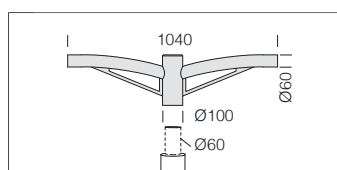


LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

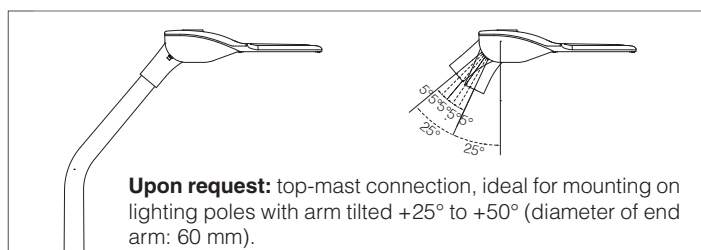
Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

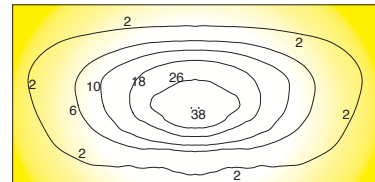
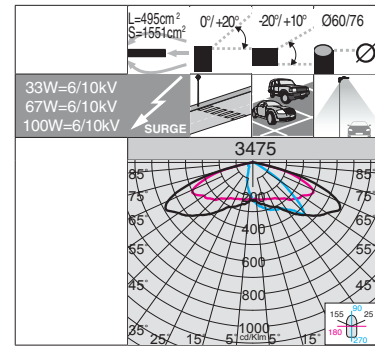
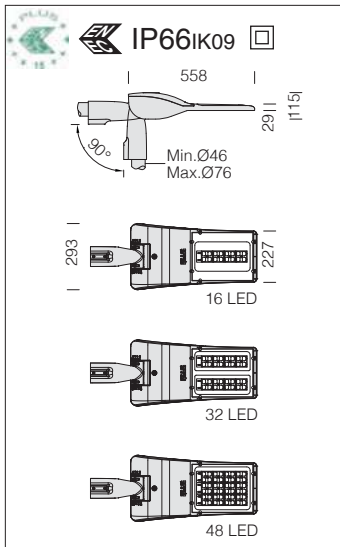


acc. 504 single arm	
graphite	991263-00
Suited for poles with a diameter 60mm.	



acc. 508 double arm	
graphite	991267-00
Suited for poles with a diameter 60mm.	





Optics: in PMMA, highly resistant to temperature and UV radiation.

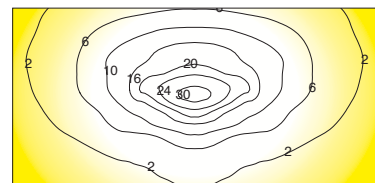
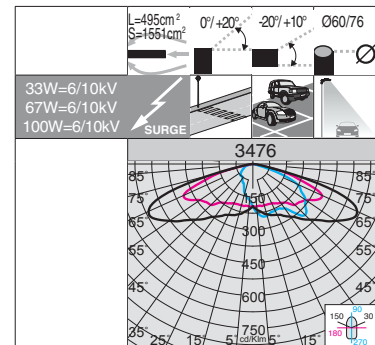
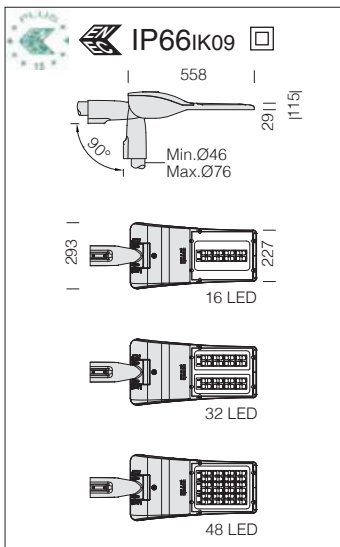
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3475 Mini Giovi W1 - residential amenities					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ϕ lm - CRI
LED	graphite	5.90	331000-00	33	4000K - 4468lm - CRI 70
			331000-39		3000K - 4244lm - CRI 70
LED	graphite	6.20	331001-00	67	4000K - 8937lm - CRI 70
			331001-39		3000K - 8490lm - CRI 70
LED	graphite	6.60	331002-00	100	4000K - 13406lm - CRI 70
			331002-39		3000K - 12735lm - CRI 70

Example	Power supply	n.LED	W tot	K	ϕ lm
upon request	350mA	16	16	4000K	2370lm
		32	33		4741lm
		48	50		7112lm
upon request	530mA	16	25	4000K	3529lm
		32	50		7059lm
		48	76		10589lm

n.LED	W tot	K	ϕ lm
16	16	3000K	2251lm
32	33		4504lm
48	50		6756lm
16	25	3000K	3352lm
32	50		6706lm
48	76		10059lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

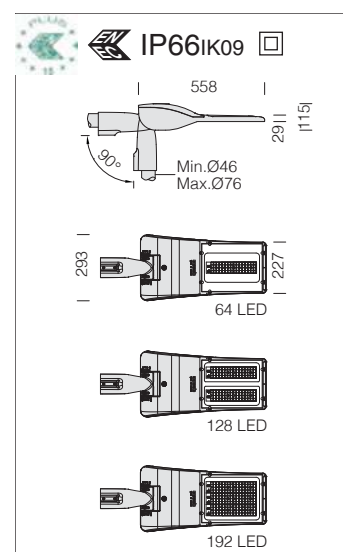
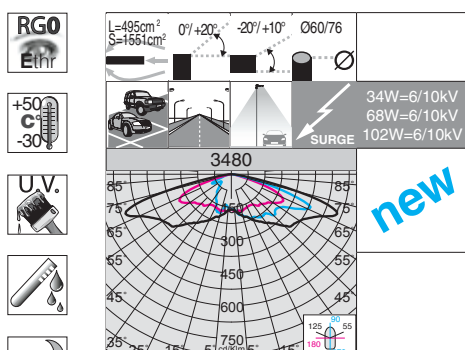
Integrated **ADVANCED PROG** functions (see table on p. 371).

3476 Mini Giovi W2 - residential amenities					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ϕ lm - CRI
LED	graphite	5.90	331010-00	33	4000K - 4542lm - CRI 70
			331010-39		3000K - 4314lm - CRI 70
LED	graphite	6.20	331011-00	67	4000K - 9085lm - CRI 70
			331011-39		3000K - 8630lm - CRI 70
LED	graphite	6.60	331012-00	100	4000K - 13630lm - CRI 70
			331012-39		3000K - 12950lm - CRI 70

Example	Power supply	n.LED	W tot	K	ϕ lm
upon request	350mA	16	16	4000K	2410lm
		32	33		4820lm
		48	50		7231lm
upon request	530mA	16	25	4000K	3588lm
		32	50		7176lm
		48	76		10766lm

n.LED	W tot	K	ϕ lm
16	16	3000K	2289lm
32	33		4578lm
48	50		6870lm
16	25	3000K	3408lm
32	50		6817lm
48	76		10229lm





3000K

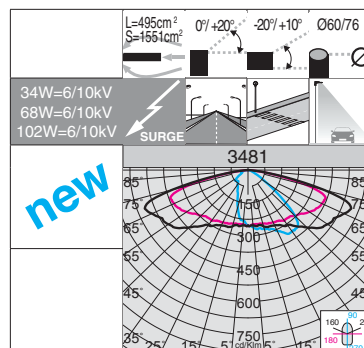
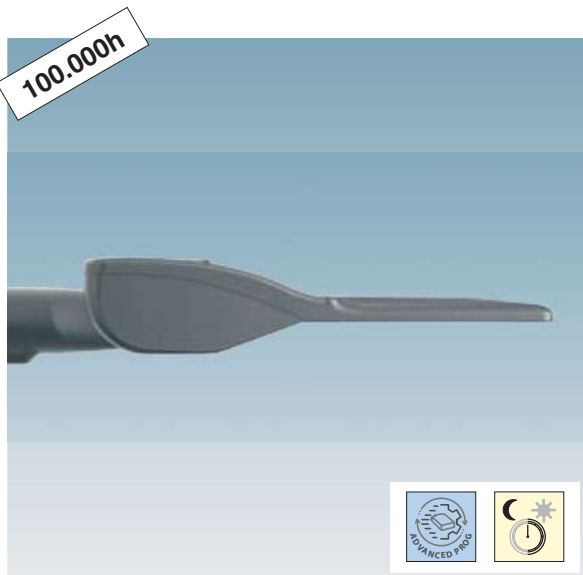
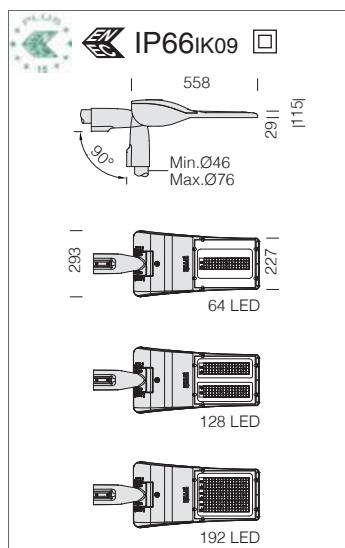
4000K

3480 Mini Giovi - high performance - large areas

wattage (700mA)	colour	weight	CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)	
			code			K - ølm 700mA - CRI	
LED	graphite	5.80	331050-00		34	4000K - 4916lm	- CRI 70
			331050-39			3000K - 4424lm	- CRI 70
LED	graphite	6.00	331051-00		68	4000K - 9732lm	- CRI 70
			331051-39			3000K - 8759lm	- CRI 70
LED	graphite	6.60	331052-00		102	4000K - 14758lm	- CRI 70
			331052-39			3000K - 13282lm	- CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 371).**Optics:** in PMMA, highly resistant to temperature and UV radiation.**LED:** Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2606lm	64	16	3000K	2346lm
		128	32		5160lm	128	32		4644lm
		192	49		7824lm	192	49		7042lm
upon request	530mA	64	25	4000K	3835lm	64	25	3000K	3452lm
		128	50		7592lm	128	50		6833lm
		192	75		11513lm	192	75		10362lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

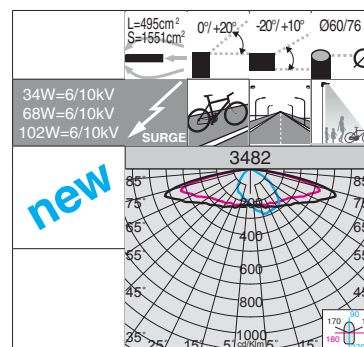
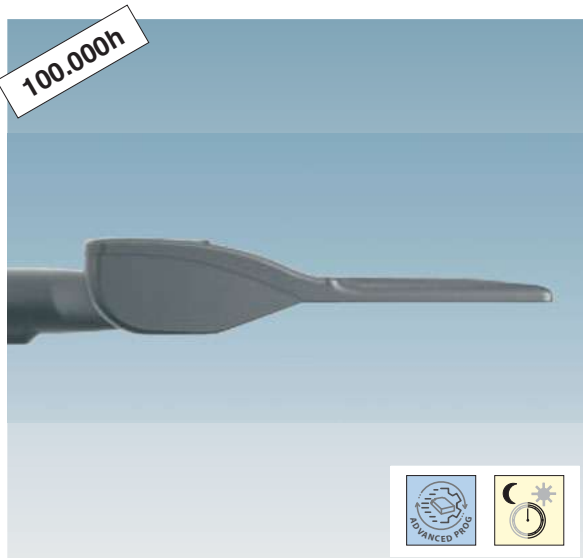
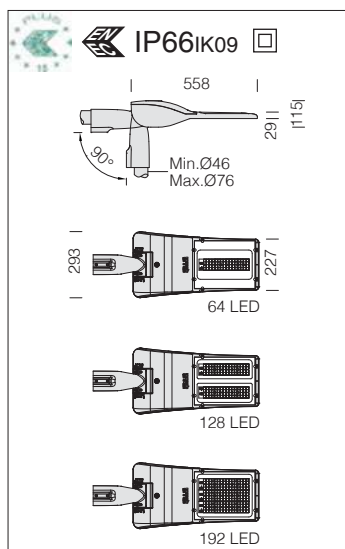
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3481 Mini Giovi - high performance - residential amenities ME					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	5.80	331060-00	34	4000K - 5099lm - CRI 70
			331060-39		3000K - 4589lm - CRI 70
LED	graphite	6.00	331061-00	68	4000K - 9926lm - CRI 70
			331061-39		3000K - 8933lm - CRI 70
LED	graphite	6.60	331062-00	102	4000K - 15246lm - CRI 70
			331062-39		3000K - 13721lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2703lm
		128	32		5263lm
		192	49		8083lm
upon request	530mA	64	25	4000K	3978lm
		128	50		7743lm
		192	75		11894lm

n.LED	W tot	K	ølm
64	16	3000K	2433lm
128	32		4736lm
192	49		7275lm
64	25	3000K	3580lm
128	50		6969lm
192	75		10704lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

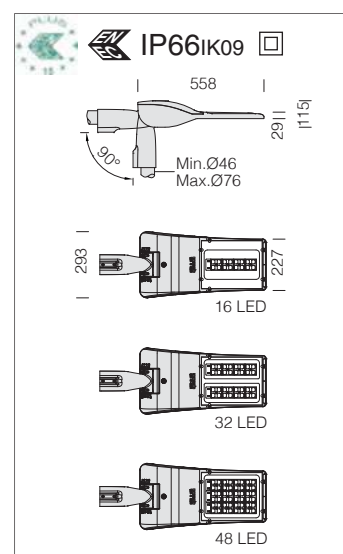
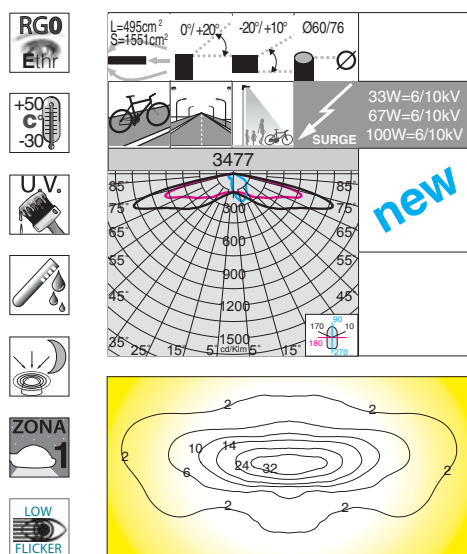
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3482 Mini Giovi - high performance - cycleways					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	5.80	331070-00	34	4000K - 4971lm - CRI 70
			331070-39		3000K - 4474lm - CRI 70
LED	graphite	6.00	331071-00	68	4000K - 9641lm - CRI 70
			331071-39		3000K - 8677lm - CRI 70
LED	graphite	6.60	331072-00	102	4000K - 14911lm - CRI 70
			331072-39		3000K - 13420lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2636lm
		128	32		5111lm
		192	49		7905lm
upon request	530mA	64	25	4000K	3878lm
		128	50		7521lm
		192	75		11632lm

n.LED	W tot	K	ølm
64	16	3000K	2372lm
128	32		4600lm
192	49		7115lm
64	25	3000K	3490lm
128	50		6769lm
192	75		10469lm



3000K

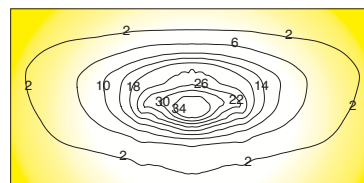
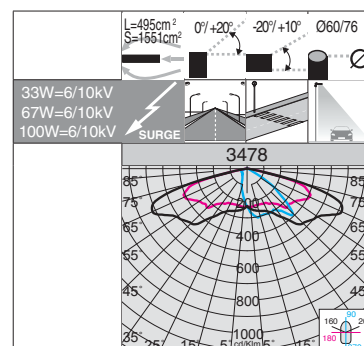
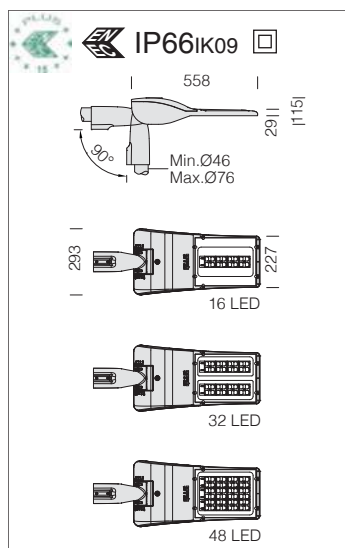
4000K

3477 Mini Giovi N1 - cycleways

		CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code		K - ølm 700mA - CRI	
LED	graphite	5.90	331020-00	33	4000K - 4340lm	- CRI 70
			331020-39		3000K - 4122lm	- CRI 70
LED	graphite	6.20	331021-00	67	4000K - 8300lm	- CRI 70
			331021-39		3000K - 7885lm	- CRI 70
LED	graphite	6.60	331022-00	100	4000K - 12840lm	- CRI 70
			331022-39		3000K - 12197lm	- CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 371).**Optics:** in PMMA, highly resistant to temperature and UV radiation.**LED:** Power factor ≥0.9.
Luminous flux maintenance 90%:
100.000h (L90B10).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	16	4000K	2316lm	16	16	3000K	2200lm
		32	33		4429lm	32	33		4207lm
		48	50		6851lm	48	50		6509lm
upon request	530mA	16	25	4000K	3385lm	16	25	3000K	3215lm
		32	50		6556lm	32	50		6228lm
		48	76		10015lm	48	76		9514lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

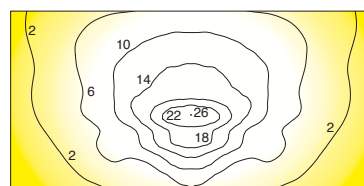
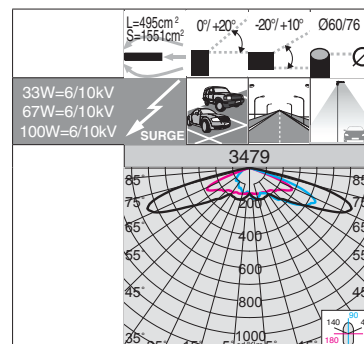
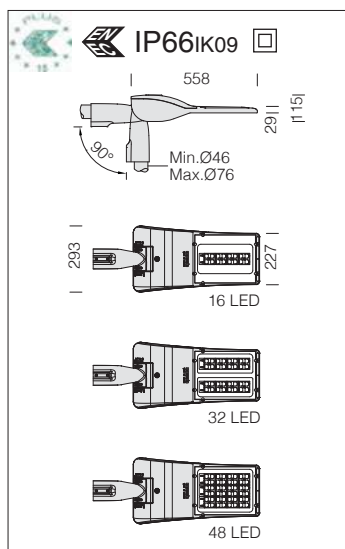
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3478 Mini Giovi M1 - residential amenities					
CLD PROG				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	5.90	331030-00	33	4000K - 4613lm - CRI 70
			331030-39		3000K - 4382lm - CRI 70
LED	graphite	6.20	331031-00	67	4000K - 9150lm - CRI 70
			331031-39		3000K - 8692lm - CRI 70
LED	graphite	6.60	331032-00	100	4000K - 13839lm - CRI 70
			331032-39		3000K - 12735lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	16	16	4000K	2447lm
		32	33		4854lm
		48	50		7342lm
upon request	530mA	16	25	4000K	3644lm
		32	50		7228lm
		48	76		10931lm

n.LED	W tot	K	ølm
16	16	3000K	2325lm
32	33		4611lm
48	50		6756lm
16	25	3000K	3461lm
32	50		6866lm
48	76		10059lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

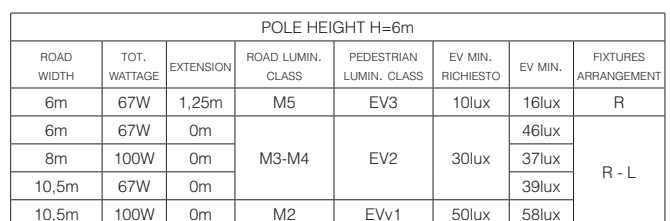
Integrated **ADVANCED PROG** functions (see table on p. 371).

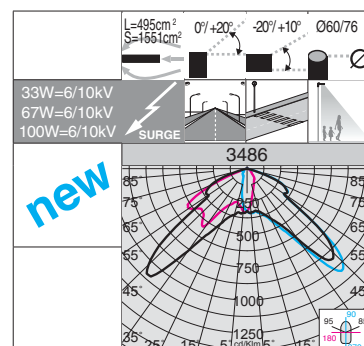
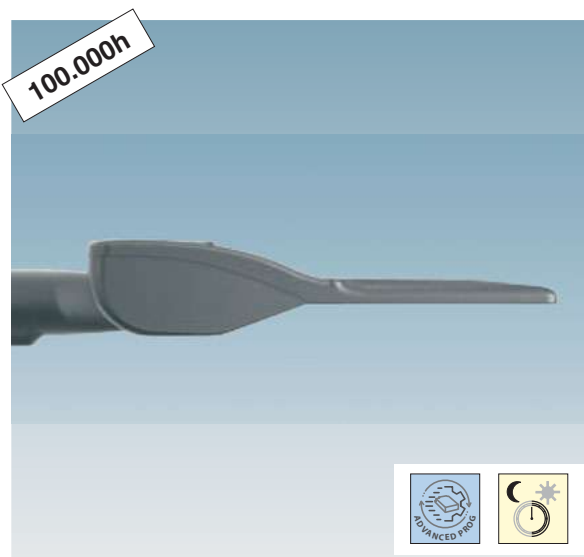
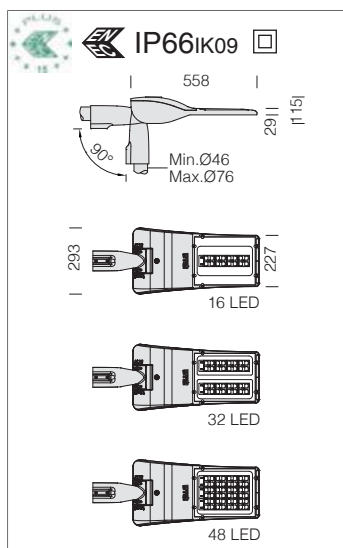
3479 Mini Giovi T4 - large areas					
CLD PROG				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	5.90	331040-00	33	4000K - 4571lm - CRI 70
			331040-39		3000K - 4342lm - CRI 70
LED	graphite	6.20	331041-00	67	4000K - 9141lm - CRI 70
			331041-39		3000K - 8684lm - CRI 70
LED	graphite	6.60	331042-00	100	4000K - 13712lm - CRI 70
			331042-39		3000K - 13027lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	16	16	4000K	2425lm
		32	33		4849lm
		48	50		7274lm
upon request	530mA	16	25	4000K	3611lm
		32	50		7220lm
		48	76		10831lm

n.LED	W tot	K	ølm
16	16	3000K	2303lm
32	33		4607lm
48	50		6911lm
16	25	3000K	3430lm
32	50		6859lm
48	76		10290lm







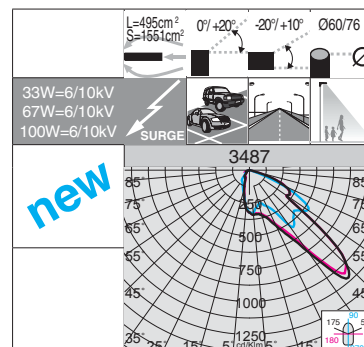
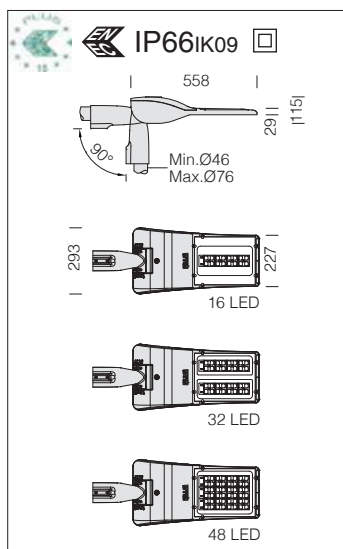
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3486 Mini Giovi left (L) - for pedestrian crossing					
wattage (700mA)	colour	weight	code	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	graphite	5.90	331080-00	33	4000K - 4641lm - CRI 70
			331080-39		3000K - 4409lm - CRI 70
LED	graphite	6.20	331081-00	67	4000K - 9281lm - CRI 70
			331081-39		3000K - 8817lm - CRI 70
LED	graphite	6.60	331082-00	100	4000K - 13922lm - CRI 70
			331082-39		3000K - 13226lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	16	4000K	2476lm	16	16	3000K	2352lm
		32	33		4953lm	32	33		4705lm
		48	50		7429lm	48	50		7057lm
upon request	530mA	16	25	4000K	3620lm	16	25	3000K	3439lm
		32	50		7239lm	32	50		6877lm
		48	76		10859lm	48	76		10316lm



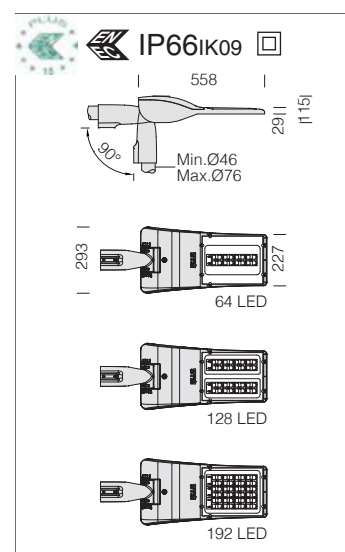
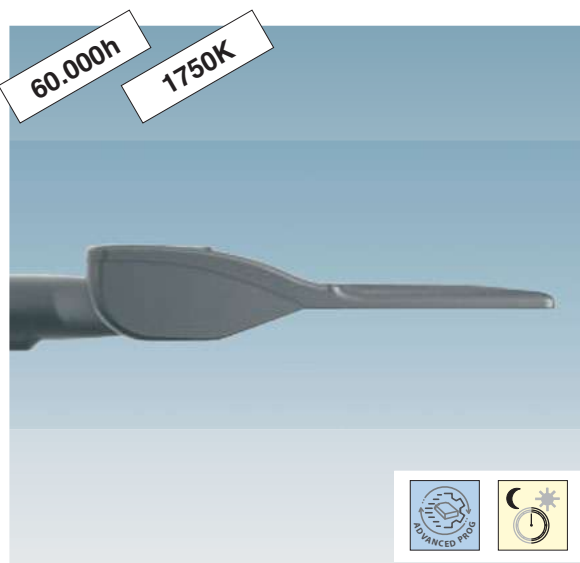
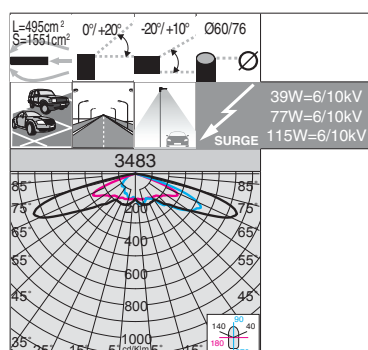
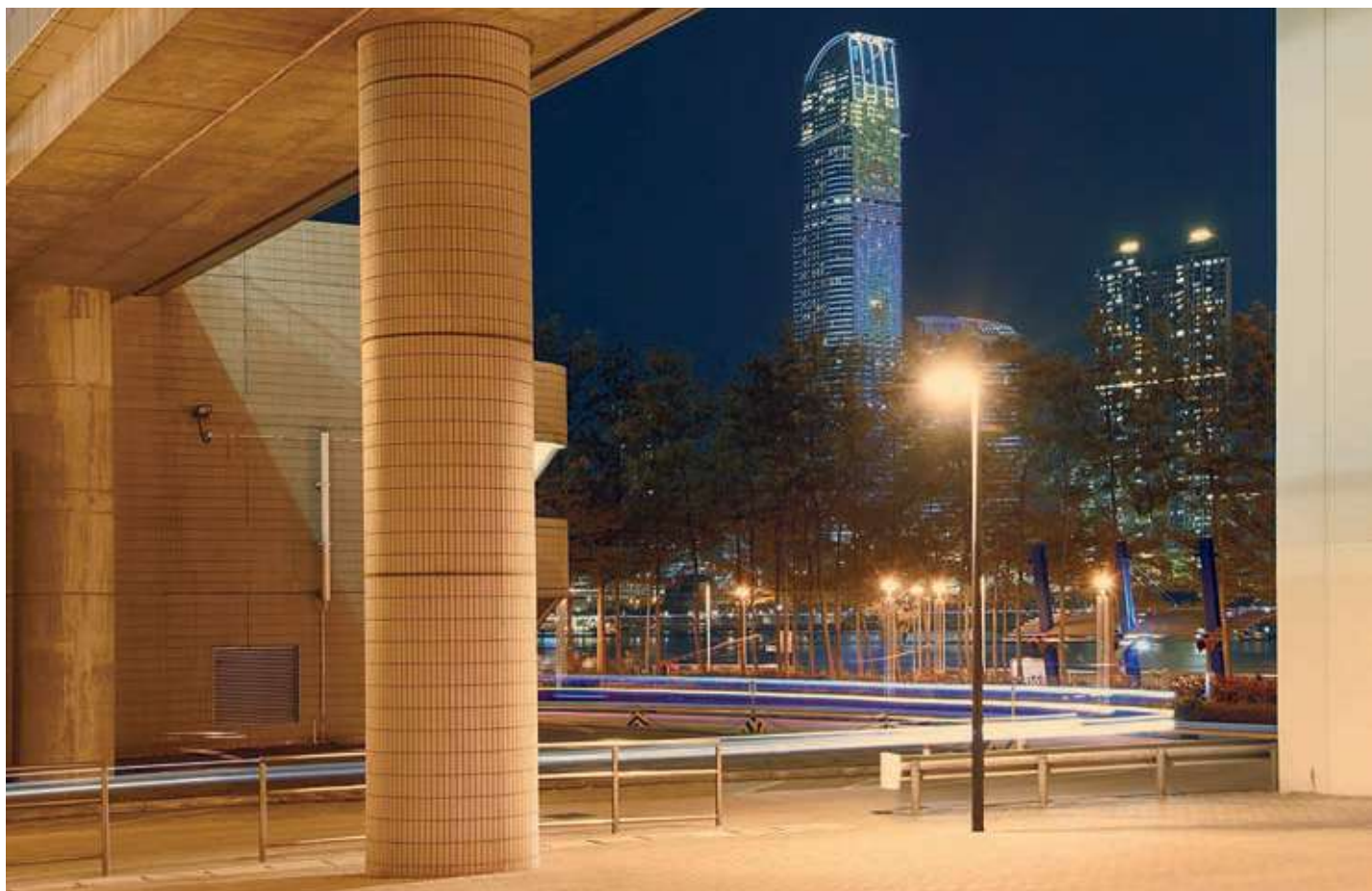
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 371).

3487 Mini Giovi right (R) - for pedestrian crossing					
wattage (700mA)	colour	weight	code	W tot	LUMEN OUTPUT (tq= 25 °C)
LED	graphite	5.90	331090-00	33	4000K - 4641lm - CRI 70
			331090-39		3000K - 4409lm - CRI 70
LED	graphite	6.20	331091-00	67	4000K - 9281lm - CRI 70
			331091-39		3000K - 8817lm - CRI 70
LED	graphite	6.60	331092-00	100	4000K - 13922lm - CRI 70
			331092-39		3000K - 13226lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	16	4000K	2476lm	16	16	3000K	2352lm
		32	33		4953lm	32	33		4705lm
		48	50		7429lm	48	50		7057lm
upon request	530mA	16	25	4000K	3620lm	16	25	3000K	3439lm
		32	50		7239lm	32	50		6877lm
		48	76		10859lm	48	76		10316lm



3483 Mini Giovi AMBER - large areas

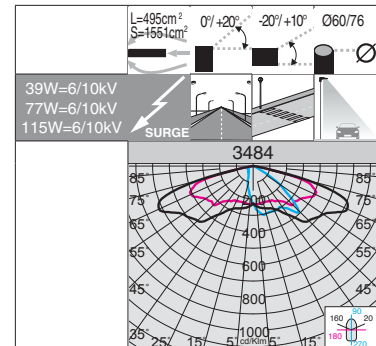
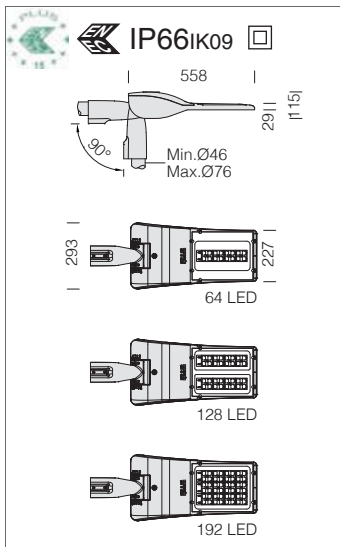
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (200mA)	colour	weight	code	W tot	K - ølm 200mA - CRI
LED	graphite	5.90	331050-44	39	1750K - 3641lm - AMBER
		6.20	331051-44	77	1750K - 6896lm - AMBER
		6.60	331052-44	115	1750K - 10422lm - AMBER

Integrated **ADVANCED PROG** functions (see table on p. 371).

1750K: lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.

Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
60.000h (L80B10).

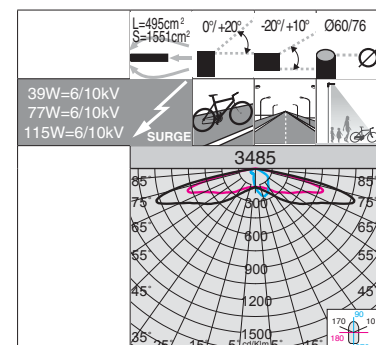
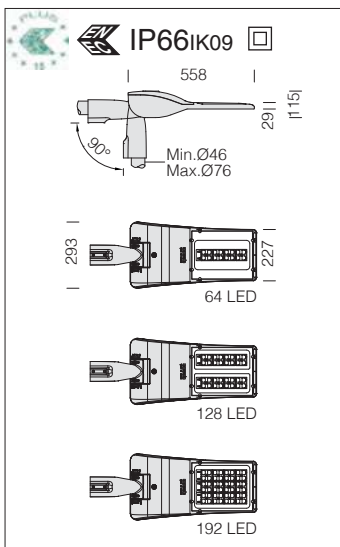


Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
60.000h (L80B10).

3484 Mini Giovi AMBER - residential amenities ME					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (200mA)	colour	weight	code	W tot	K - ølm 200mA - CRI
LED	graphite	5.90	331060-44	39	1750K - 3825lm - AMBER
		6.20	331061-44	77	1750K - 7244lm - AMBER
		6.60	331062-44	115	1750K - 10948lm - AMBER

Integrated **ADVANCED PROG** functions (see table on p. 371).
1750K: lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
60.000h (L80B10).

3485 Mini Giovi AMBER - cycleways					
			CLD PROG	LUMEN OUTPUT (tq= 25 °C)	
wattage (200mA)	colour	weight	code	W tot	K - ølm 200mA - CRI
LED	graphite	5.90	331070-44	39	1750K - 3653lm - AMBER
		6.20	331071-44	77	1750K - 6920lm - AMBER
		6.60	331072-44	115	1750K - 10457lm - AMBER

Integrated **ADVANCED PROG** functions (see table on p. 371).
1750K: lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.



GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium, EN-AB 47100 alloy and designed with a very small surface exposed to wind. Cooling fins integrated in the cover. Once removed, the cover allows accessing the electric gear compartment and power terminal board.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.

Pole connection: in die-cast aluminium suited for poles with a diameter of min. 46 mm to max. 76 mm, adjustable from -20° to +10° for side-mount applications; and from 0° to +20° for top-mount applications. Tilting angle of 5°.

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001).

OTHER CHARACTERISTICS

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Standard supply: complete with insulation connector for quick installation.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.



The ENEC Plus mark certifies that the LED luminaires are compliant and reliable in terms of safety and declared performance.



The products of the Giovi family are compliant with all applicable tests (third-party certification) pursuant to standard **ANSI C136.31: Street Lighting - Luminaire Vibration.**

- Test level: 3.0G Level 2 for bridge/overpass applications.

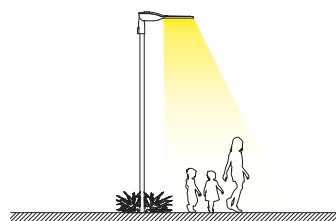
UPON REQUEST



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



CUT-OFF accessory (HP versions excluded): ideal for blocking backlight and eliminating potential intensity peak behind the light pole; available in either white or black shades (*NOTE: the black version will block backlight best, while the white version will enable greater efficiency.*)



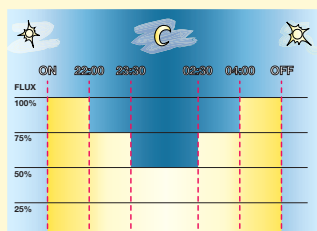
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

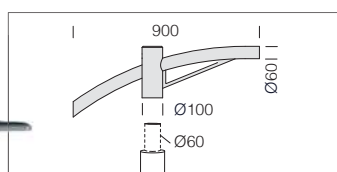
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

Example with Zhaga Socket (subcode -0054)

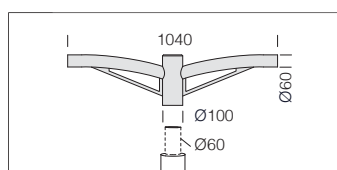


LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

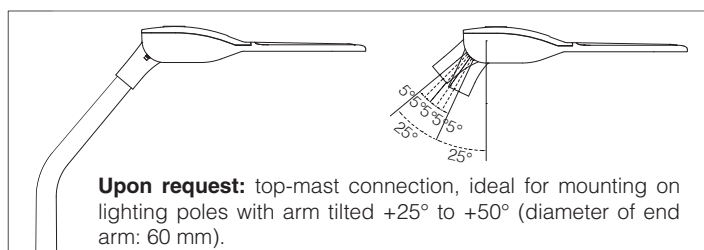
Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

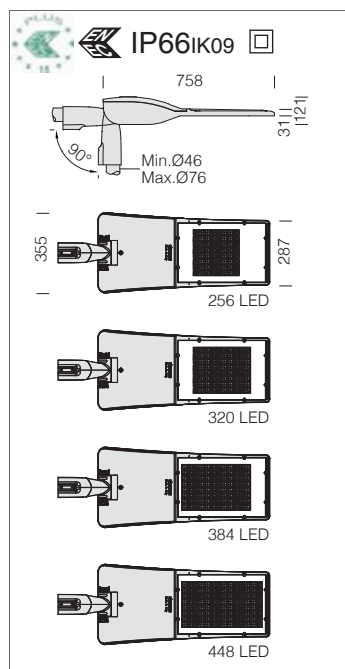
**acc. 504 single arm**

graphite	991263-00
Suited for poles with a diameter 60mm.	

**acc. 508 double arm**

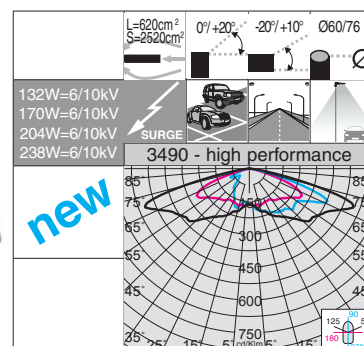
graphite	991267-00
Suited for poles with a diameter 60mm.	





Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

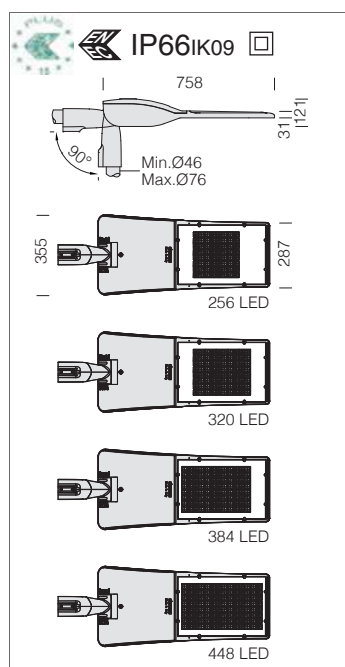


3490 Giovi - high performance - large areas					
wattage (700mA)	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)
			code	W tot	
LED	graphite	9.00	341040-00	132	K - ølm 700mA - CRI
			341040-39		4000K - 19080lm - CRI 70
LED	graphite	9.30	341041-00	170	3000K - 17172lm - CRI 70
			341041-39		4000K - 24627lm - CRI 70
LED	graphite	9.50	341042-00	204	3000K - 22164lm - CRI 70
			341042-39		4000K - 29348lm - CRI 70
LED	graphite	10.00	341043-00	238	3000K - 26413lm - CRI 70
			341043-39		4000K - 33856lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 383).

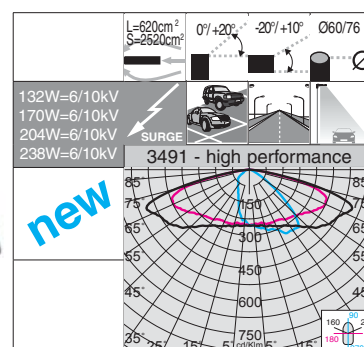
Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	256	65	4000K	10116lm
		320	82		13057lm
		384	99		15560lm
		448	116		17950lm

n.LED	W tot	K	ølm
256	65	3000K	9104lm
320	82		11751lm
384	99		14004lm
448	116		16155lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



3491 Giovi - high performance - residential amenities ME					
wattage (700mA)	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)
			code	W tot	
LED	graphite	9.00	341050-00	132	K - ølm 700mA - CRI
			341050-39		4000K - 19799lm - CRI 70
LED	graphite	9.30	341051-00	170	3000K - 17819lm - CRI 70
			341051-39		4000K - 25554lm - CRI 70
LED	graphite	9.50	341052-00	204	3000K - 22999lm - CRI 70
			341052-39		4000K - 30379lm - CRI 70
LED	graphite	10.00	341053-00	238	3000K - 27341lm - CRI 70
			341053-39		4000K - 35076lm - CRI 70

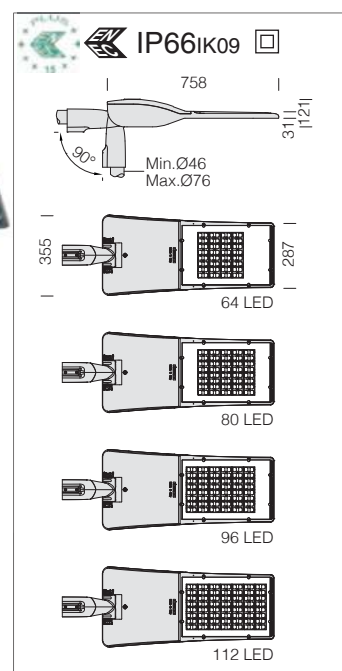
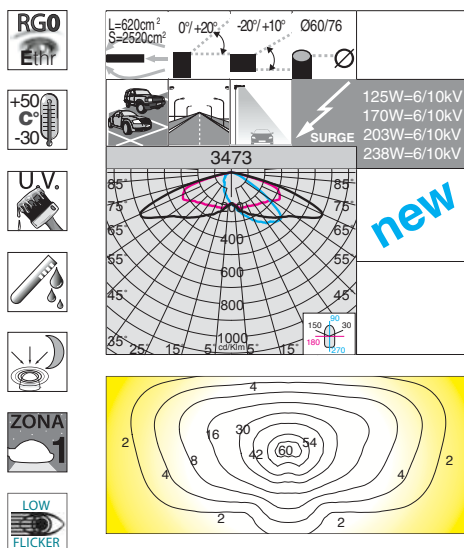
Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	256	65	4000K	10497lm
		320	82		13548lm
		384	99		16106lm
		448	116		18597lm

n.LED	W tot	K	ølm
256	65	3000K	9447lm
320	82		12193lm
384	99		14496lm
448	116		16737lm

Integrated **ADVANCED PROG** functions (see table on p. 383).

Example	Power supply	n.LED	W tot	K	ølm
upon request	530mA	256	99	4000K	15445lm
		320	125		19935lm
		384	151		23699lm
		448	177		27363lm

n.LED	W tot	K	ølm
256	99	3000K	13901lm
320	125		17942lm
384	151		21329lm
448	177		24627lm



3473 Giovi W1 - residential amenities

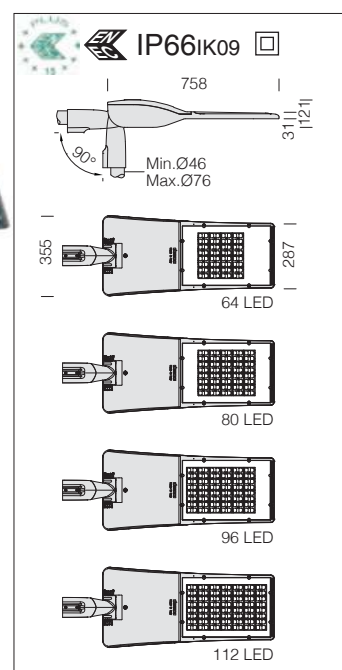
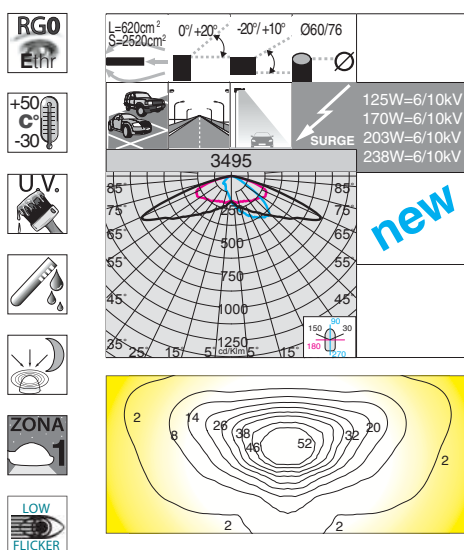
wattage (700mA)	colour	weight	CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)	
			code			K - ølm 700mA - CRI	
LED	graphite	9.00	341030-00		125	4000K - 18080lm	- CRI 70
			341030-39			3000K - 17176lm	- CRI 70
LED	graphite	9.30	341031-00		170	4000K - 23772lm	- CRI 70
			341031-39			3000K - 22568lm	- CRI 70
LED	graphite	9.50	341032-00		203	4000K - 28544lm	- CRI 70
			341032-39			3000K - 27118lm	- CRI 70
LED	graphite	10.00	341033-00		238	4000K - 32670lm	- CRI 70
			341033-39			3000K - 31035lm	- CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	64	66	4000K	10163lm	64	66	3000K	9654lm
		80	83		13362lm	80	83		12686lm
		96	100		16045lm	96	100		15243lm
		112	117		18364lm	112	117		17445lm

Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 383).



3495 Giovi W2 - residential amenities

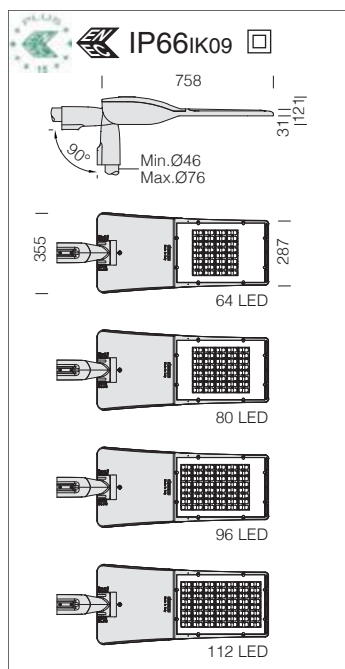
wattage (700mA)	colour	weight	CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)	
			code			K - ølm 700mA - CRI	
LED	graphite	9.00	341010-00		125	4000K - 17911lm	- CRI 70
			341010-39			3000K - 17014lm	- CRI 70
LED	graphite	9.30	341011-00		170	4000K - 23550lm	- CRI 70
			341011-39			3000K - 22372lm	- CRI 70
LED	graphite	9.50	341012-00		203	4000K - 28455lm	- CRI 70
			341012-39			3000K - 27032lm	- CRI 70
LED	graphite	10.00	341013-00		238	4000K - 32568lm	- CRI 70
			341013-39			3000K - 30940lm	- CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	64	66	4000K	10068lm	64	66	3000K	9564lm
		80	83		13237lm	80	83		12575lm
		96	100		15995lm	96	100		15194lm
		112	117		18306lm	112	117		17391lm
upon request	530mA	64	100	4000K	14363lm	64	100	3000K	13644lm
		80	125		18885lm	80	125		17940lm
		96	150		22818lm	96	150		21677lm
		112	175		26116lm	112	175		24810lm

Optics: in PMMA, highly resistant to temperature and UV radiation.

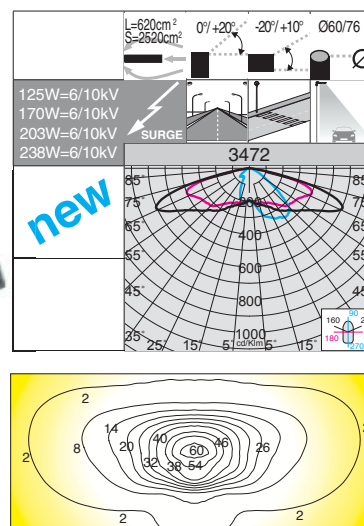
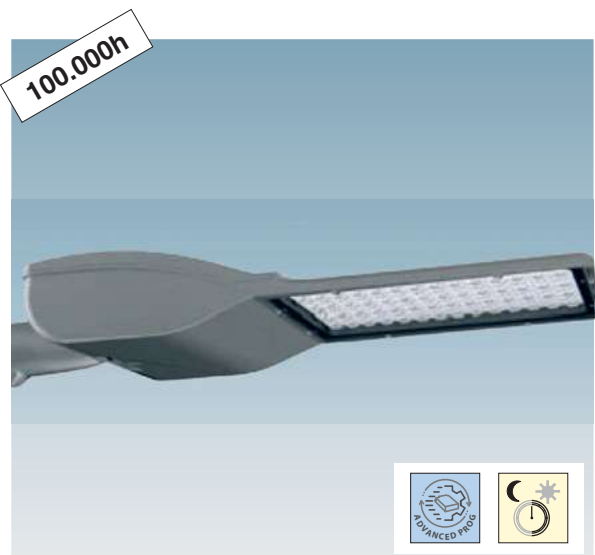
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

Integrated **ADVANCED PROG** functions (see table on p. 383).



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

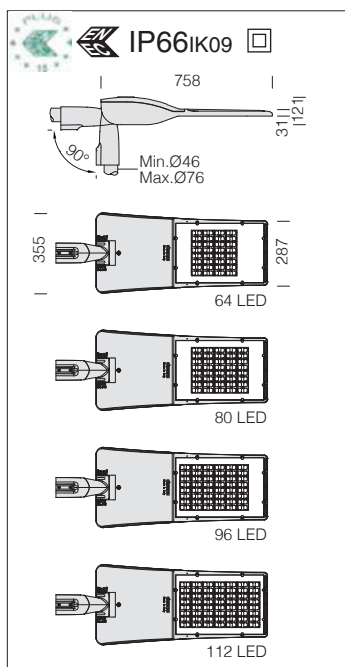


3472 Giovi M1 - residential amenities					
wattage (700mA)	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)
			code	W tot	
LED	graphite	9.00	341020-00	125	K - ølm 700mA - CRI
			341020-39		4000K - 17742lm - CRI 70
LED	graphite	9.30	341021-00	170	3000K - 16860lm - CRI 70
			341021-39		4000K - 23329lm - CRI 70
LED	graphite	9.50	341022-00	203	3000K - 22130lm - CRI 70
			341022-39		4000K - 28090lm - CRI 70
LED	graphite	10.00	341023-00	238	3000K - 26669lm - CRI 70
			341023-39		4000K - 32150lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 383).

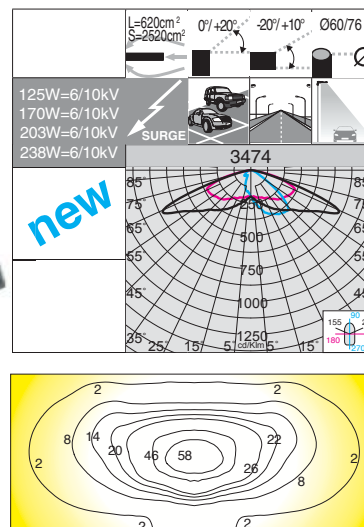
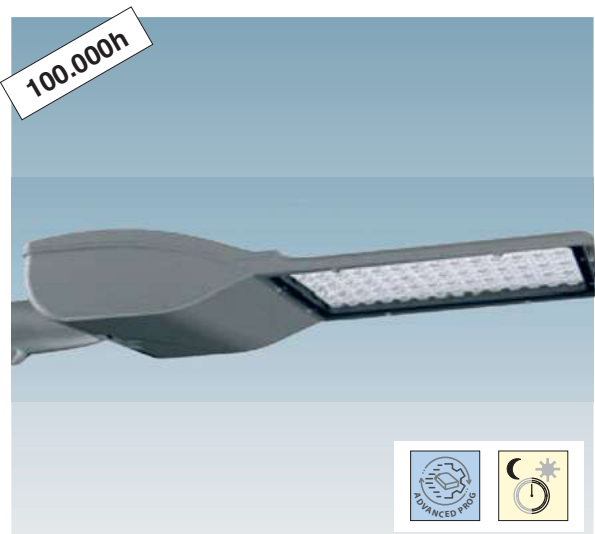
Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	66	4000K	9973lm
		80	83		13113lm
		96	100		15789lm
		112	117		18072lm

n.LED	W tot	K	ølm
64	66	3000K	9477lm
80	83		12439lm
96	100		14991lm
112	117		17165lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



3474 Giovi M2 - residential amenities					
wattage (700mA)	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)
			code	W tot	
LED	graphite	9.00	341110-00	125	K - ølm 700mA - CRI
			341110-39		4000K - 17834lm - CRI 70
LED	graphite	9.30	341111-00	170	3000K - 16942lm - CRI 70
			341111-39		4000K - 23450lm - CRI 70
LED	graphite	9.50	341112-00	203	3000K - 22162lm - CRI 70
			341112-39		4000K - 28265lm - CRI 70
LED	graphite	10.00	341113-00	238	3000K - 26851lm - CRI 70
			341113-39		4000K - 32350lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	66	4000K	10024lm
		80	83		13181lm
		96	100		15888lm
		112	117		18184lm

n.LED	W tot	K	ølm
64	66	3000K	9523lm
80	83		12522lm
96	100		15093lm
112	117		17269lm

Integrated **ADVANCED PROG** functions (see table on p. 383).

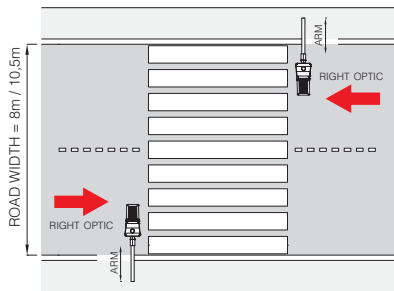
Example	Power supply	n.LED	W tot	K	ølm
upon request	530mA	64	100	4000K	14301lm
		80	125		18805lm
		96	150		22666lm
		112	175		25941lm

n.LED	W tot	K	ølm
64	100	3000K	13586lm
80	125		17864lm
96	150		21532lm
112	175		24637lm



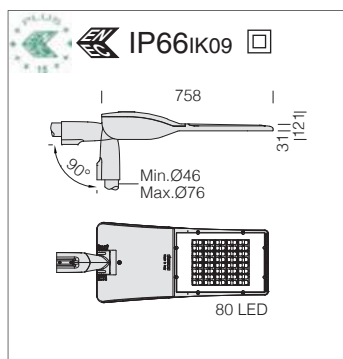


Examples of installation of Giovi at pedestrian crossings



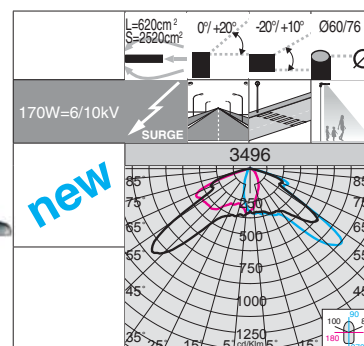
EXAMPLE OF INSTALLATION ON TWO-WAY ROADS

POLE HEIGHT H=6m							
ROAD WIDTH	TOT. WATTAGE	EXTENSION	ROAD LUMIN. CLASS	PEDESTRIAN LUMIN. CLASS	EV MIN. RICHIESTO	EV MIN.	FIXTURES ARRANGEMENT
8m	170W	0m	M3- M4	EV2	30lux	36lux	DX-DX
10,5m	170W	1,25m					



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

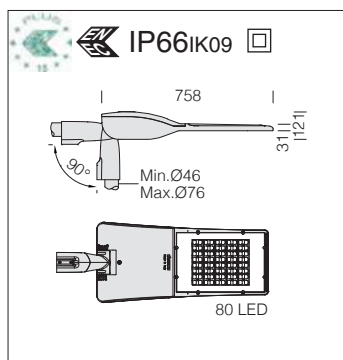


3496 Giovi - left (L) - for pedestrian crossing					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	9.30	341080-00	170	4000K - 23760lm - CRI 70
			341080-39		3000K - 22573lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 383).

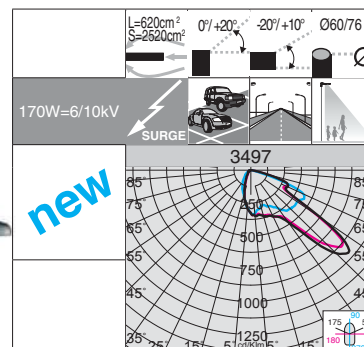
Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	80	83	4000K	13355lm
upon request	530mA	80	125	4000K	19053lm

n.LED	W tot	K	ølm
80	83	3000K	12688lm
80	125	3000K	18101lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

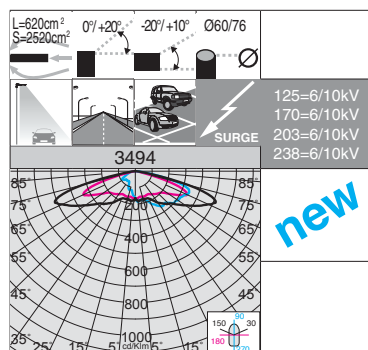


3497 Giovi - right (R) - for pedestrian crossing					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	9.30	341090-00	170	4000K - 23760lm - CRI 70
			341090-39		3000K - 22573lm - CRI 70

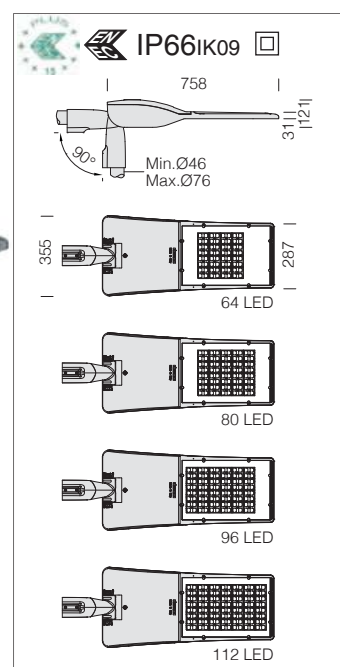
Integrated **ADVANCED PROG** functions (see table on p. 383).

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	80	83	4000K	13355lm
upon request	530mA	80	125	4000K	19053lm

n.LED	W tot	K	ølm
80	83	3000K	12688lm
80	125	3000K	18101lm



>100.000h



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

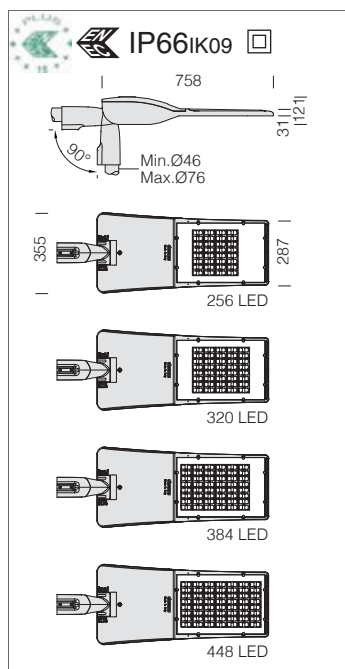
3494 Giovi T4 - asymmetric - large areas

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	9.00	341000-00	125	K - ølm 700mA - CRI
			341000-39		4000K - 16822lm - CRI 70
LED	graphite	9.30	341001-00	170	4000K - 22118lm - CRI 70
			341001-39		3000K - 21004lm - CRI 70
LED	graphite	9.50	341002-00	203	4000K - 27533lm - CRI 70
			341002-39		3000K - 26156lm - CRI 70
LED	graphite	10.00	341003-00	238	4000K - 31512lm - CRI 70
			341003-39		3000K - 29933lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	66	4000K	9456lm
		80	83		12433lm
		96	100		15476lm
		112	117		17713lm
upon request	530mA	64	100	4000K	13490lm
		80	125		17736lm
		96	150		22079lm
		112	175		25269lm

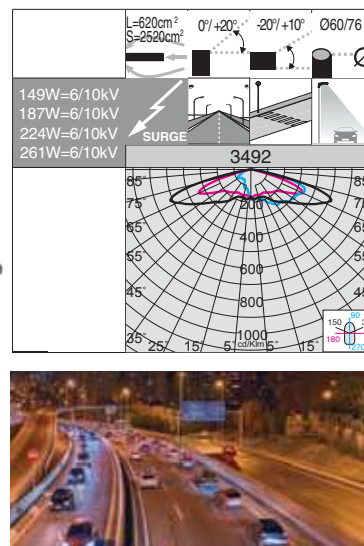
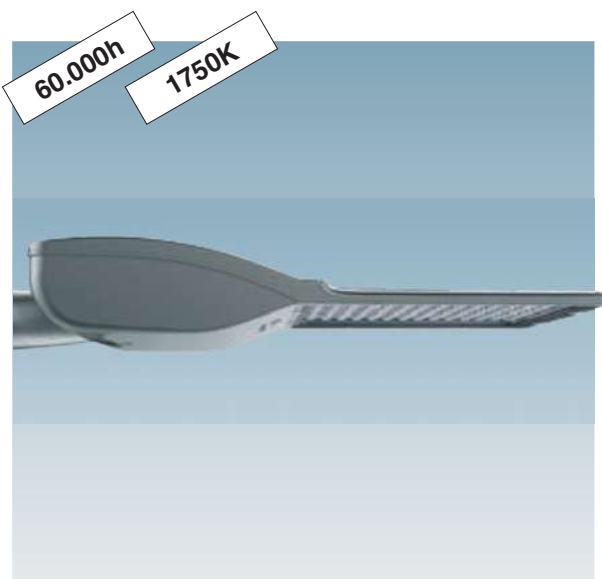
n.LED	W tot	K	ølm
64	66	3000K	8984lm
80	83		11806lm
96	100		14702lm
112	117		16825lm
64	100	3000K	12816lm
80	125		16843lm
96	150		20975lm
112	175		24003lm

Integrated **ADVANCED PROG functions** (see table on p. 383).



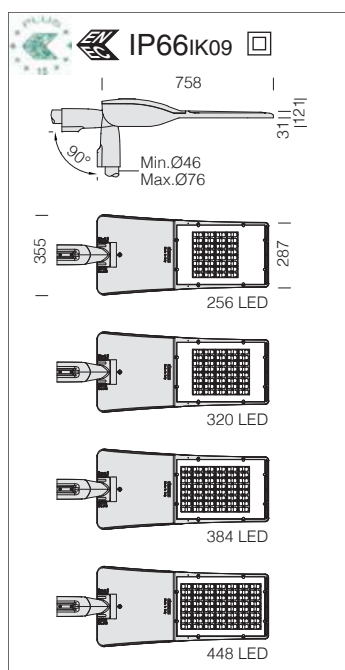
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
60.000h (L80B10).



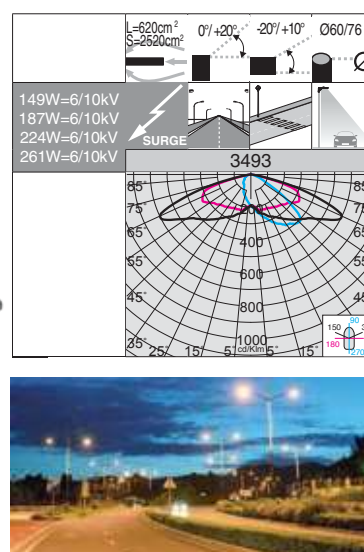
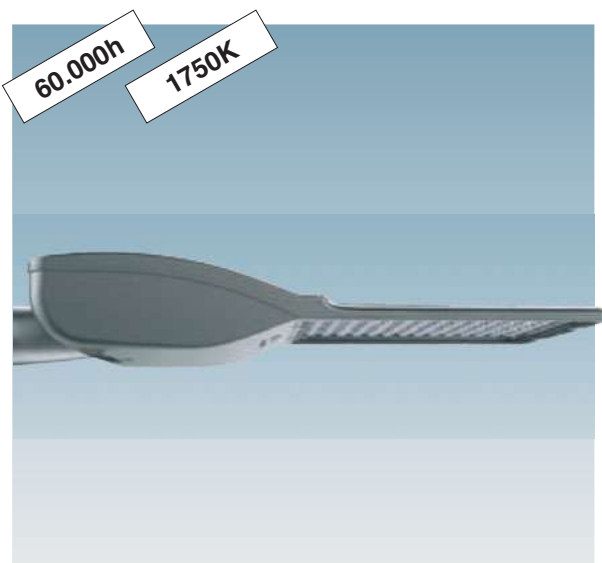
3492 Giovi AMBER T4 - large areas					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (200mA)	colour	weight	code	W tot	K - ølm 200mA - CRI
LED	graphite	9.00	341060-44	149	1750K - 14049lm - AMBER
		9.30	341061-44	187	1750K - 17321lm - AMBER
		9.50	341062-44	224	1750K - 20481lm - AMBER
		10.00	341063-44	261	1750K - 23870lm - AMBER

Integrated **ADVANCED PROG functions** (see table on p. 383).
1750K: lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
60.000h (L80B10).



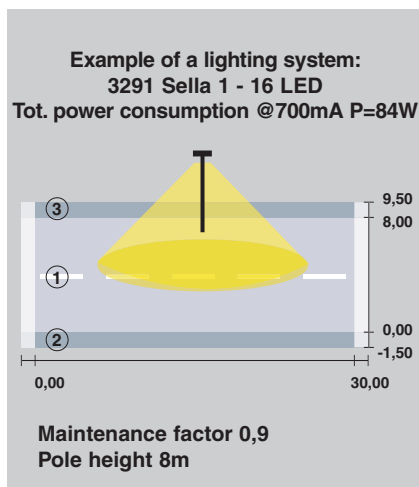
3493 Giovi AMBER - residential amenities ME					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (200mA)	colour	weight	code	W tot	K - ølm 200mA - CRI
LED	graphite	9.00	341070-44	149	1750K - 14414lm - AMBER
		9.30	341071-44	187	1750K - 17770lm - AMBER
		9.50	341072-44	224	1750K - 21011lm - AMBER
		10.00	341073-44	261	1750K - 24489lm - AMBER

Integrated **ADVANCED PROG functions** (see table on p. 383).
1750K: lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.





Advantages in installing new projects: using Sella LED lights instead of high-pressure sodium luminaires enables you to obtain the same lighting results, reducing power and consumptions by 40%-50% depending on the type of road. Compared to high pressure sodium, LED technology will significantly improve both the quality of the light (which is white and not yellow) and the colour rendering; moreover regular maintenance is no longer needed. Thanks to high performance LED optics (reflector + auxiliary lens), Sella LED fixtures can be used along roads and keeping the same distance between poles, like for high-pressure sodium lamps. In this way you can save energy without increasing the number of light fixtures.



Area of evaluation: roadW totaty ①		Lighting design results				
Length: 30m - Width 8m		L _m [cd/m ²]	U ₀	U _I	TI(%)	SR
Grid		1,28	0,44	0,70	10	0,52
Street elements		≥1,00	≥0,40	≥0,70	≤15	≥0,50
Road surface		Compliant / non-compliant	✓	✓	✓	✓
Selected lighting class						

Area of evaluation: pavement ②		Lighting design results	
Length: 30m - Width 1,5m		E _m [lx]	E _{min} [lx]
Grid		19,24	9,59
Street elements		≥15,00	≥5,00
Selected lighting class		Compliant / non-compliant	✓

Area of evaluation: pavement ③		Lighting design results	
Length: 30m - Width 1,5m		E _m [lx]	E _{min} [lx]
Grid		11,37	7,02
Street elements		≥10,00	≥3,00
Selected lighting class		Compliant / non-compliant	✓

Energy-saving: the possibility to choose the correct drive current for LEDs will allow you to have the right power under specific design conditions, and also help you deal with maintenance and retrofitting problems. Using a lower current will improve the efficiency of fixtures and therefore increase energy savings, whilst a higher current will result in a higher light flux so that you can reduce the number of fixtures.

Upon request	Power supply	n.LED	W tot	ølm
Sella 1 - art. 3290	350mA - 4000K	8	21	2714lm
		16	41	5440lm
		24	61	8092lm
Sella 1 - art. 3290	530mA - 4000K	8	32	3753lm
		16	64	7528lm
		24	97	11150lm
Sella 1 - art. 3290	350mA - 3000K	8	21	2524lm
		16	41	5059lm
		24	61	7528lm
Sella 1 - art. 3290	530mA - 3000K	8	32	3490lm
		16	64	7001lm
		24	97	10370lm

Upon request	Power supply	n.LED	W tot	ølm
Sella 1 - art. 3291	350mA - 4000K	8	21	2697lm
		16	41	5404lm
		24	61	8077lm
Sella 1 - art. 3291	530mA - 4000K	8	32	3732lm
		16	64	7476lm
		24	97	11128lm
Sella 1 - art. 3291	350mA - 3000K	8	21	2508lm
		16	41	5026m
		24	61	7511lm
Sella 1 - art. 3291	530mA - 3000K	8	32	3470m
		16	64	6953lm
		24	97	10350lm

GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Pole connection: in die-cast aluminium and with gaskets to secure the frame according to different inclinations. Adjustable ranges: between 0° and 20° for side mount; and between 0° and 20° for mast-top mounting. Inclination pace: 5°. Suited for poles with a diameter 42-76mm.

Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN12150-1: 2001).

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating. The SELLA luminaire is declared to have passed the 2000 hours of salt corrosion resistance test in accordance with ASTM B 117 standard and the 2000 hours of UV condensation test in accordance with the ASTM G 154 standard.

OTHER CHARACTERISTICS

Standard supply: double insulation switch that cuts off electricity when the cover is opened. Complete with quick connection. With dedicated electronic device to protect the LED module.



Electronic safety device to protect the LED module and the related ballast compliant with

EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Upon request: Class 2 - protection up to 10KV.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Registered Design **DM/100271** The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs.



The products of the Sella 1 family are compliant with all applicable tests (third-party certification) pursuant to standard **ANSI C136.31: Street Lighting – Luminaire Vibration.**

- Test level: 3.0G Level 2 for bridge/overpass applications.

UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



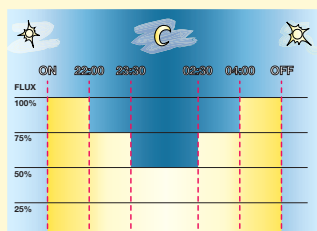
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

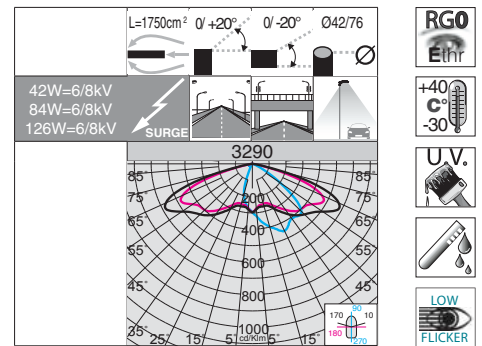
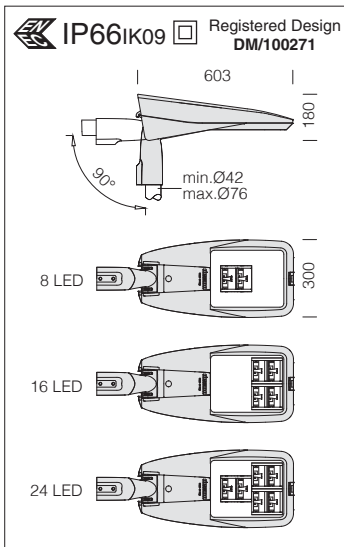
Example with Zhaga Socket
(subcode -0054)



LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

acc. 504 single arm	
grey	991262-00
graphite	991263-00
Suited for poles with a diameter 60mm	



LED: LUMINOUS FLUX MAINTENANCE
(including end-of-life failure)

n. LED	W tot	L80B10 @ta+25°C	L80B10 @ta+50°C	L80B10 @ta+50°C	L90B10 @ta+50°C
8	42 (700mA)				
16	84 (700mA)	>100.000h	>100.000h	70.000h	50.000h
24	126 (700mA)				

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

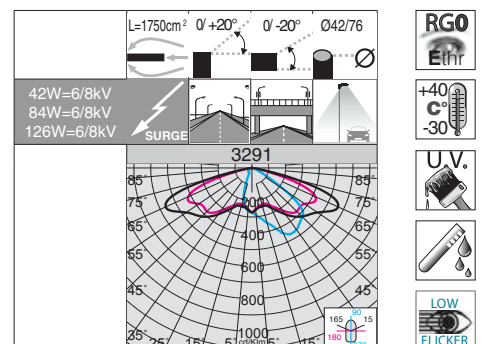
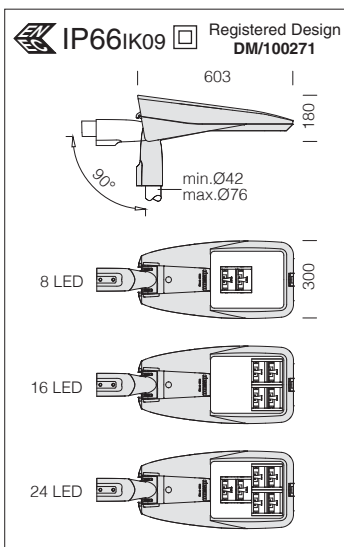
LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3290 Sella 1 - ST					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330603-00	42	4000K - 4888lm - CRI 70
	graphite		330600-00		
LED	grey	7.20	330603-39	42	3000K - 4546lm - CRI 70
	graphite		330600-39		
LED	grey	7.20	330604-00	84	4000K - 9777lm - CRI 70
	graphite		330601-00		
LED	grey	7.20	330604-39	84	3000K - 9093lm - CRI 70
	graphite		330601-39		
LED	grey	7.20	330605-00	126	4000K - 14567lm - CRI 70
	graphite		330602-00		
LED	grey	7.20	330605-39	126	3000K - 13547lm - CRI 70
	graphite		330602-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).

3000K

4000K



LED: LUMINOUS FLUX MAINTENANCE
(including end-of-life failure)

n. LED	W tot	L80B10 @ta+25°C	L80B10 @ta+50°C	L80B10 @ta+50°C	L90B10 @ta+50°C
8	42 (700mA)				
16	84 (700mA)	>100.000h	>100.000h	70.000h	50.000h
24	126 (700mA)				

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

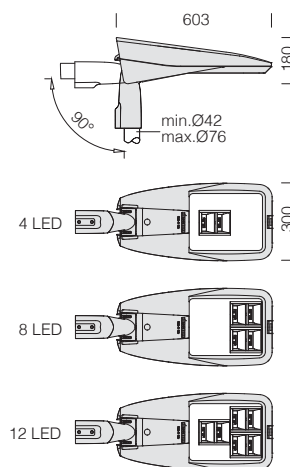
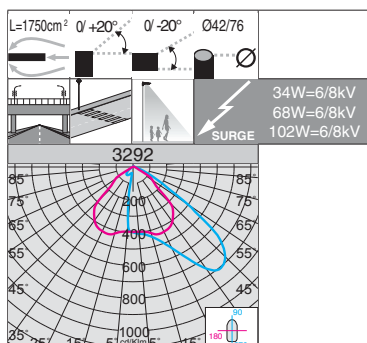
LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3291 Sella 1 - STWB					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330613-00	42	4000K - 4887lm - CRI 70
	graphite		330610-00		
LED	grey	7.20	330613-39	42	3000K - 4545lm - CRI 70
	graphite		330610-39		
LED	grey	7.20	330614-00	84	4000K - 9710lm - CRI 70
	graphite		330611-00		
LED	grey	7.20	330614-39	84	3000K - 9030lm - CRI 70
	graphite		330611-39		
LED	grey	7.20	330615-00	126	4000K - 14539lm - CRI 70
	graphite		330612-00		
LED	grey	7.20	330615-39	126	3000K - 13521lm - CRI 70
	graphite		330612-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).

3000K

4000K



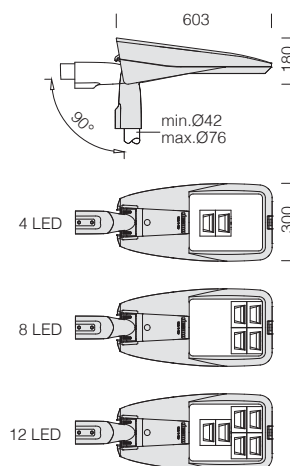
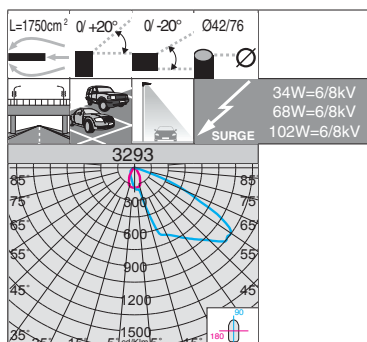
3292 Sella 1 - asymmetric 45°

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330664-00	34	4000K - 3654lm - CRI 70
	graphite		330660-00		
LED	grey	7.20	330664-39	34	3000K - 3398lm - CRI 70
	graphite		330660-39		
LED	grey	7.20	330665-00	68	4000K - 7308lm - CRI 70
	graphite		330661-00		
LED	grey	7.20	330665-39	68	3000K - 6796lm - CRI 70
	graphite		330661-39		
LED	grey	7.20	330666-00	102	4000K - 10962lm - CRI 70
	graphite		330662-00		
LED	grey	7.20	330666-39	102	3000K - 10195lm - CRI 70
	graphite		330662-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%: 80.000h (L80B10).



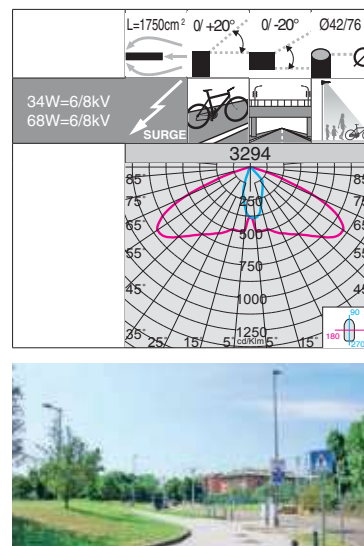
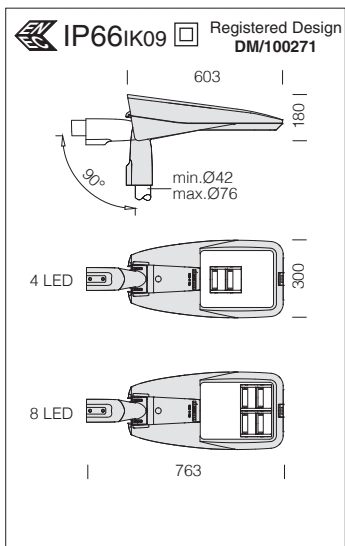
3293 Sella 1 - asymmetric 60°

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330684-00	34	4000K - 3045lm - CRI 70
	graphite		330680-00		
LED	grey	7.20	330684-39	34	3000K - 2832lm - CRI 70
	graphite		330680-39		
LED	grey	7.20	330685-00	68	4000K - 6130lm - CRI 70
	graphite		330681-00		
LED	grey	7.20	330685-39	68	3000K - 5701lm - CRI 70
	graphite		330681-39		
LED	grey	7.20	330686-00	102	4000K - 9395lm - CRI 70
	graphite		330682-00		
LED	grey	7.20	330686-39	102	3000K - 8737lm - CRI 70
	graphite		330682-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%: 80.000h (L80B10).

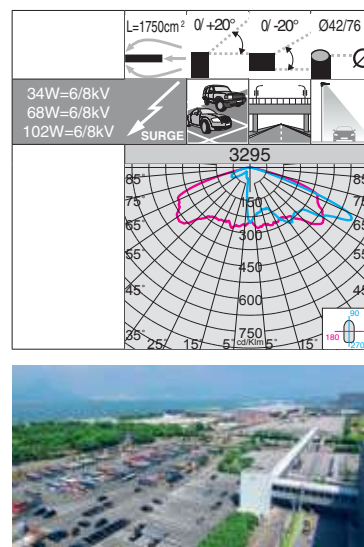
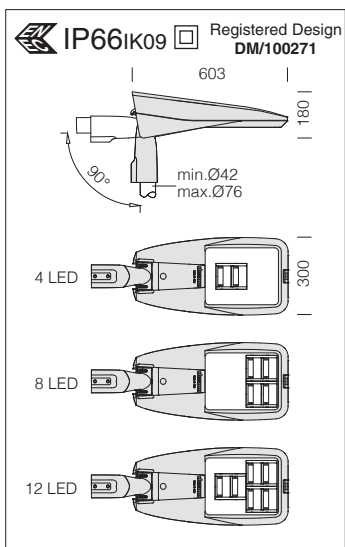


Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 . Luminous flux maintenance 80%: 80.000h (L80B10).

3294 Sella 1 - cycleways					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330702-00	34	4000K - 3011lm - CRI 70
	graphite		330700-00		
LED	grey	7.20	330702-39	34	3000K - 2800lm - CRI 70
	graphite		330700-39		
LED	grey	7.20	330703-00	68	4000K - 6015lm - CRI 70
	graphite		330701-00		
LED	grey	7.20	330703-39	68	3000K - 5594lm - CRI 70
	graphite		330701-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).



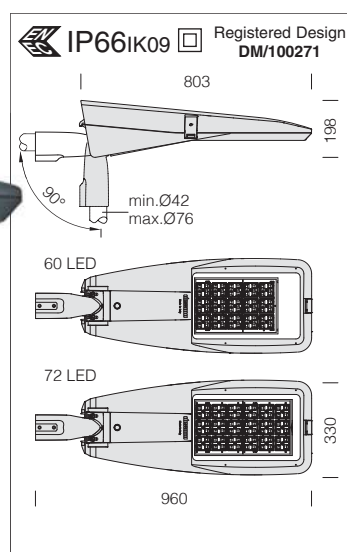
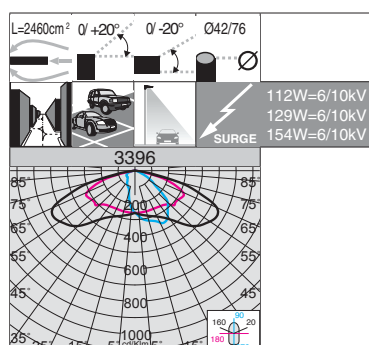
Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 . Luminous flux maintenance 80%: 80.000h (L80B10).

3295 Sella 1 - large areas					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.20	330724-00	34	4000K - 2862lm - CRI 70
	graphite		330720-00		
LED	grey	7.20	330724-39	34	3000K - 2662lm - CRI 70
	graphite		330720-39		
LED	grey	7.20	330725-00	68	4000K - 5725lm - CRI 70
	graphite		330721-00		
LED	grey	7.20	330725-39	68	3000K - 5324lm - CRI 70
	graphite		330721-39		
LED	grey	7.20	330726-00	102	4000K - 8587lm - CRI 70
	graphite		330722-00		
LED	grey	7.20	330726-39	102	3000K - 7986lm - CRI 70
	graphite		330722-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).





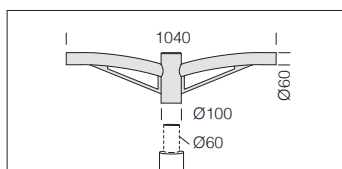
3396 Sella 2 - high performance

wattage	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm - CRI	
LED	grey	11.00	330830-00	112	4000K - 15732lm - CRI 70	
	graphite		330831-00			
LED	grey	11.50	330832-00	129	4000K - 18987lm - CRI 70	
	graphite		330833-00			
LED	grey	11.50	330834-00	154	4000K - 21050lm - CRI 70	
	graphite		330835-00			

Integrated **ADVANCED PROG** functions (see table on p. 393).

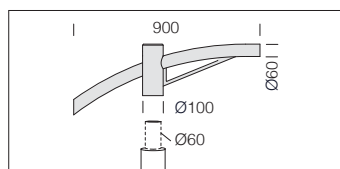
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor $\geq 0,9$.
Luminous flux maintenance 80%: 80.000h (L80B20).



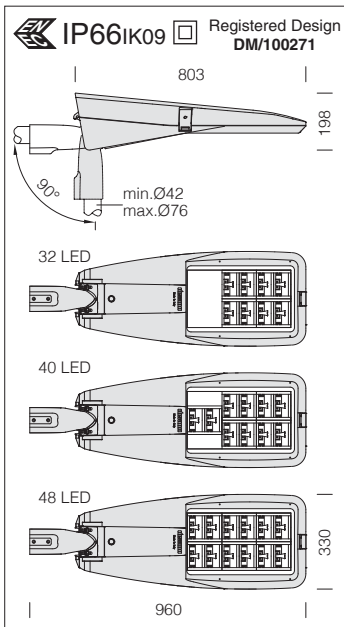
acc. 508 double arm

grey	991266-00
graphite	991267-00
Suited for poles with a diameter 60mm.	



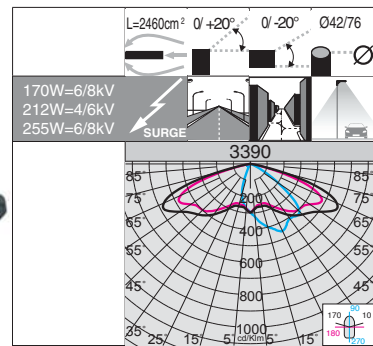
acc. 504 single arm

grey	991262-00
graphite	991263-00
Suited for poles with a diameter 60mm.	



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

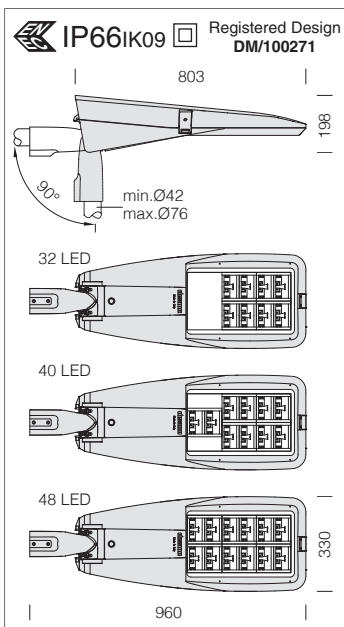


LED: LUMINOUS FLUX MAINTENANCE
(including end-of-life failure)

n. LED	W tot	L80B10 @ta+25°C	L80B10 @ta+50°C	L90B10 @ta+25°C	L90B10 @ta+50°C
32	170 (700mA)	>100.000h	>100.000h	70.000h	50.000h
40	212 (700mA)	>100.000h	>100.000h	70.000h	50.000h
48	255 (700mA)	>100.000h	>100.000h	60.000h	40.000h

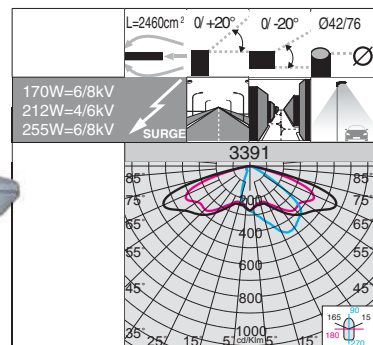
3390 Sella 2 - ST					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	11.00	330803-00	170	4000K - 20634lm - CRI 70
	graphite		330800-00		
LED	grey	11.00	330803-39	170	3000K - 19190lm - CRI 70
	graphite		330800-39		
LED	grey	11.00	330804-00	212	4000K - 25792lm - CRI 70
	graphite		330801-00		
LED	grey	11.00	330804-39	212	3000K - 23987lm - CRI 70
	graphite		330801-39		
LED	grey	11.00	330805-00	255	4000K - 30950lm - CRI 70
	graphite		330802-00		
LED	grey	11.00	330805-39	255	3000K - 28784lm - CRI 70
	graphite		330802-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

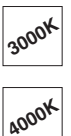


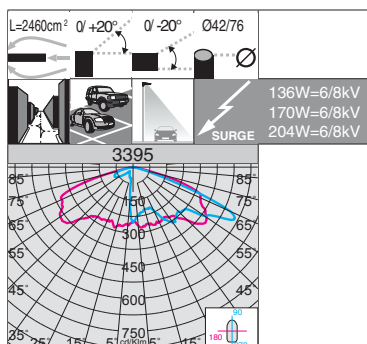
LED: LUMINOUS FLUX MAINTENANCE
(including end-of-life failure)

n. LED	W tot	L80B10 @ta+25°C	L80B10 @ta+50°C	L90B10 @ta+25°C	L90B10 @ta+50°C
32	170 (700mA)	>100.000h	>100.000h	70.000h	50.000h
40	212 (700mA)	>100.000h	>100.000h	70.000h	50.000h
48	255 (700mA)	>100.000h	>100.000h	60.000h	40.000h

3391 Sella 2 - STWB					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	11.00	330813-00	170	4000K - 20495lm - CRI 70
	graphite		330810-00		
LED	grey	11.00	330813-39	170	3000K - 19060lm - CRI 70
	graphite		330810-39		
LED	grey	11.00	330814-00	212	4000K - 25618lm - CRI 70
	graphite		330811-00		
LED	grey	11.00	330814-39	212	3000K - 23825lm - CRI 70
	graphite		330811-39		
LED	grey	11.00	330815-00	255	4000K - 30742lm - CRI 70
	graphite		330812-00		
LED	grey	11.00	330815-39	255	3000K - 28591lm - CRI 70
	graphite		330812-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).

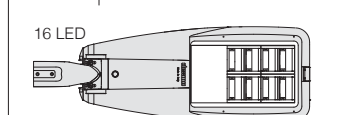
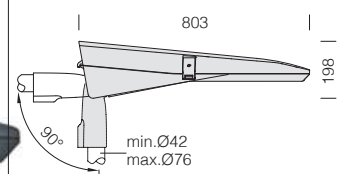




>100.000h



IP66 IK09 Registered Design DM/100271



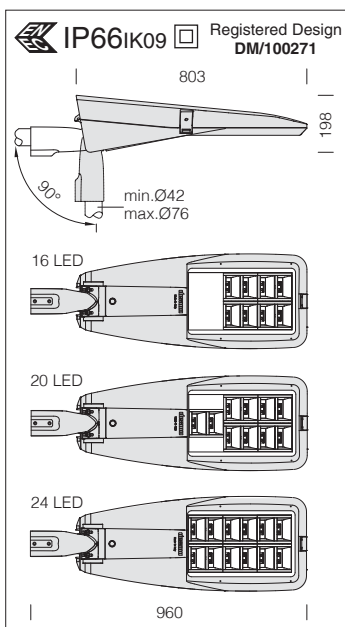
Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

3395 Sella 2 - large areas

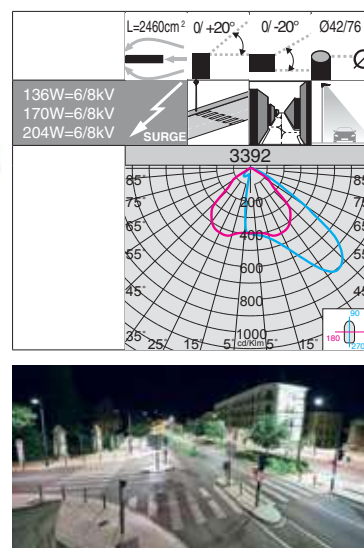
wattage (700mA)	colour	weight	CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
			code	W tot	K - ølm 700mA - CRI	
LED	grey	11.00	330824-00	136	4000K - 11450lm - CRI 70	
	graphite		330820-00			
LED	grey	11.00	330824-39	136	3000K - 10649lm - CRI 70	
	graphite		330820-39			
LED	grey	11.00	330825-00	170	4000K - 14312lm - CRI 70	
	graphite		330821-00			
LED	grey	11.00	330825-39	170	3000K - 13310lm - CRI 70	
	graphite		330821-39			
LED	grey	11.00	330826-00	204	4000K - 17175lm - CRI 70	
	graphite		330822-00			
LED	grey	11.00	330826-39	204	3000K - 15973lm - CRI 70	
	graphite		330822-39			

Integrated **ADVANCED PROG** functions (see table on p. 393).



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

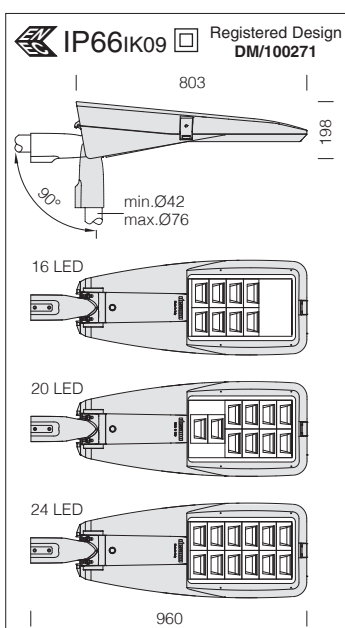
LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3392 Sella 2 - asymmetric 45°

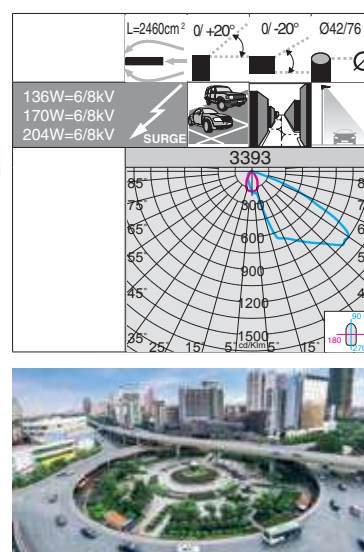
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	11.00	330864-00	136	4000K - 14610lm - CRI 70
	graphite		330860-00		
LED	grey	11.00	330864-39	136	3000K - 13587lm - CRI 70
	graphite		330860-39		
LED	grey	11.00	330865-00	170	4000K - 18262lm - CRI 70
	graphite		330861-00		
LED	grey	11.00	330865-39	170	3000K - 16984lm - CRI 70
	graphite		330861-39		
LED	grey	11.00	330866-00	204	4000K - 21915lm - CRI 70
	graphite		330862-00		
LED	grey	11.00	330866-39	204	3000K - 20381lm - CRI 70
	graphite		330862-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).



Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

LED: Power factor ≥ 0.92 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3393 Sella 2 - asymmetric 60°

		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	11.00	330884-00	136	4000K - 12260lm - CRI 70
	graphite		330880-00		
LED	grey	11.00	330884-39	136	3000K - 11402lm - CRI 70
	graphite		330880-39		
LED	grey	11.00	330885-00	170	4000K - 15325lm - CRI 70
	graphite		330881-00		
LED	grey	11.00	330885-39	170	3000K - 14252lm - CRI 70
	graphite		330881-39		
LED	grey	11.00	330886-00	204	4000K - 18390lm - CRI 70
	graphite		330882-00		
LED	grey	11.00	330886-39	204	3000K - 17103lm - CRI 70
	graphite		330882-39		

Integrated **ADVANCED PROG** functions (see table on p. 393).





What is a smart city?

A smart city is a city where there is a better quality of life and where public spaces can help citizens achieve their full potential and move more freely, while saving time and respecting the environment. The intelligence of a «Smart City» is a distributed, shared, horizontal and social intelligence. It is an intelligence that promotes the participation of citizens and the organization of the city towards a greater optimization of resources and results. Energy consumption, public resource use and time are all optimized.

With the Web and the new technologies, access to services is easier and public spaces can be organized to favour mobility, save time and turn our cities smarter. Remote management systems make objects more intelligent and recognizable, so that they can communicate data and provide access to aggregated information. Thanks to a more efficient use of the Web, everything within a city (urban fittings, public buildings, monuments, etc.) can play an active role and become collectors and distributors of information about traffic, energy consumption, services and assistance to citizens, cultural and touristic attractions and much more.

The fixture can be equipped with a **control system which provides lighting managers with the ability to improve the performance of urban and street lighting** installations while saving costs by lowering energy usage, optimizing operation and reducing CO₂ emissions. The system incorporates the latest technologies in power electronics, communications and IoT. This makes possible, among other features, an on/off scheduled switching, a dynamic programming of lighting levels, map-based visualizations, automatic alarm reports, real-time fixture monitoring and maintenance scheduling of every single luminaire of multiple installations at once. The system has a friendly and secure web-based user interface which can be operated anywhere and anytime from any web-connected device such as computers, smartphones and tablets providing real time and accurate control of the lighting infrastructure.

System Highlights

- Flexible solution
 - Valid for new installations as well as for lighting renovation
 - Autonomous system but integrable with other city services platforms
 - Valid worldwide
 - Compatible with most Smart City services platforms
- Values and revenues
 - Better lighting performance
 - Money savings
 - Energy costs reduction
 - Operation costs reduction
- Users
 - Municipalities and County Councils
 - Smart City platforms operators
 - Managers of large infrastructure
- Applications
 - Street and residential lighting (streets, roads)
 - Urban & architectural lighting (monuments, public spaces)
 - Large infrastructure lighting (airports, ports)
 - Large areas and sport lighting (car parks, stadiums)
 - Urban events lighting (celebrations, demonstrations)

System Architecture & Components

- System architecture
 - Smart power electronics: LED drivers
 - Wireless network hardware
 - RF Nodes and GSM Gateways
 - Cloud-based data acquisition and network management
 - Management software suite (Network & data management)
 - Web-based multi-device user friendly interface
- Technical aspects
 - Fully programmable electrical parameters and functionalities
 - Connectivity of sensors
 - Self-diagnosis, notification of alarms
 - Mains voltage and frequency monitoring
 - High efficiency
- Lighting network nodes
 - Multi-hop wireless mesh network
 - IP-based protocol, broad coverage
 - Automatic neighbour discovery, self-organization, ad hoc configuration
 - Extensibility, interoperability, open standards
 - Robust link, reliable and high-performance network
 - Additional sensor data acquisition (optional)
- Gateway
 - Mesh network concentrator
 - 2G/3G/LTE network gateway
 - Time and date precise synch

- Central host and database
 - Local or cloud hosting available
 - End-to-end secured system
 - Smart City and other horizontal management platforms integrability
 - Multi-level data interchange capabilities, app interfaces
 - Business Intelligence and data analytics
- Management Software Suite
 - Lighting configuration, management and maintenance
 - Easy installation, test capabilities
 - Data network management and configuration
 - Reports, statistics and data visualization tools
- Fast commissioning
 - Ease of installation
 - Assembling outside fitting
 - Remote configuration
 - Reliable, outdoor-proof
- Accuracy
 - GPS accurate location
 - Point-to-point management
 - Real-time operation



GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.

Pole connection: in die-cast aluminium and with gaskets to secure the frame according to different inclinations. Adjustable ranges: between 0° and 15° for side mount; and between 0° and 10° for mast-top mounting. Inclination pace: 5°. Suited for poles with a diameter 63-60mm

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001)

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

OTHER CHARACTERISTICS

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module.

Equipment: complete with IP67 airtight connector for mains connection. Supplied with double insulation switch that cuts off electricity when the cover is opened.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Mini Stelvio line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.



The products of the Mini Stelvio family are compliant with all applicable tests (third-party certification) pursuant to standard

ANSI C136.31: Street Lighting – Luminaire Vibration.

- Test level: 3.0G Level 2 for bridge/overpass applications.

UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

1750K

version with 1750K LED (subcode -44): lamps with warm light at a colour temperature of 1750K are ideal for particularly dangerous areas (pedestrian crossings, entries, roundabouts, etc.) and to minimize the lighting's impact on the environment and on the fauna of green urban areas.




BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup

This can be done by programming the drive current values requested when ordering/purchasing the fixture

LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

1-10V dimming ordered with sub-code -12		Adjustment range from 10%-100% with 1-10V
 Virtual Midnight order with subcode -30		Stand-alone system with automatic luminous flux reduction in 4 steps . To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i>
Factory settings		ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.
Time	Flux	
on ÷ 22:00	100%	
22:00 ÷ 23:30	75%	
23:30 ÷ 02:30	50%	
02:30 ÷ 04:00	75%	
04:00 ÷ off	100%	
PLC remote control ordered with sub-code -0078		Point-to-point and system management and diagnosis system
For more information see page XVI-XX		

Example with Zhaga Socket
(subcode -0054)

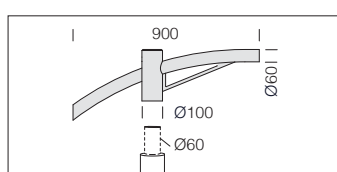


LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

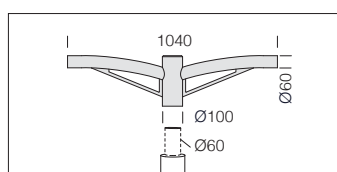
Nema Socket order with **subcode -40** (sealing cap to be ordered separately)

Zhaga Socket order with **subcode -0054** (complete with sealing cap)

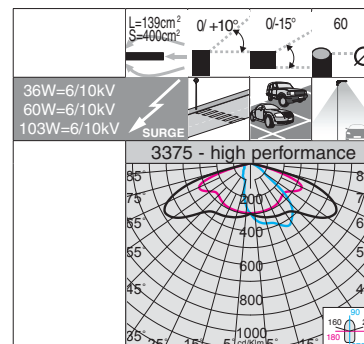
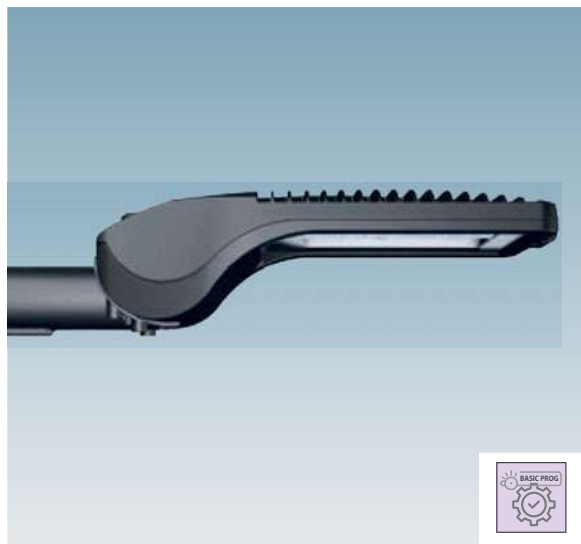
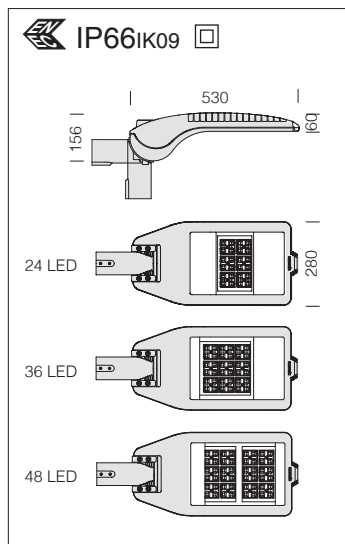
Mounted directly on the fixture's body, ideal for remote lighting management applications.



acc. 504 single arm	
anthrac.	991264-00
Suited for poles with a diameter 60mm.	



acc. 508 double arm	
anthrac.	991265-00
Suited for poles with a diameter 60mm.	

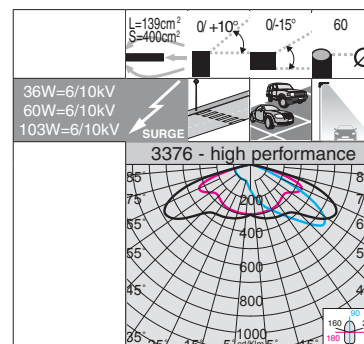
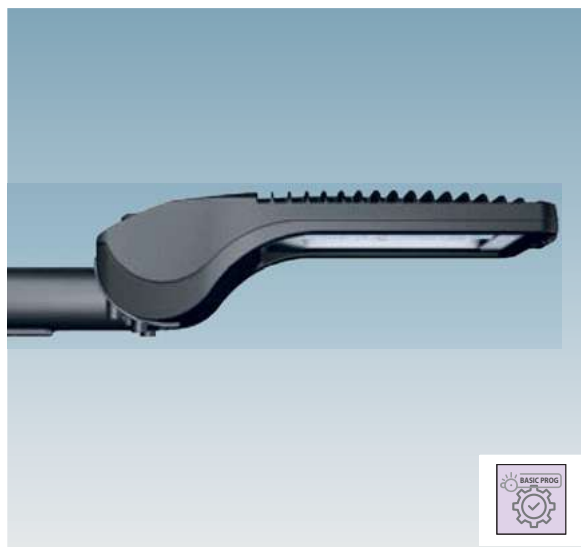
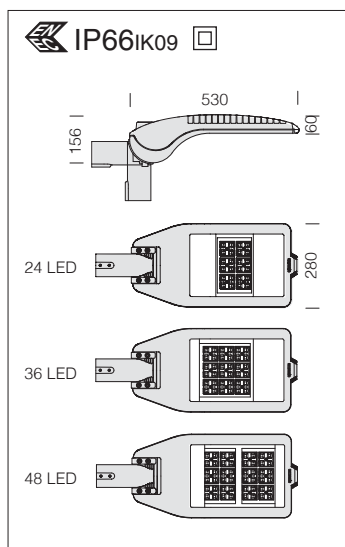


Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3375 Mini Stelvio - high performance						
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)		
wattage	colour	weight	code	W tot	K - ϕ lm - CRI	
LED	anthracite	7.60	340200-00	36	4000K - 5523lm - CRI ≥ 70	
			340200-39		3000K - 5136lm - CRI ≥ 70	
LED	anthracite	8.00	340201-00	60	4000K - 8262lm - CRI ≥ 70	
			340201-39		3000K - 7684lm - CRI ≥ 70	
LED	anthracite	8.10	340202-00	103	4000K - 13483lm - CRI ≥ 70	
			340202-39		3000K - 12539lm - CRI ≥ 70	

Upon request: possibility to choose different lighting point management systems (see table on p. 405).

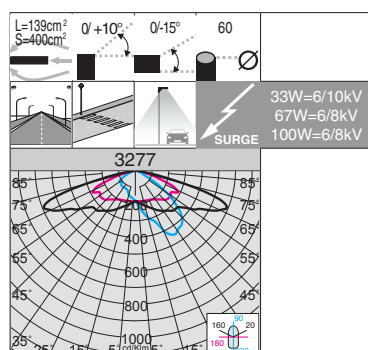


Optics: in PMMA, highly resistant to temperature and UV radiation.

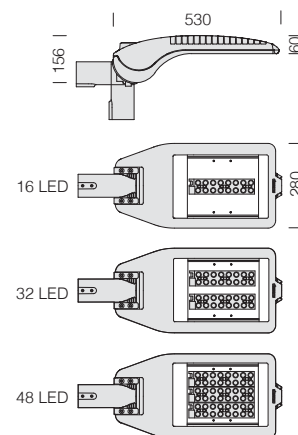
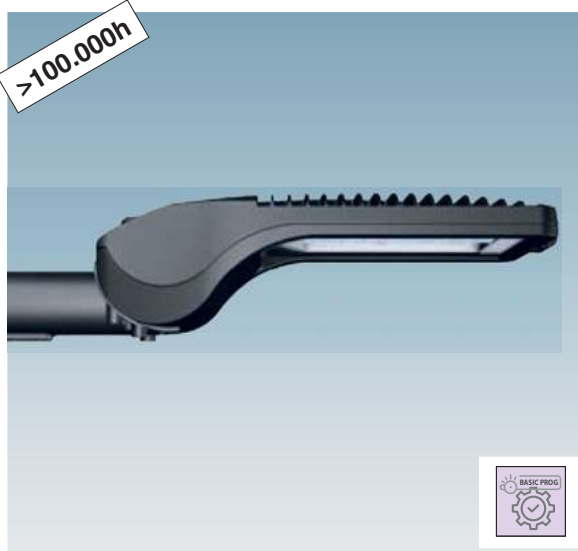
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3376 Mini Stelvio - high performance - large areas						
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)		
wattage	colour	weight	code	W tot	K - ϕ lm - CRI	
LED	anthracite	7.60	340210-00	36	4000K - 5333lm - CRI ≥ 70	
			340210-39		3000K - 4960lm - CRI ≥ 70	
LED	anthracite	8.00	340211-00	60	4000K - 8129lm - CRI ≥ 70	
			340211-39		3000K - 7560lm - CRI ≥ 70	
LED	anthracite	8.10	340212-00	103	4000K - 13267lm - CRI ≥ 70	
			340212-39		3000K - 12338lm - CRI ≥ 70	

Upon request: possibility to choose different lighting point management systems (see table on p. 405).



>100.000h



Upon request (sub-code -44)	
LED	1750K



3277 Mini Stelvio Fx T2

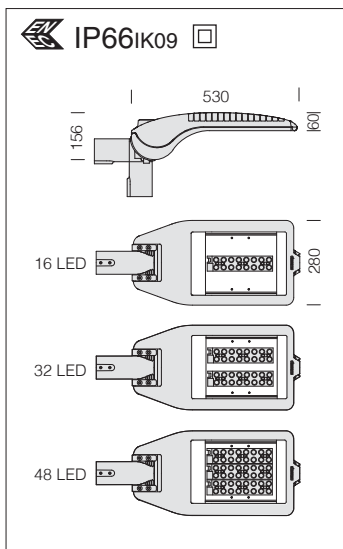
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330380-00	33	4000K - 4573lm - CRI≥70
			330380-39		3000K - 4345lm - CRI≥70
LED	anthracite	8.00	330381-00	67	4000K - 9142lm - CRI≥70
			330381-39		3000K - 8685lm - CRI≥70
LED	anthracite	8.10	330383-00	100	4000K - 13713lm - CRI≥70
			330383-39		3000K - 13027lm - CRI≥70

Upon request: possibility to choose different lighting point management systems (see table on p. 405).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	17	4000K	2426lm	16	17	3000K	2305lm
		32	32		4851lm	32	32		4607lm
		48	49		7275lm	48	49		6911lm
upon request	530mA	16	25	4000K	3613lm	16	25	3000K	3433lm
		32	52		7223lm	32	52		6862lm
		48	74		10834lm	48	74		10293lm

Optics: in PMMA, highly resistant to temperature and UV radiation.

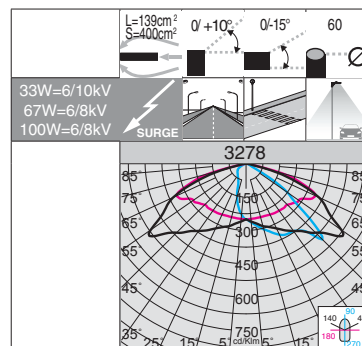
LED: Power factor ≥0.9.
Luminous flux maintenance 80%:
100.000h (L80B10).



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
100.000h (L80B10).

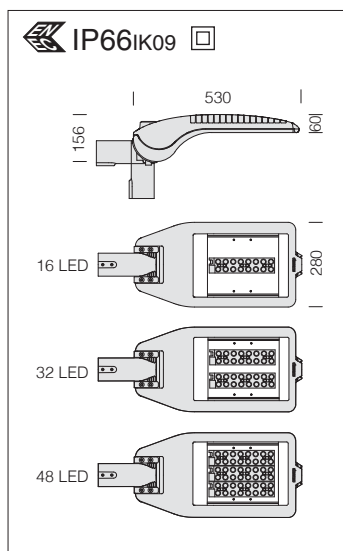
Upon request: possibility to choose different lighting point management systems (see table on p. 405).



Upon request (sub-code -44)	
LED	1750K

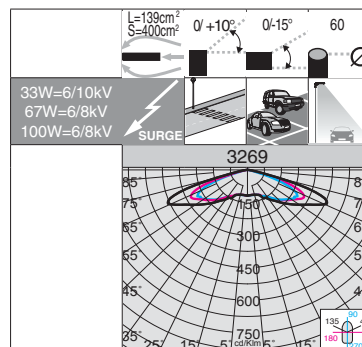
3278 Mini Stelvio Fx T3					
			CLD BASIC		LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330390-00	33	4000K - 4728lm - CRI \geq 70
			330390-39		3000K - 4491lm - CRI \geq 70
LED	anthracite	8.00	330391-00	67	4000K - 9456lm - CRI \geq 70
			330391-39		3000K - 8983lm - CRI \geq 70
LED	anthracite	8.10	330393-00	100	4000K - 14178lm - CRI \geq 70
			330393-39		3000K - 13470lm - CRI \geq 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	17	4000K	2507lm	16	17	3000K	2383lm
		32	32		5016lm	32	32		4766lm
		48	49		7521lm	48	49		7145lm
upon request	530mA	16	25	4000K	3735lm	16	25	3000K	3548lm
		32	52		7470lm	32	52		7096lm
		48	74		11200lm	48	74		10640lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
100.000h (L80B10).



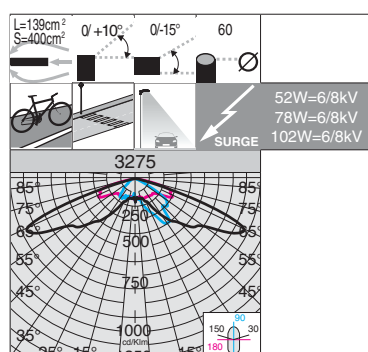
Upon request (sub-code -44)	
LED	1750K

3269 Mini Stelvio Fx T5					
			CLD BASIC		LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330460-00	33	4000K - 4510lm - CRI \geq 70
			330460-39		3000K - 4284lm - CRI \geq 70
LED	anthracite	8.00	330461-00	67	4000K - 8910lm - CRI \geq 70
			330461-39		3000K - 8464lm - CRI \geq 70
LED	anthracite	8.10	330463-00	100	4000K - 13366lm - CRI \geq 70
			330463-39		3000K - 12698lm - CRI \geq 70

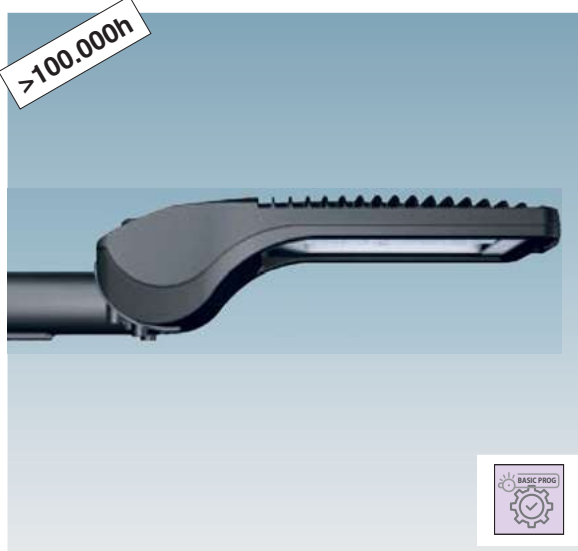
Upon request: possibility to choose different lighting point management systems (see table on p. 405).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	16	17	4000K	2392lm	16	17	3000K	2273lm
		32	32		4727lm	32	32		4490lm
		48	49		7091lm	48	49		6736lm
upon request	530mA	16	25	4000K	3563lm	16	25	3000K	3384lm
		32	52		7039lm	32	52		6687lm
		48	74		10559lm	48	74		10031lm

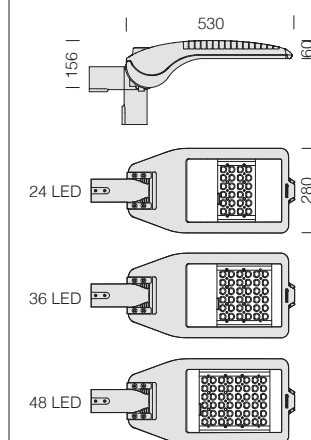




>100.000h



IP66IK09

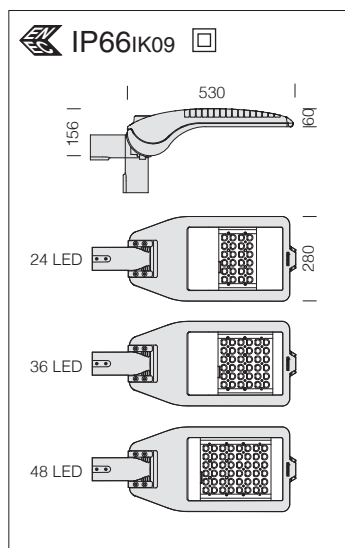


3275 Mini Stelvio plus					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330360-00	52	4000K - 5424lm - CRI≥70
		8.00	330361-00	78	4000K - 8135lm - CRI≥70
		8.10	330362-00	102	4000K - 10848lm - CRI≥70
Upon request: possibility to choose different lighting point management systems (see table on p. 405).					

Optics: in PMMA, highly resistant to temperature and UV radiation.

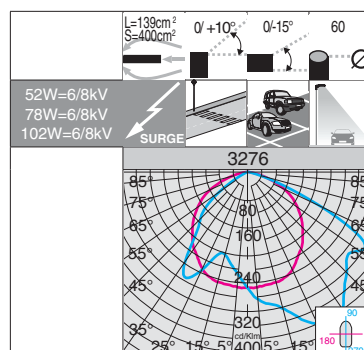
LED: Power factor ≥0.9.
Luminous flux maintenance 80%:
100.000h (L80B10).

Example	Power supply	n.LED	W tot	ølm
upon request	350mA	24	27	2948lm
		36	39	4422lm
		48	53	5897lm
upon request	530mA	24	40	4316lm
		36	60	6475lm
		48	78	8635lm



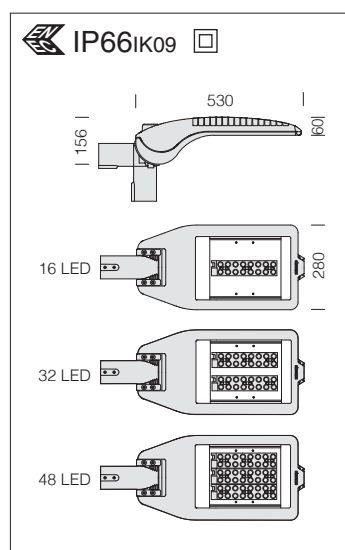
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
100.000h (L80B10).



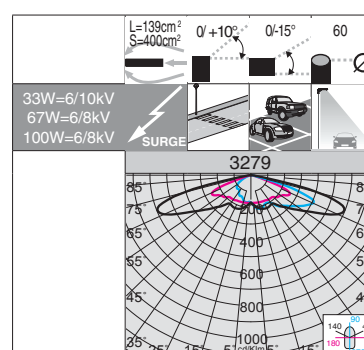
3276 Mini Stelvio plus - asymmetric					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330370-00	52	4000K - 5502lm - CRI≥70
		8.00	330371-00	78	4000K - 7718lm - CRI≥70
		8.10	330372-00	102	4000K - 10326lm - CRI≥70
Upon request: possibility to choose different lighting point management systems (see table on p. 405).					

Example	Power supply	n.LED	W tot	ølm
upon request	350mA	24	27	2991lm
		36	39	4488lm
		48	53	5983lm
upon request	530mA	24	40	4380lm
		36	60	6569lm
		48	78	8759lm



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
100.000h (L80B10).



Upon request (sub-code -44)	
LED	1750K

3279 Mini Stelvio Fx T4 - asymmetric					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	anthracite	7.60	330450-00	33	4000K - 4571lm - CRI≥70
			330450-39		3000K - 4342lm - CRI≥70
LED	anthracite	8.00	330451-00	67	4000K - 9141lm - CRI≥70
			330451-39		3000K - 8684lm - CRI≥70
LED	anthracite	8.10	330453-00	100	4000K - 13712lm - CRI≥70
			330453-39		3000K - 13027lm - CRI≥70
Upon request: possibility to choose different lighting point management systems (see table on p. 405).					

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	16	17	4000K	2425lm
		32	32		4850lm
		48	49		7274lm
upon request	530mA	16	25	4000K	3611lm
		32	52		7221lm
		48	74		10832lm

n.LED	W tot	K	ølm
16	17	3000K	2304lm
32	32		4607lm
48	49		6911lm
16	25	3000K	3430lm
32	52		6861lm
48	74		10290lm





GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Pole connection: in die-cast aluminium and with gaskets to secure the frame according to different inclinations. Adjustable ranges: between 0° and 15° for side mount; and between 0° and 10° for mast-top mounting. Inclination pace: 5°. Suited for poles with a diameter 63-60mm

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001)

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

OTHER CHARACTERISTICS

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module.

Equipment: complete with IP67 airtight connector for mains connection. Supplied with double insulation switch that cuts off electricity when the cover is opened.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Mini Stelvio line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.



The products of the Stelvio family are compliant with all applicable tests (third-party certification) pursuant to standard

ANSI C136.31: Street Lighting – Luminaire Vibration.

- Test level: 3.0G Level 2 for bridge/overpass applications.

UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



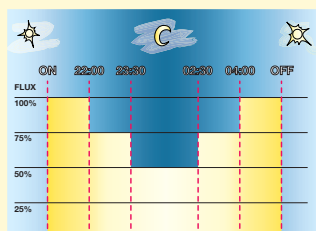
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

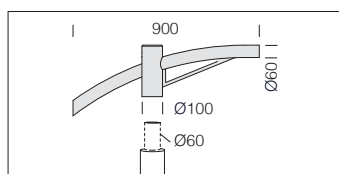
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

Example with Zhaga Socket
(subcode -0054)

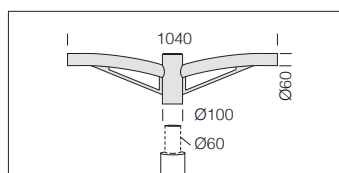


LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA** and **ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

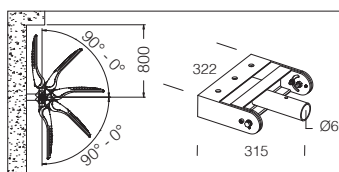
Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	



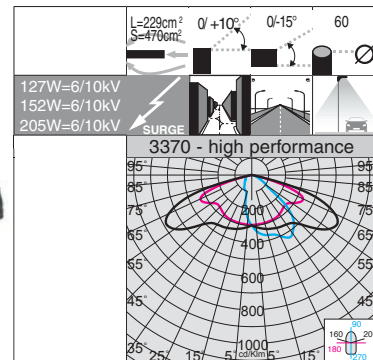
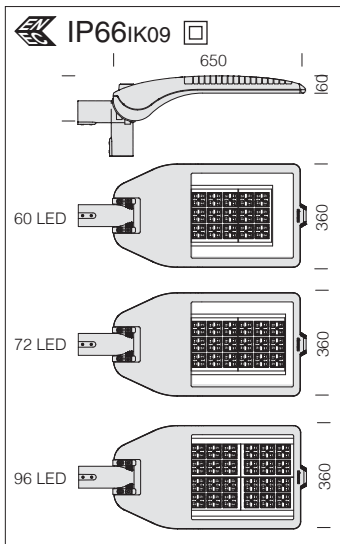
acc. 504 single arm	
anthrac.	991264-00
Suited for poles with a diameter 60mm.	



acc. 508 double arm	
anthrac.	991265-00
Suited for poles with a diameter 60mm.	



acc. 578 adjustable bracket	
anthrac.	997709-00
Adjustable bracket for wall mounting or for use on the towers.	

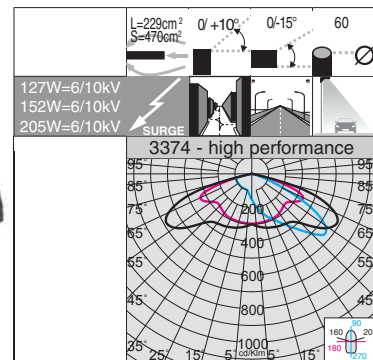
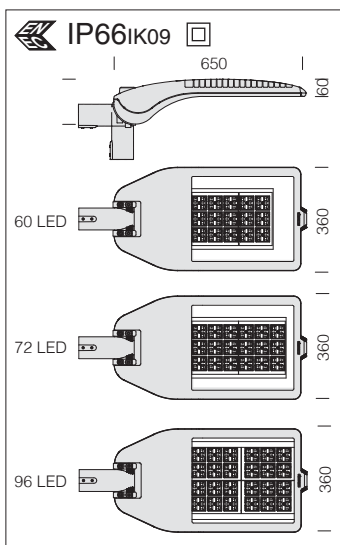


Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3370 Stelvio - high performance					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm - CRI
LED	anthracite	10.50	340250-00	127	4000K - 16892lm - CRI \geq 70
			340250-39		3000K - 15710lm - CRI \geq 70
LED	anthracite	11.00	340251-00	152	4000K - 20594lm - CRI \geq 70
			340251-39		3000K - 19152lm - CRI \geq 70
LED	anthracite	12.00	340252-00	205	4000K - 27458lm - CRI \geq 70
			340252-39		3000K - 25536lm - CRI \geq 70

Integrated **ADVANCED PROG** functions (see table on p. 413).



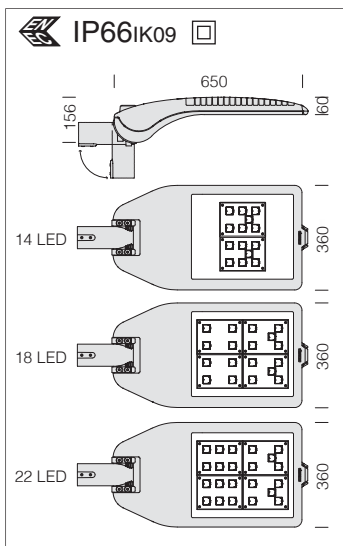
Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
80.000h (L80B20).

3374 Stelvio - high performance - large areas					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ϕ lm - CRI
LED	anthracite	10.50	340260-00	127	4000K - 16348lm - CRI \geq 70
			340260-39		3000K - 15204lm - CRI \geq 70
LED	anthracite	11.00	340261-00	152	4000K - 19920lm - CRI \geq 70
			340261-39		3000K - 18526lm - CRI \geq 70
LED	anthracite	12.00	340262-00	205	4000K - 26560lm - CRI \geq 70
			340262-39		3000K - 24701lm - CRI \geq 70

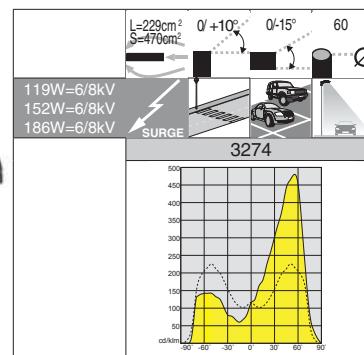
Integrated **ADVANCED PROG** functions (see table on p. 413).





Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

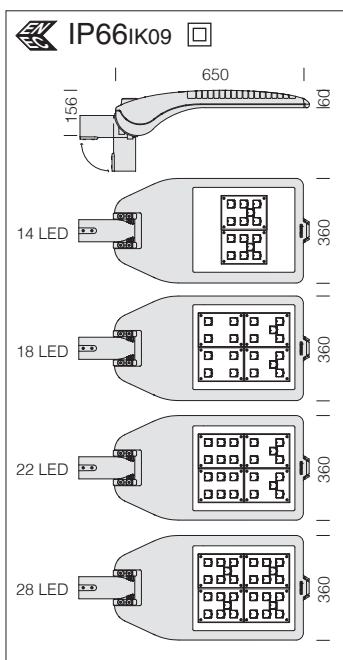


3274 - Stelvio 2 plus - asymmetric					
wattage (700mA)	colour	CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		
LED	anthracite	11.30	320360-00	119	K - ølm 700mA - CRI
			320360-39		4000K - 12817lm - CRI \geq 70
LED	anthracite	11.40	320361-00	152	3000K - 11920lm - CRI \geq 70
			320361-39		4000K - 16481lm - CRI \geq 70
LED	anthracite	12.80	320363-00	186	3000K - 15327lm - CRI \geq 70
			320363-39		4000K - 20144lm - CRI \geq 70
					3000K - 18734lm - CRI \geq 70

Integrated **ADVANCED PROG** functions (see table on p. 413).

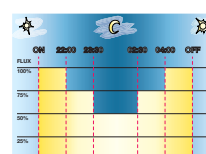
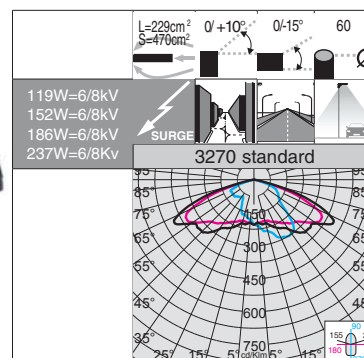
Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	14	58	4000K	6408lm
		18	75		8240lm
		22	91		10072lm
upon request	530mA	14	90	4000K	9704lm
		18	116		12478lm
		22	142		15251lm

n.LED	W tot	K	ølm
14	58	3000K	5959lm
18	75		7663lm
22	91		9367lm
14	90	3000K	9025lm
18	116		11605lm
22	142		14183lm



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



Sub-code -30:
version with **virtual midnight**.



3270 - Stelvio 1 plus					
wattage (700mA)	colour	CLD PROG		W tot	LUMEN OUTPUT (tq= 25 °C)
		weight	code		
LED	anthracite	11.30	330342-00	119	K - ølm 700mA - CRI
			330342-39		4000K - 13099lm - CRI \geq 70
LED	anthracite	11.40	330348-00	152	3000K - 12182lm - CRI \geq 70
			330348-39		4000K - 16842lm - CRI \geq 70
LED	anthracite	12.80	330343-00	186	3000K - 15663lm - CRI \geq 70
			330343-39		4000K - 20586lm - CRI \geq 70
LED	anthracite	12.80	330349-00	237	3000K - 19145lm - CRI \geq 70
			330349-39		4000K - 26198lm - CRI \geq 70
					3000K - 24364lm - CRI \geq 70

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	14	58	4000K	7214lm
		18	75		9276lm
		22	91		11340lm
		28	116		13099lm
upon request	530mA	14	90	4000K	9824lm
		18	116		12630lm
		22	142		15437lm
		28	179		19836lm

n.LED	W tot	K	ølm
14	58	3000K	6709lm
18	75		8627lm
22	91		10546lm
28	116		12182lm
14	90	3000K	9136lm
18	116		11746lm
22	142		14356lm
28	179		18447lm

Integrated **ADVANCED PROG** functions (see table on p. 413).



GENERAL CHARACTERISTICS

Housing and cover: in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.

Pole connection: in die-cast aluminium and with gaskets to secure the frame according to different inclinations. Adjustable ranges: between 0° and 20° for side mount; and between 0° and 15° for mast-top mounting. Inclination pace: 5°. Suited for poles with a diameter 46-76.

Diffuser: clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN 12150-1 : 2001)

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

OTHER CHARACTERISTICS

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module. Complete with quick connection.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Photometric performance: designed with an optical system capable of controlling the potential glare created by the growing light intensity of LEDs while achieving high photometric performance.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Rolle line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.



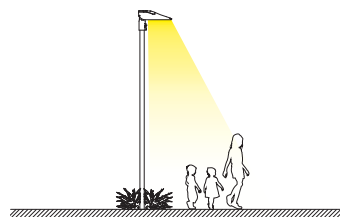
UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



CUT-OFF accessory (for HP versions): ideal for blocking backlight and eliminating potential intensity peak behind the light pole; available in either white or black shades (NOTE: the black version will block backlight best, while the white version will enable greater efficiency).



BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
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LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

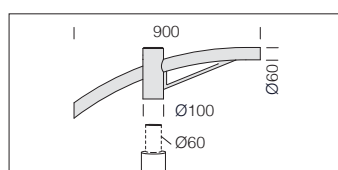
possibility to choose different lighting point management systems according to the system's needs:

1-10V dimming ordered with sub-code -12		Adjustment range from 10%-100% with 1-10V
Virtual Midnight order with subcode -30		Stand-alone system with automatic luminous flux reduction in 4 steps . To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i>
Factory settings		ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.
Time	Flux	
on ÷ 22:00	100%	
22:00 ÷ 23:30	75%	
23:30 ÷ 02:30	50%	
02:30 ÷ 04:00	75%	
04:00 ÷ off	100%	
PLC remote control ordered with sub-code -0078		Point-to-point and system management and diagnosis system
For more information see page XVI-XX		

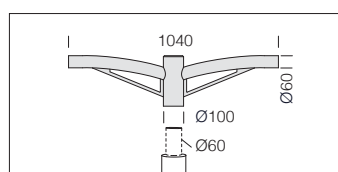
Example with Zhaga Socket
(subcode -0054)

LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

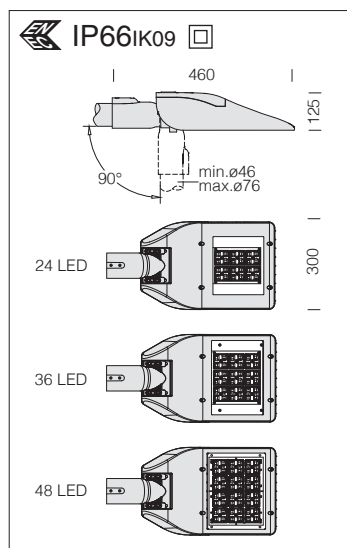
Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	



acc. 504 single arm	
grey	991262-00
Suited for poles with a diameter 60mm.	

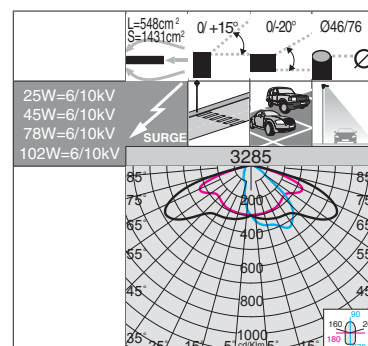
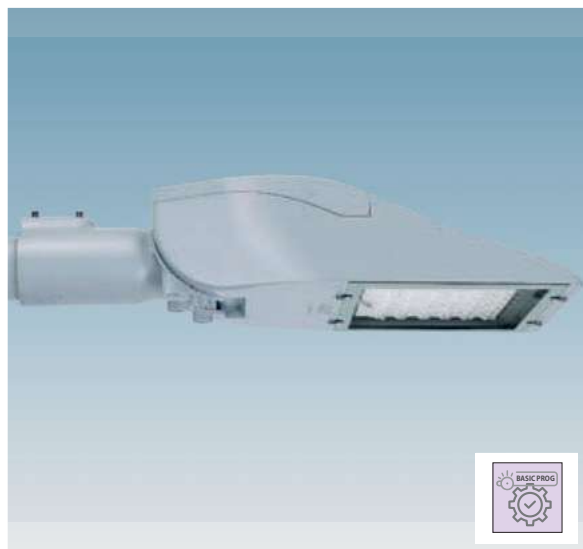


acc. 508 double arm	
grey	991266-00
Suited for poles with a diameter 60mm.	



Optics: in PMMA, highly resistant to temperature and UV radiation.

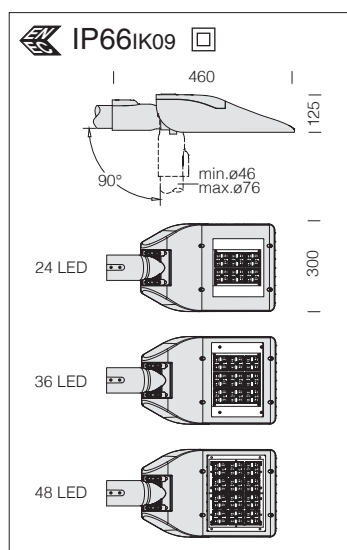
LED: Power factor $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



* On request: available ideal version for pedestrian crossing (left and right).

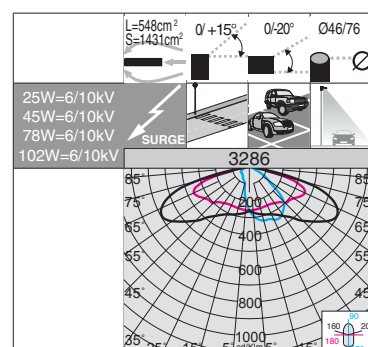
3285 Rolle - high performance					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	6.50	340100-00	25	4000K - 4346lm - CRI 70
			340100-39		3000K - 4287lm - CRI 70
LED	grey	7.00	340101-00	45	4000K - 7412lm - CRI 70
			340101-39		3000K - 7266lm - CRI 70
LED	grey	7.00	340102-00	78	4000K - 11561lm - CRI 70
			340102-39		3000K - 11221lm - CRI 70
LED *	grey	7.00	340103-00	102	4000K - 15415lm - CRI 70
			340103-39		3000K - 13828lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 419).



Optics: in PMMA, highly resistant to temperature and UV radiation.

LED: Power factor $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).

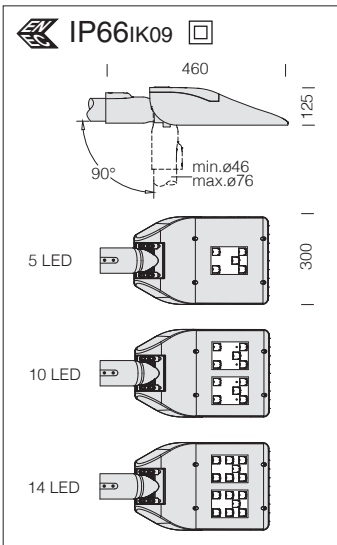
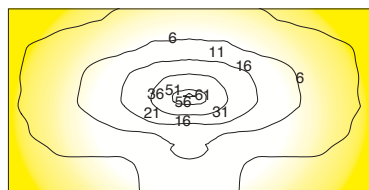
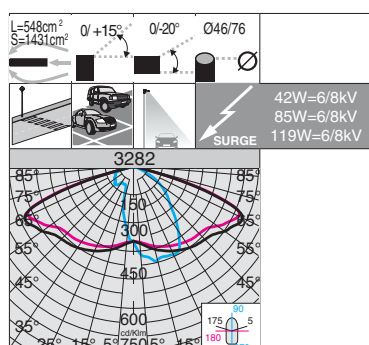


* On request: available ideal version for pedestrian crossing (left and right).

3286 Rolle - high performance					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey	6.50	340110-00	25	4000K - 4229lm - CRI 70
			340110-39		3000K - 4172lm - CRI 70
LED	grey	7.00	340111-00	45	4000K - 7212lm - CRI 70
			340111-39		3000K - 7071lm - CRI 70
LED	grey	7.00	340112-00	78	4000K - 11251lm - CRI 70
			340112-39		3000K - 10920lm - CRI 70
LED *	grey	7.00	340113-00	102	4000K - 15001lm - CRI 70
			340113-39		3000K - 13033lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 419).





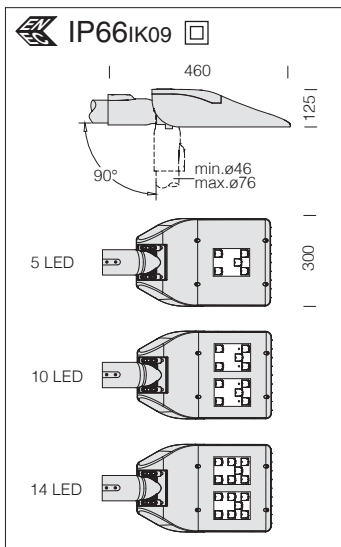
3282 Rolle - T3					
		CLD BASIC		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.70	330420-00	42	4000K - 4606lm - CRI 70
			330420-39		3000K - 4284lm - CRI 70
LED	grey	7.70	330421-00	85	4000K - 9214lm - CRI 70
			330421-39		3000K - 8569lm - CRI 70
LED	grey	7.70	330422-00	119	4000K - 12900lm - CRI 70
			330422-39		3000K - 11997lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 419).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	5	21	4000K	2538lm	5	21	3000K	2360lm
		10	42		5077lm	10	42		4722lm
		14	58		7107lm	14	58		6610lm
upon request	530mA	5	32	4000K	3455lm	5	32	3000K	3213lm
		10	64		6910lm	10	64		6426lm
		14	90		9675lm	14	90		8998lm

Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

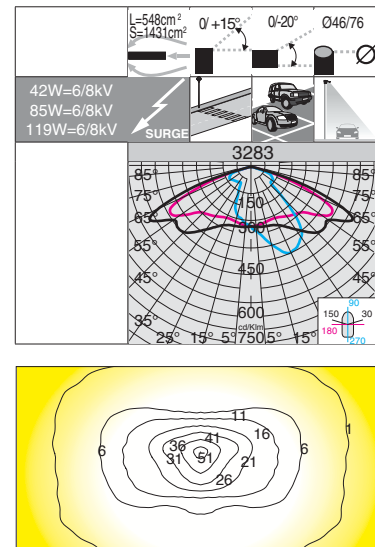
LED: Power factor ≥ 0.9 . Luminous flux maintenance 80%: >100.000h (L80B10).



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

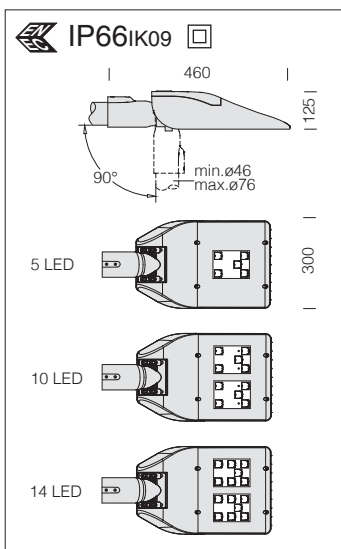
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Upon request: possibility to choose different lighting point management systems (see table on p. 419).



3283 Rolle - T4					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.70	330430-00	42	4000K - 4623lm - CRI 70
			330430-39		3000K - 4299lm - CRI 70
LED	grey	7.70	330431-00	85	4000K - 9247lm - CRI 70
			330431-39		3000K - 8600lm - CRI 70
LED	grey	7.70	330432-00	119	4000K - 12946lm - CRI 70
			330432-39		3000K - 12040lm - CRI 70

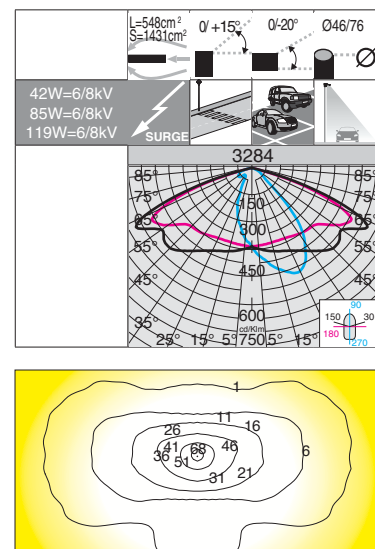
Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	5	21	4000K	2548lm	5	21	3000K	2370lm
		10	42		5096lm	10	42		4739lm
		14	58		7133lm	14	58		6634lm
upon request	530mA	5	32	4000K	3467lm	5	32	3000K	3224lm
		10	64		6935lm	10	64		6450lm
		14	90		9709lm	14	90		9029lm



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Upon request: possibility to choose different lighting point management systems (see table on p. 419).

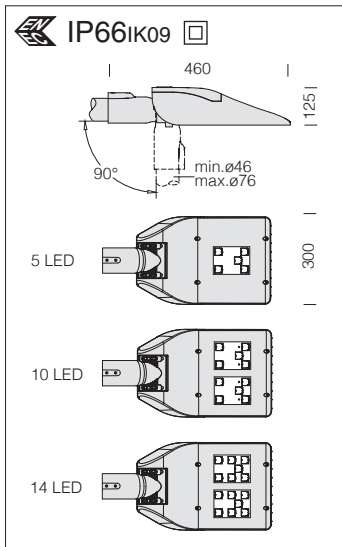


3284 Rolle - T5					
		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.70	330440-00	42	4000K - 4659lm - CRI 70
			330440-39		3000K - 4333lm - CRI 70
LED	grey	7.70	330441-00	85	4000K - 9320lm - CRI 70
			330441-39		3000K - 8668lm - CRI 70
LED	grey	7.70	330442-00	119	4000K - 13049lm - CRI 70
			330442-39		3000K - 12136lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	5	21	4000K	2566lm	5	21	3000K	2386lm
		10	42		5135lm	10	42		4776lm
		14	58		7190lm	14	58		6687lm
upon request	530mA	5	32	4000K	3495lm	5	32	3000K	3250lm
		10	64		6990lm	10	64		6501lm
		14	90		9787lm	14	90		9102lm



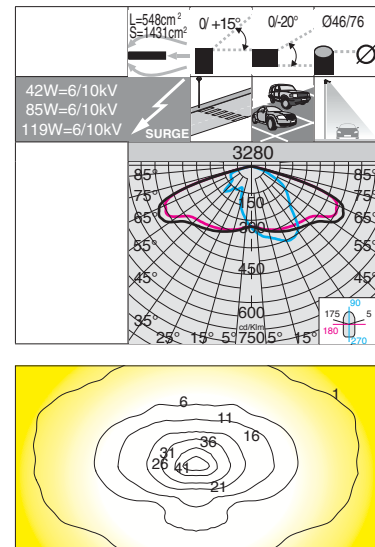




Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

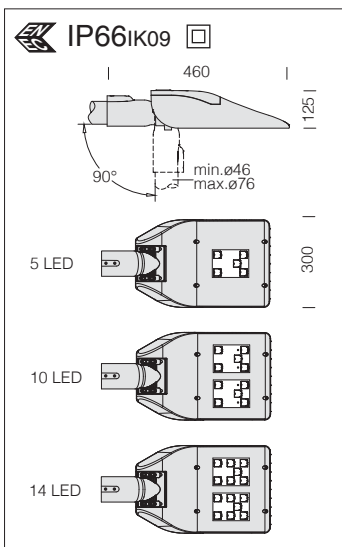
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).

Upon request: possibility to choose different lighting point management systems (see table on p. 419).



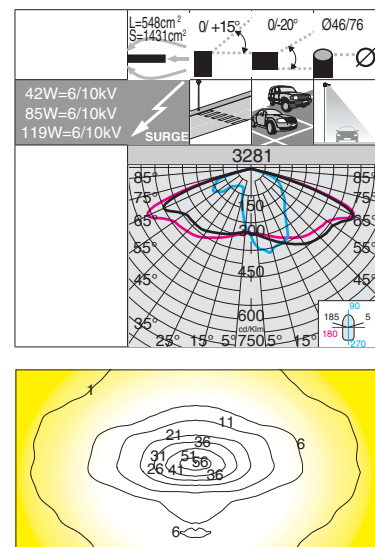
3280 Rolle - T1					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.70	330400-00	42	4000K - 4561lm - CRI 70
			330400-39		3000K - 4242lm - CRI 70
LED	grey	7.70	330401-00	85	4000K - 9122lm - CRI 70
			330401-39		3000K - 8483lm - CRI 70
LED	grey	7.70	330402-00	119	4000K - 12772lm - CRI 70
			330402-39		3000K - 11878lm - CRI 70

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	5	21	4000K	2508lm	5	21	3000K	2332lm
		10	42		5017lm	10	42		4666lm
		14	58		7024lm	14	58		6532lm
upon request	530mA	5	32	4000K	3420lm	5	32	3000K	3181lm
		10	64		6842lm	10	64		6383lm
		14	90		9579lm	14	90		8908lm



Optics: in PMMA, highly resistant to temperature and UV radiation. Flow recovery in V2 polycarbonate.

LED: Power factor ≥ 0.9 .
Luminous flux maintenance 80%:
>100.000h (L80B10).



3281 Rolle - T2					
CLD BASIC				LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	grey	7.70	330410-00	42	4000K - 4613lm - CRI 70
			330410-39		3000K - 4290lm - CRI 70
LED	grey	7.70	330411-00	85	4000K - 9225lm - CRI 70
			330411-39		3000K - 8579lm - CRI 70
LED	grey	7.70	330412-00	119	4000K - 12916lm - CRI 70
			330412-39		3000K - 12012lm - CRI 70

Upon request: possibility to choose different lighting point management systems (see table on p. 419).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	5	21	4000K	2536lm	5	21	3000K	2358lm
		10	42		5074lm	10	42		4719lm
		14	58		7104lm	14	58		6607lm
upon request	530mA	5	32	4000K	3453lm	5	32	3000K	3211lm
		10	64		6906lm	10	64		6423lm
		14	90		9669lm	14	90		8992lm





GENERAL CHARACTERISTICS

Housing: in die-cast aluminium and designed with a very small surface exposed to wind. Cooling fins are integrated into the cover.

Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability.

Pole connection: in die-cast aluminium and with gaskets to secure the frame. Suited for poles with a diameter 45-60mm.

Optics: in PMMA, highly resistant to temperature and UV radiation.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

Equipment: silicone rubber gasket; external screws and bolts in stainless steel; air recirculation valve. Insulation connector for quick installation with **no need to open the fixture**.

OTHER CHARACTERISTICS

Standard supply: automatic temperature control inside the device with automatic resetting. With dedicated electronic device to protect the LED module.



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



The fixture's design is configured to minimise wind exposure surfaces: L=326cm² - S=559cm²



OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Anti-light pollution optical system : the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Susa line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations



UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



Available in olive green colour version.




BASIC PROG (BASIC CLD) AVAILABLE FUNCTIONS

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
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LIGHTING POINT MANAGEMENT OPTIONS ON REQUEST

possibility to choose different lighting point management systems according to the system's needs:

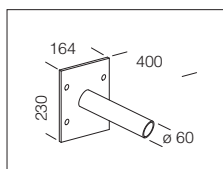
1-10V dimming ordered with sub-code -12		Adjustment range from 10%-100% with 1-10V
 Virtual Midnight order with subcode -30		Stand-alone system with automatic luminous flux reduction in 4 steps . To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system. <i>In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.</i>
Factory settings		ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.
Time	Flux	
on ÷ 22:00	100%	
22:00 ÷ 23:30	75%	
23:30 ÷ 02:30	50%	
02:30 ÷ 04:00	75%	
04:00 ÷ off	100%	
PLC remote control ordered with sub-code -0078		Point-to-point and system management and diagnosis system
For more information see page XVI-XX		

Example with Zhaga Socket
(subcode -0054)

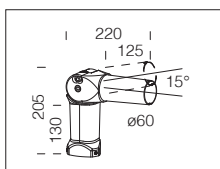


LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

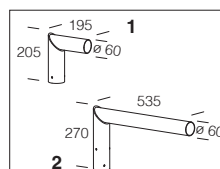
Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	


acc. 248
wall bracket

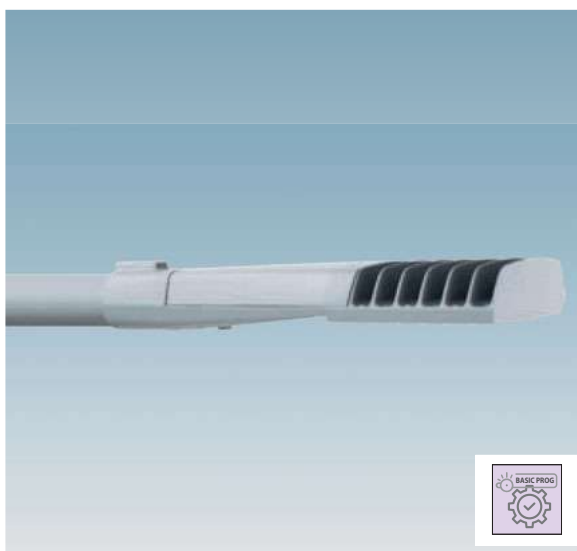
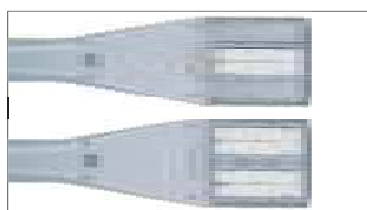
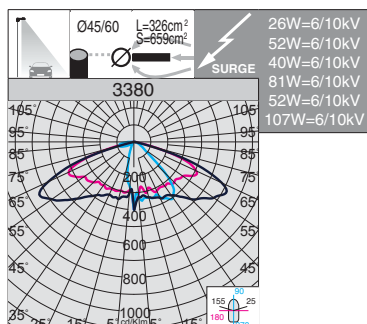
grey 997708-00
In steel. For wall mounting. Connection Ø 60.


acc. 405
articulated connect.

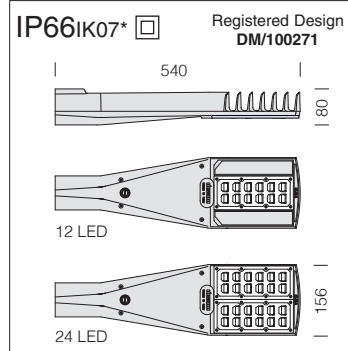
grey 991407-00
To be used for pole installation Ø60. Adjustable connection at 90°.


acc. 205
mast-top mounting

1 galvan. 426941-00
2 grey 426948-00
To be used for pole installation Ø60. 90° fixed.



* Upon request: IK08 version.



LED: power factor ≥0.92.
Luminous flux maintenance:

80%	80.000h (L80B10)	350mA
80%	70.000h (L80B10)	530mA
80%	60.000h (L80B10)	700mA

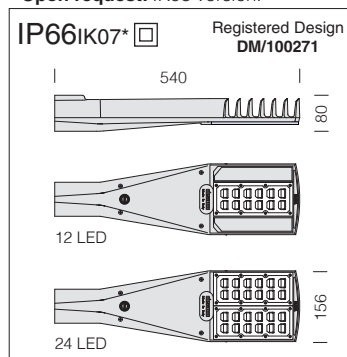
Version best suited for medium-height poles.

Upon request: possibility to choose different lighting point management systems (see table on p. 427).

3380 Susa ME - residential amenities

		CLD BASIC			LUMEN OUTPUT (tq= 25 °C)
wattage (350mA)	colour	weight	code	W tot	K - ø1m 350mA - CRI
LED	grey	2.30	340504-00	26	4000K - 3600lm - CRI 80
			340504-39		3000K - 3348lm - CRI 80
LED	grey	2.50	340505-00	52	4000K - 7385lm - CRI 80
			340505-39		3000K - 6868lm - CRI 80
wattage (530mA)					K - ø1m 530mA - CRI
LED	grey	2.30	340500-00	40	4000K - 5145lm - CRI 80
			340500-39		3000K - 4785lm - CRI 80
LED	grey	2.50	340501-00	81	4000K - 9979lm - CRI 80
			340501-39		3000K - 9280lm - CRI 80
wattage (700mA)					K - ø1m 700mA - CRI
LED	grey	2.30	340502-00	52	4000K - 6372lm - CRI 80
			340502-39		3000K - 5926lm - CRI 80
LED	grey	2.50	340503-00	107	4000K - 12360lm - CRI 80
			340503-39		3000K - 11495lm - CRI 80

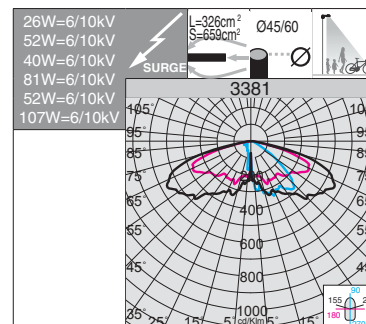
* Upon request: IK08 version.



LED: power factor ≥0.92. Luminous flux maintenance:		
80%	80.000h (L80B10)	350mA
80%	70.000h (L80B10)	530mA
80%	60.000h (L80B10)	700mA

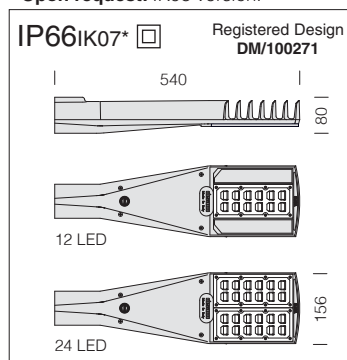
Version best suited for lighting installations where poles are spaced farther apart.

Upon request: possibility to choose different lighting point management systems (see table on p. 427).

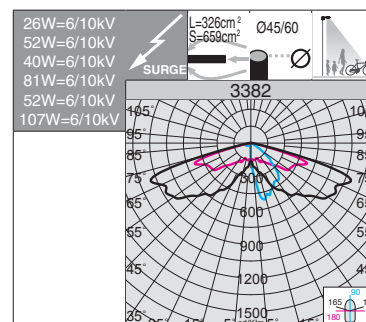
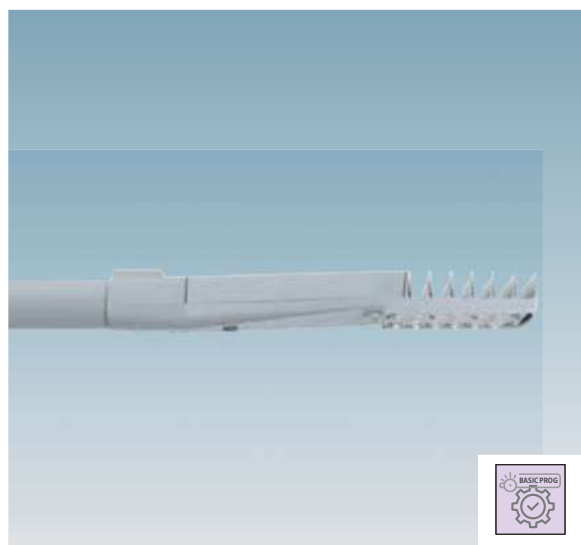


3381 Susa T3 - residential amenities					
			CLD BASIC	LUMEN OUTPUT (tq= 25 °C)	
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	grey	2.30	340514-00	26	4000K - 3780lm - CRI 80
			340514-39		3000K - 3516lm - CRI 80
LED	grey	2.50	340515-00	52	4000K - 7316lm - CRI 80
			340515-39		3000K - 6800lm - CRI 80
wattage (530mA)					K - ølm 530mA - CRI
LED	grey	2.30	340510-00	40	4000K - 5109lm - CRI 80
			340510-39		3000K - 4751lm - CRI 80
LED	grey	2.50	340511-00	81	4000K - 9887lm - CRI 80
			340511-39		3000K - 9195lm - CRI 80
wattage (700mA)					K - ølm 700mA - CRI
LED	grey	2.30	340512-00	52	4000K - 6328lm - CRI 80
			340512-39		3000K - 5885lm - CRI 80
LED	grey	2.50	340513-00	107	4000K - 12246lm - CRI 80
			340513-39		3000K - 11389lm - CRI 80

* Upon request: IK08 version.



LED: power factor ≥0.92. Luminous flux maintenance:		
80%	80.000h (L80B10)	350mA
80%	70.000h (L80B10)	530mA
80%	60.000h (L80B10)	700mA



3382 Susa T2 - cycleways					
			CLD BASIC	LUMEN OUTPUT (tq= 25 °C)	
wattage (350mA)	colour	weight	code	W tot	K - ølm 350mA - CRI
LED	grey	2.30	340524-00	26	4000K - 3770lm - CRI 80
			340524-39		3000K - 3500lm - CRI 80
LED	grey	2.50	340525-00	52	4000K - 7298lm - CRI 80
			340525-39		3000K - 6788lm - CRI 80
wattage (530mA)					K - ølm 530mA - CRI
LED	grey	2.30	340520-00	40	4000K - 5098lm - CRI 80
			340520-39		3000K - 4741lm - CRI 80
LED	grey	2.50	340521-00	81	4000K - 9863lm - CRI 80
			340521-39		3000K - 9173lm - CRI 80
wattage (700mA)					K - ølm 700mA - CRI
LED	grey	2.30	340522-00	52	4000K - 6314lm - CRI 80
			340522-39		3000K - 5872lm - CRI 80
LED	grey	2.50	340523-00	107	4000K - 12217lm - CRI 80
			340523-39		3000K - 11362lm - CRI 80

Upon request: possibility to choose different lighting point management systems (see table on p. 427).





GENERAL CHARACTERISTICS

Housing: pressed in die-cast aluminium with fastening clamp for application of the arms.

Diffuser: tempered glass, 5 mm thick, thermal shock and impact resistant (UNI EN 12150 tests 1/2001).

Optics: made of PMMA with high temperature resistance and UV rays.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Standard supply: automatic temperature control inside the device with automatic resetting; dedicated electronic device to protect the LED module; Complete with quick connection and anti-condensation valve for air recirculation.

OTHER CHARACTERISTICS



Electronic safety device to protect the LED module and the related ballast compliant with EN

61547.

It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.
- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.

Photometric performance: designed with an optical system capable of controlling the potential glare created by the growing light intensity of LEDs while achieving high photometric performance.

OTHER INFORMATION



Product with a very low flicker; uniform light for greater eye protection.

Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Visconti 2.0 line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.



UPON REQUEST



Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

2200K

2200K (subcode -73): lamps with warm amber light at a colour temperature of 2200K eliminate the risks of an excessive exposure to harmful blue LED light and allows a "softer" impact on inhabited zones, especially in historic centres.



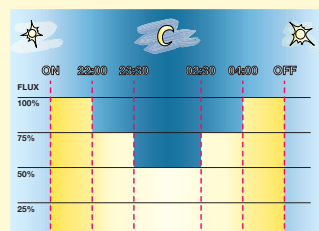
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

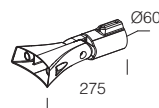
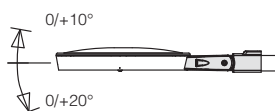
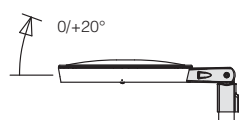
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request

Example with Zhaga Socket
(subcode -0054)



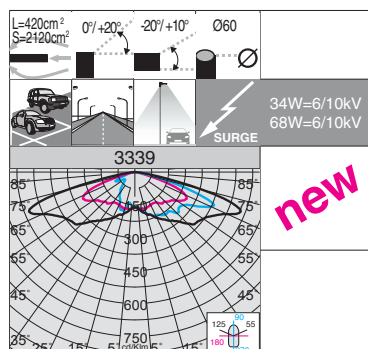
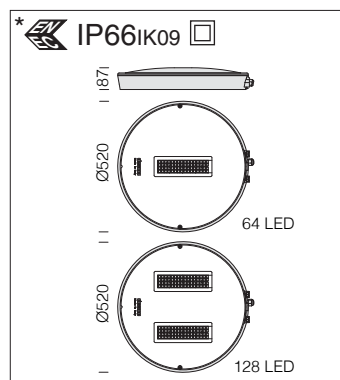
LUMINAIRE DESIGNED FOR INSTALLATION ON NEMA OR ZHAGA SOCKET: to monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Nema Socket order with subcode -40 (sealing cap to be ordered separately)	Mounted directly on the fixture's body, ideal for remote lighting management applications.
Zhaga Socket order with subcode -0054 (complete with sealing cap)	

**acc. 286 adjustable arm**

graphite 991445-00

In die-cast aluminium. For for Ø60mm side-mount applications.

**new**

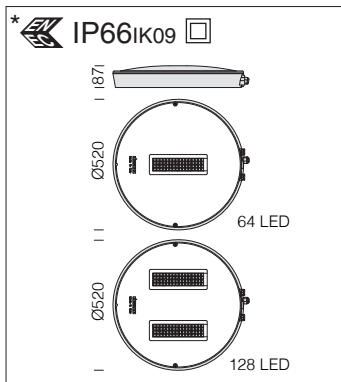
LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).

2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
34	2200K - 5506lm
68	2200K - 10900lm

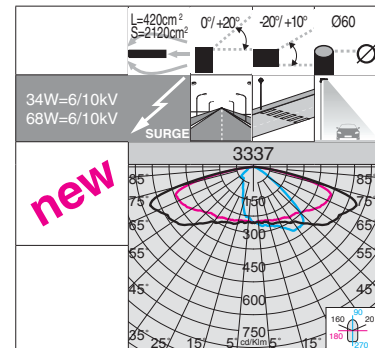
3339 Visconti 2.0 - large areas					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	8.30	328250-00	34	4000K - 4916lm - CRI 70
			328250-39		3000K - 4424lm - CRI 70
LED	graphite	8.30	328251-00	68	4000K - 9732lm - CRI 70
			328251-39		3000K - 8759lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 431).

Example	Power supply	n.LED	W tot	K	ølm	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2606lm	64	16	3000K	2346lm
		128	32		5160lm	128	32		4644lm
upon request	530mA	64	25	4000K	3835lm	64	25	3000K	3452lm
		128	50		7592lm	128	50		6833lm



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



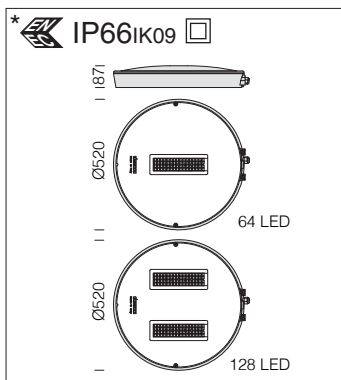
2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
34	2200K - 5711lm
68	2200K - 11117lm

3337 Visconti 2.0 - stradale ME					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	8.30	328210-00	34	4000K - 5099lm - CRI 70
			328210-39		3000K - 4589lm - CRI 70
LED	graphite	8.30	328211-00	68	4000K - 9926lm - CRI 70
			328211-39		3000K - 8933lm - CRI 70

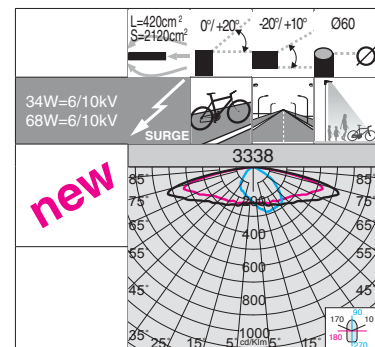
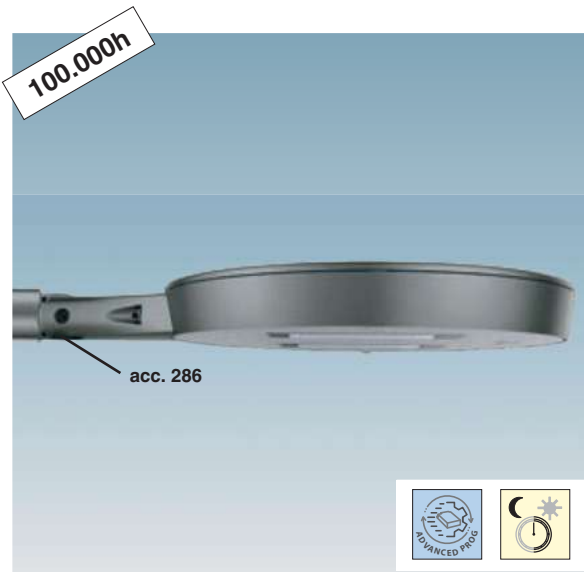
Integrated **ADVANCED PROG** functions (see table on p. 431).

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2703lm
		128	32		5263lm
upon request	530mA	64	25	4000K	3978lm
		128	50		7743lm

n.LED	W tot	K	ølm
64	16	3000K	2433lm
128	32		4736lm
64	25	3000K	3580lm
128	50		6969lm



LED: Power factor ≥ 0.9 .
Luminous flux maintenance 90%:
100.000h (L90B10).



2200K - AMBER (sub-code -73)	
W tot	LUMEN OUTPUT (tq= 25 °C)
34	2200K - 5935lm
68	2200K - 11859lm

3338 Visconti 2.0 - ciclabile					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	8.30	328240-00	34	4000K - 4971lm - CRI 70
			328240-39		3000K - 4474lm - CRI 70
LED	graphite	8.30	328241-00	68	4000K - 9641lm - CRI 70
			328241-39		3000K - 8677lm - CRI 70

Integrated **ADVANCED PROG** functions (see table on p. 431).

Example	Power supply	n.LED	W tot	K	ølm
upon request	350mA	64	16	4000K	2636lm
		128	32		5111lm
upon request	530mA	64	25	4000K	3878lm
		128	50		7521lm

n.LED	W tot	K	ølm
64	16	3000K	2372lm
128	32		4600lm
64	25	3000K	3490lm
128	50		6769lm



GENERAL CHARACTERISTICS

Housing/Frame: in die-cast aluminium.

Diffuser: tempered glass, 5 mm thick, resistant to thermal shock and impacts (UNI EN 12150-1:2001 tests)

Optics: in PMMA, highly resistant to temperature and UV radiation.

Coating: the standard liquid immersion coating consists of a first metal surface pre-treatment stage, a successive epoxy cataphoresis corrosion and salt resistant coating, and a final layer of bi-component acrylic liquid UV-stabilised coating.

Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.



OTHER CHARACTERISTICS

Standard supply: temperature control inside the device with automatic resetting. Supplied with double insulation switch.



Electronic safety device to protect the LED module and the related ballast compliant with EN 61547.

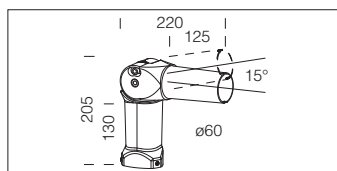
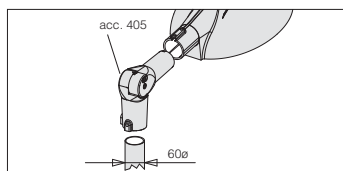
It works in two modes:

- differential mode: surge between power cables and between the phase and neutral.

- common mode: surge between power, L/N and ground cables or between the fixture's body if it is of class II and installed on a metal pole.



Product with a very low flicker; uniform light for greater eye protection.



acc. 405 articulated connect.

grey	991385-00
To be used for Monza pole installation ø 60. Adjustable connection at 90°.	



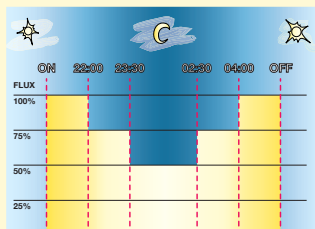
INTEGRATED ADVANCED PROG (PROG CLD) FUNCTIONS: the products of this family are supplied with programmable drivers as standard.

All these functions are already present on standard products and need only to be enabled on request. These functions do not require to make any modification to the system, as the product only needs to be connected to the mains without the use of a control BUS or a pilot cable.

Luminous flux setup	This can be done by programming the drive current values requested when ordering/purchasing the fixture
Virtual Midnight order with subcode -30	Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request)
Broadcast Prog	This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses.
Mains voltage regulation	This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC
CLO (Costant Light Output)	The lighting fixture maintains a constant light output throughout its entire service life
DC power in EM	In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level)
Monitoring (default)	The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on
Setup via APP	The NFC technology allows users to set the different operating modes via an APP
For more information see page XVI-XX	



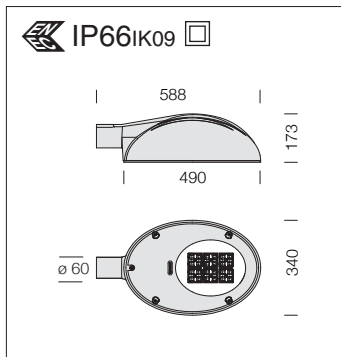
VIRTUAL MIDNIGHT: to increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The device is integrated in the LED driver and therefore does not require any modification to the system. *In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.*



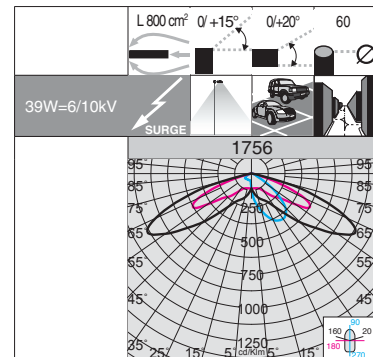
Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

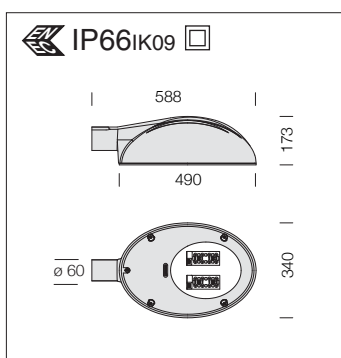
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request



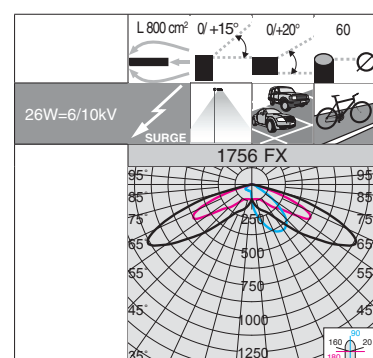
LED: Power factor $\geq 0,9$.
Luminous flux maintenance 80%:
80.000h (L80B20).



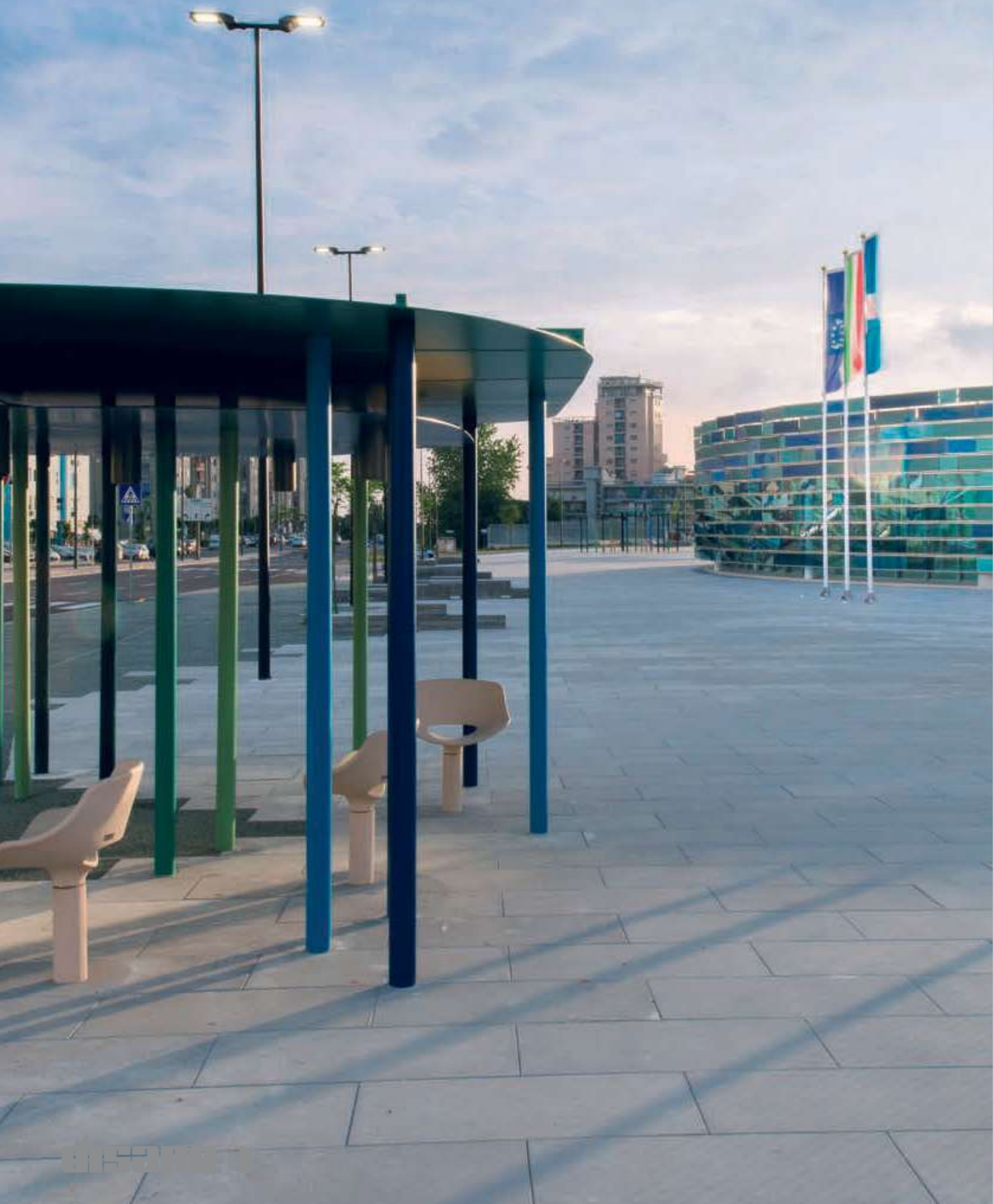
1756 Monza HP - high performance					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	grey 9007	5.50	423066-00	39	4000K - 5580lm - CRI 70
			423066-39		3000K - 5189lm - CRI 70

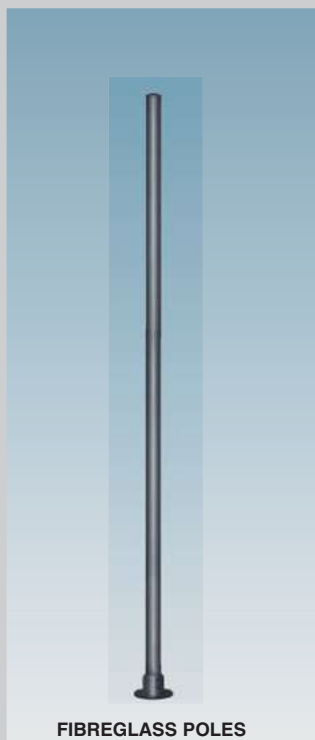


LED: Power factor $\geq 0,9$.
Luminous flux maintenance 80%:
>100.000h (L80B10).



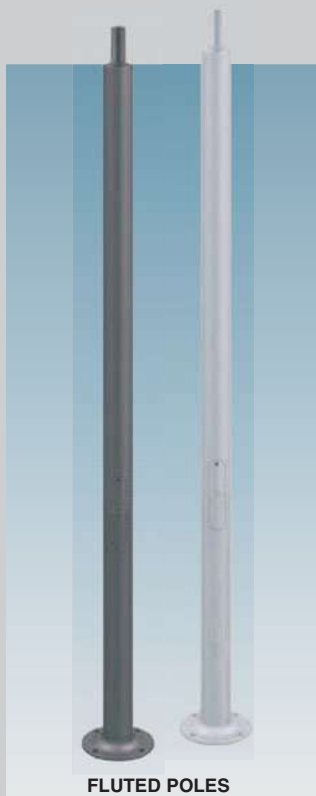
1756 Monza - FX					
		CLD PROG		LUMEN OUTPUT (tq= 25 °C)	
wattage (270mA)	colour	weight	code	W tot	K - ølm 270mA - CRI
LED	grey 9007	5.50	423065-00	26	4000K - 3723lm - CRI 70
			423065-39		3000K - 3462lm - CRI 70





FIBREGLASS POLES

p. 438



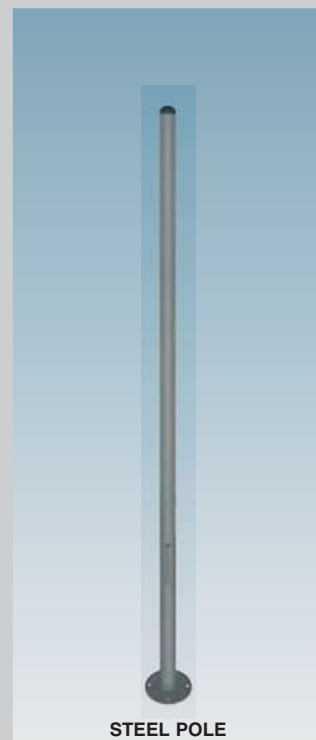
FLUTED POLES

Ø 100 p. 440
Ø 120 p. 442



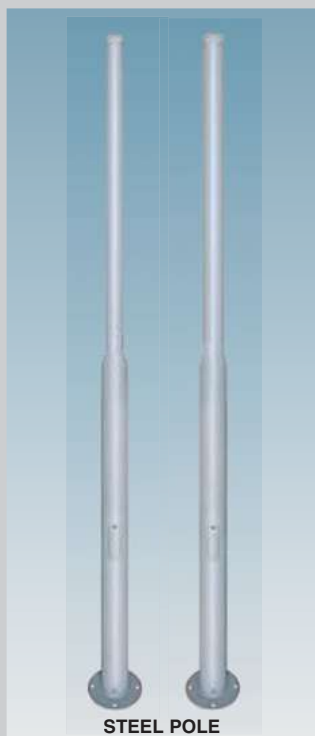
"CONE-SHAPED" - "URBAN" POLE

CONE-SHAPED p. 444
URBAN p. 446



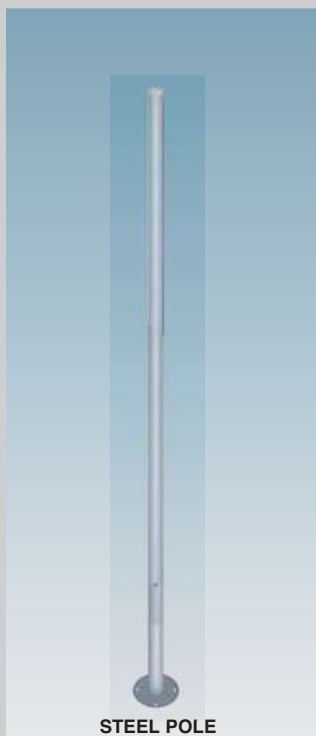
STEEL POLE

Ø 102 p. 448



STEEL POLE

Ø 102 - 159 p. 450
Ø 120 - 159 p. 452



STEEL POLE

Ø 120 p. 454



"LIBERTY" POLE

p. 456



"VIRGOLA" POLE

p. 458



SECTOR
OLIVA

p. 460
p. 461

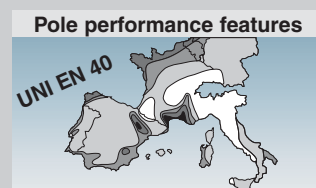


Ø100 Ø120

CORONA Ø 100 p. 462
CORONA Ø 120 p. 463



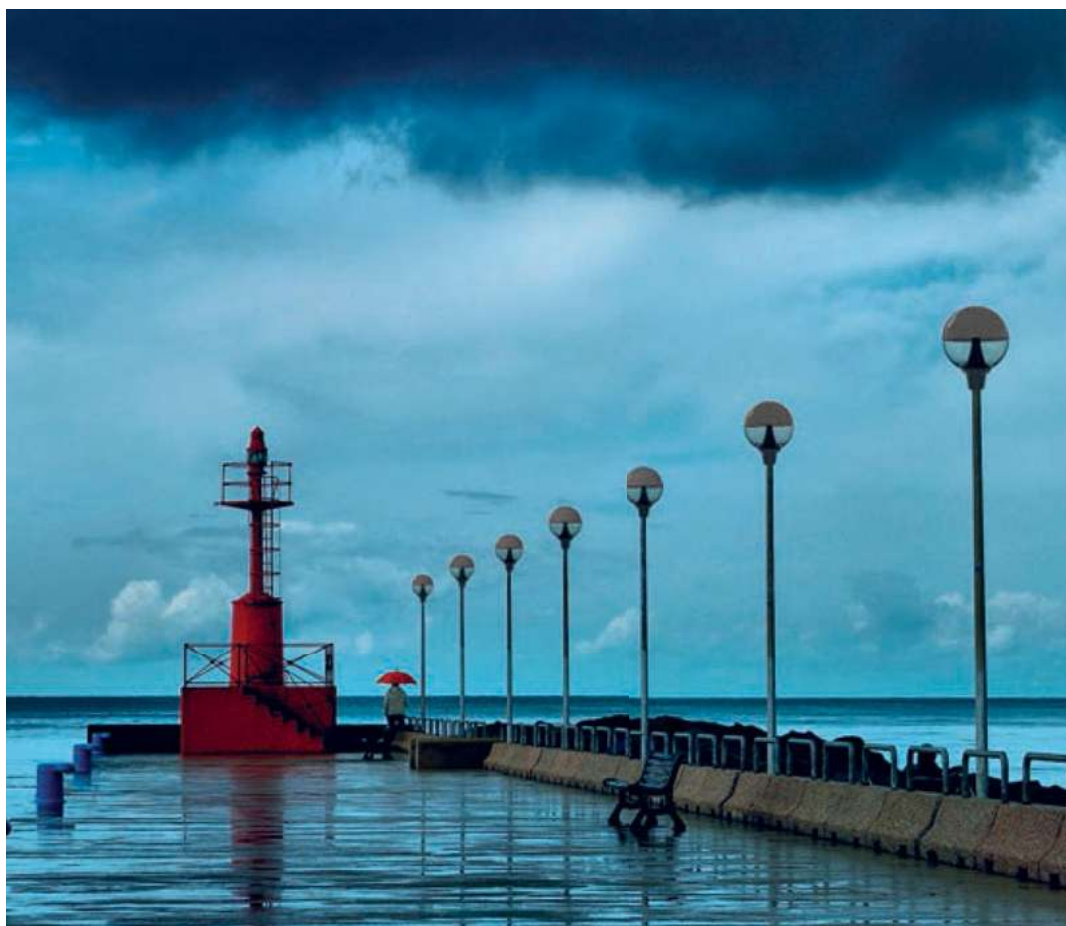
LIONE p. 464
ACCESSORIES p. 465



Pole performance features

UNI EN 40

p. 466



Fibreglass poles have a round or cone-shaped cross-section (dimensions depend on mechanical requirements).

Compared with aluminium or steel poles they offer the following advantages:

- lighter weight
- less maintenance
- surfaces are not attacked by corrosive agents
- electrically insulated
- less dangerous when impact occurs
- extremely flexible in the wind.

Certificated poles: These poles are recommended for small-size luminaires (decorative factor), in private areas, (anti-vandalism factor). They can be installed both on a base or buried according to measurements.

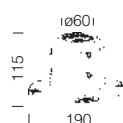
ACCESSORIES



acc. 115 pole cap

black	991331-00
-------	-----------

In fiber glass nylon. To apply to Ø60 mm pole. End cap for the pole top.



acc. 50 base for acc 5

black	991216-00
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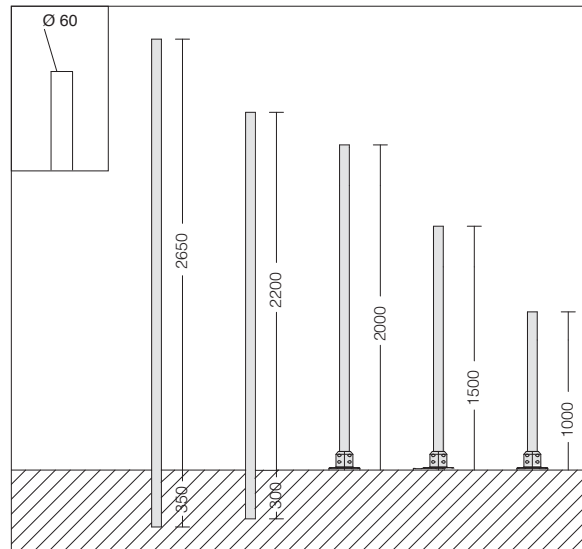
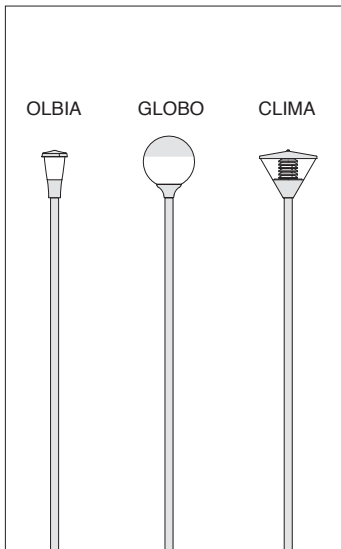
In f.g. nylon; supplied with burying anchor. For use with poles max 1900 high. Connection Ø 60.






Legend Poles pictograms

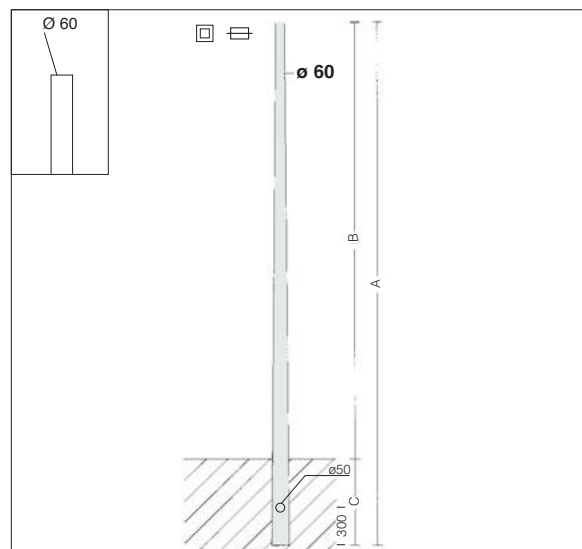
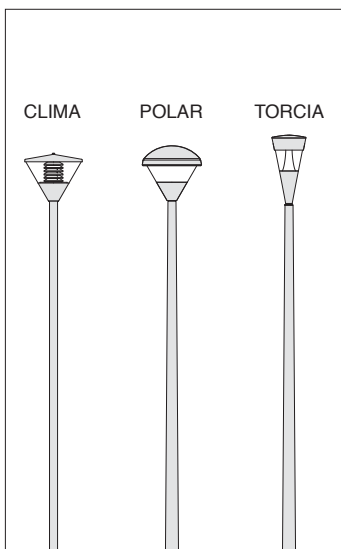
Total height pole	Height above ground or spotlight	Height of pole sunk into the ground	Distance ground/inspection window (if present)	Height of inspection window (if present)	Width of inspection of window (if present)	Diameter of pole in relation to the ground	Diameter head/Pole	Diameter of base and log bolt holes (if present)






Fibreglass poles: table of general features

h pole	diam. Ø	recommended on base	recommended sinking h. mn
1000	Ø 60	acc. 50	
1500	Ø 60	acc. 50	
2000	Ø 60	acc. 50	250
2500	Ø 60		300
3000	Ø 60		350
3600	Ø 60/120		400
4600	Ø 60/137		500
5600	Ø 60/154		600



	acc 5 pole ø 60 without window					
						
colour	code				ø	ø
black	991903-00	1000	800	200	ø 60	ø 60
black	991904-00	1500	1250	250		
black	991905-00	2000	1750	250		
black	991906-00	2500	2200	300		
black	991907-00	3000	2650	350		
Cone-shaped fibreglass pole, black, corrosion resistant, mechanical high-resistance and UV stabilized.						



acc 1278 cone-shaped pole without window						
colour	code					
black	428617-00	3600	3200	400	ø 120	ø 60
black	428618-00	4600	4100	500	ø 137	
black	428619-00	5600	5000	600	ø 154	
Cone-shaped pole in f.g., black, corrosion-proof, high mechanical resistance and UV-stabilised.						

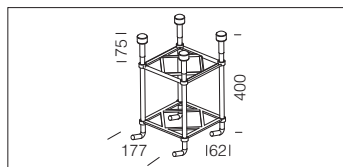
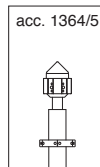
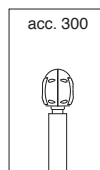
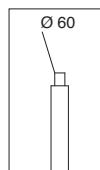
Fluted pole made of extruded aluminium, anodised by 15/20µ thick tin salt electrocoating; graphite or natural oxidised colour.

With die-cast inspection window (186x45mm), protective fuse holder, 16A fuse, 4-pole/3-way removable terminal block = 10 sqmm, 2,5 sqmm connection. With hole for insertion of power supply cable. Die-cast aluminium adapter, Ø60 mm. For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased.

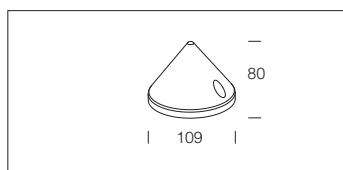
Standard insulation class II.

When using Insulation Class I fixtures, appropriate grounding connections should be included in the system.

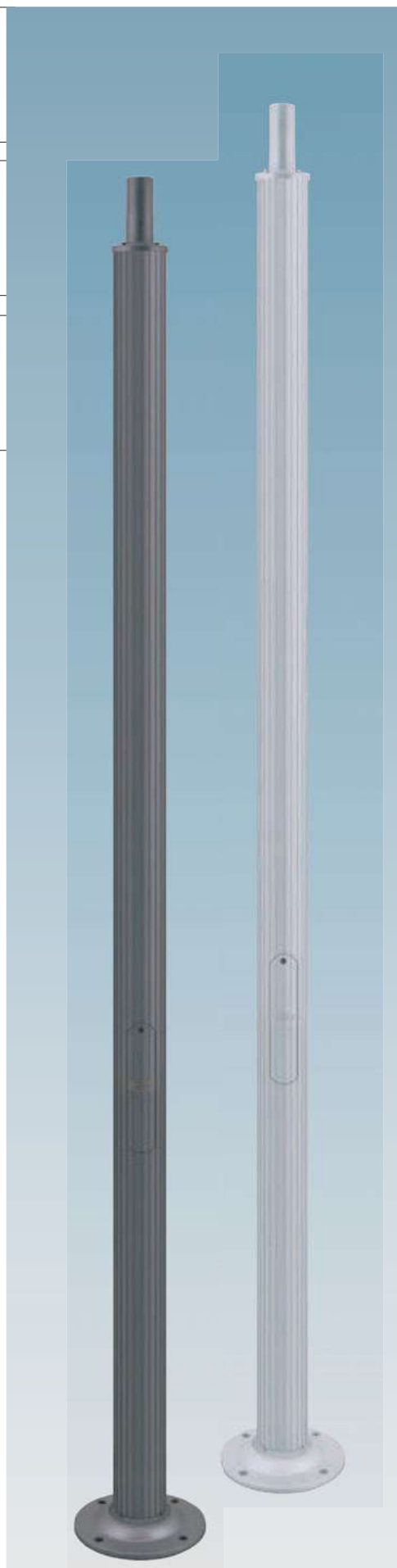
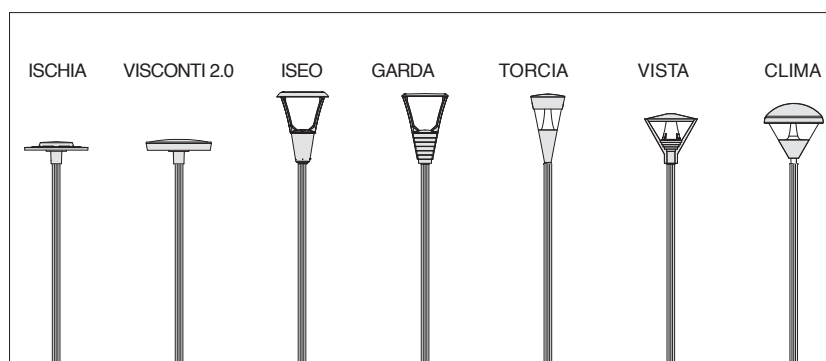
NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1

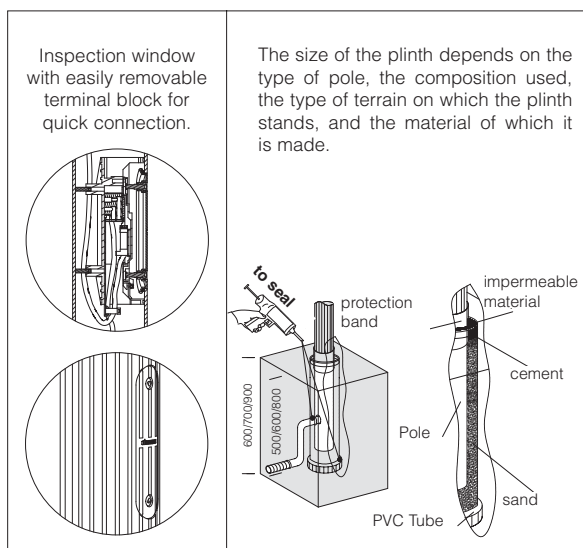
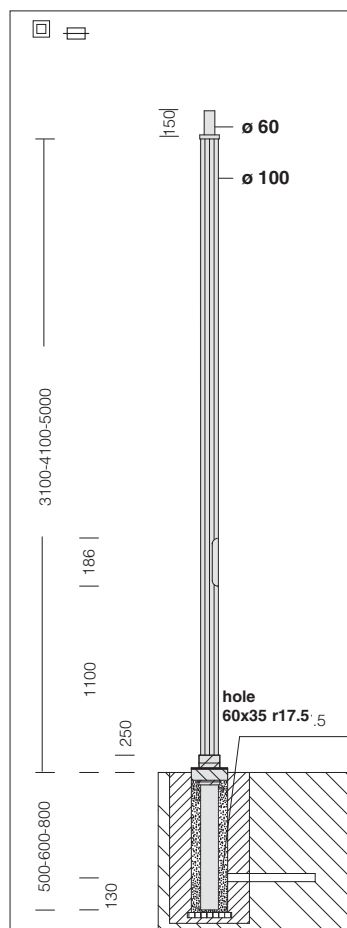


acc. 299 log bolts	
991396-00	
Log bolts are to be always bought with the pole 1408.	

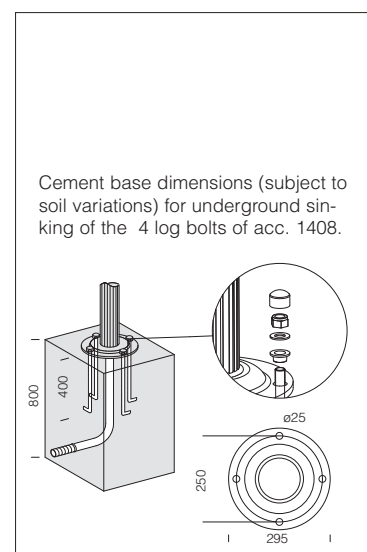
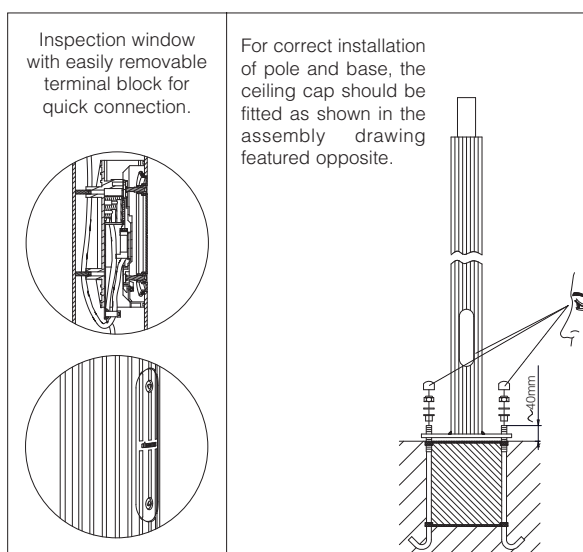
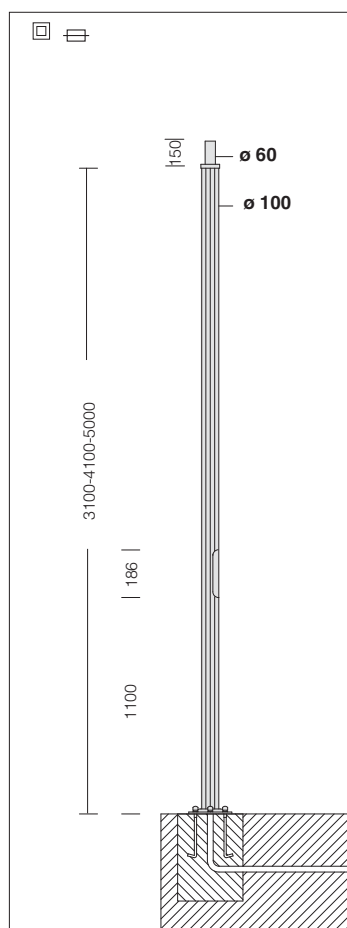


acc. 367 cover for poles	
ox. nat.	426998-00
graphite	426997-00
Made of aluminium. To be used when a particular aesthetic finish is desired.	





acc. 1409 fluted pole Ø 100									
colour	code	3600	3100	500	1100	186	45	Ø 100	Ø 60
oxy natural	426334-00	3600	3100	500					
oxy natural	426335-00	4700	4100	600					
oxy natural	426336-00	5800	5000	800					
graphite	426327-00	3600	3100	500					
graphite	426328-00	4700	4100	600					
graphite	426329-00	5800	5000	800					



acc. 1408 fluted pole with base Ø 100									
colour	code	3100	4100	5000	1100	186	45	Ø 100	Ø 60
oxy natural	426337-00	3100							
oxy natural	426338-00	4100							
oxy natural	426339-00	5000							
graphite	426324-00	3100							
graphite	426325-00	4100							
graphite	426326-00	5000							

Log bolts are to be bought separately acc. 299.

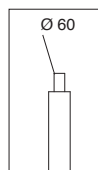
Fluted pole made of extruded aluminium, anodised by 15/20µ thick tin salt electrocoating; graphite or natural oxidised colour.

With die-cast inspection window (186x45mm), protective fuse holder, 16A fuse, 4-pole/3-way=10mm², derivation 2,5 sqmm, removable terminal block = 6 sqmm, 4 sqmm connection. With hole for insertion of power supply cable. Die-cast aluminium adapter, Ø60 mm.

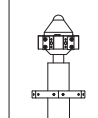
For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased. Standard insulation class II.

When using Insulation Class I fixtures, appropriate earthing connections should be included in the system.

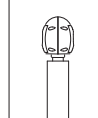
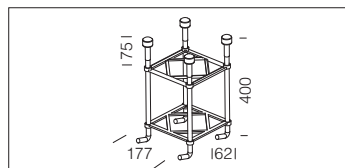
NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1



acc. 1464/5

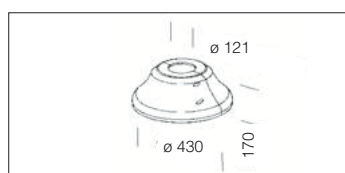


acc. 300

acc. 151
+ acc. 471acc. 211
+ acc. 471**acc. 299 log bolts**

991396-00

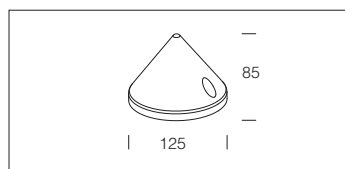
Log bolts are to be always used with the pole 1508.

**acc. 222 base pole cover**

grey 991378-00

graphite 991381-00

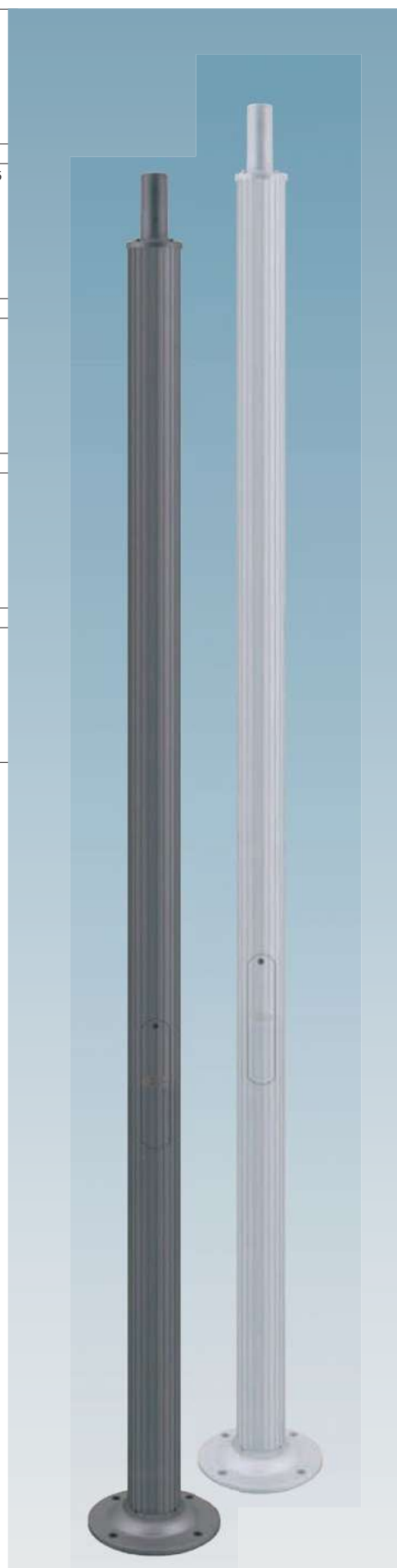
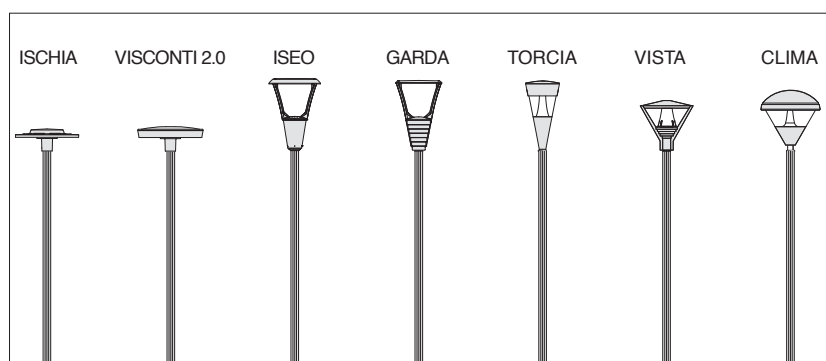
Made of die-cast aluminium. To be used as base pole cover acc. 1508.

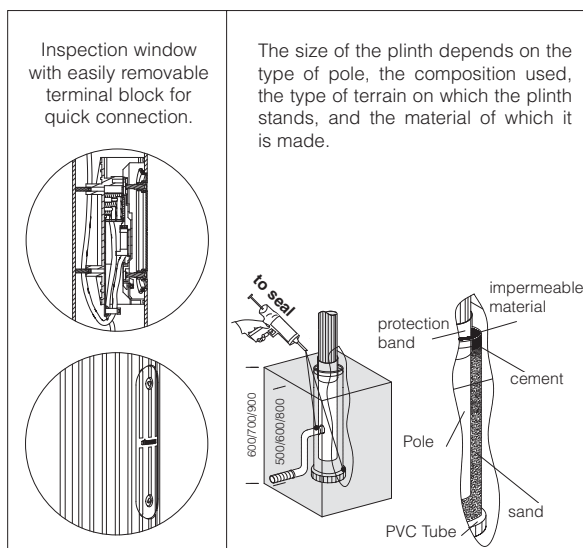
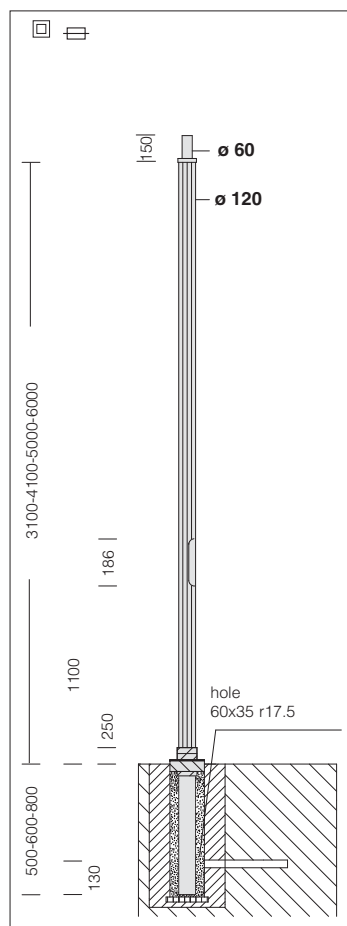
**acc. 471 acc. 367 cover for poles**

grey 991461-00

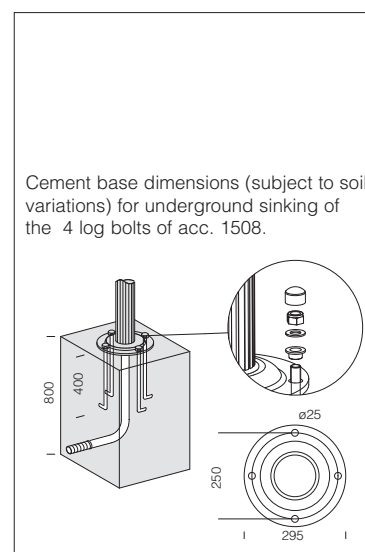
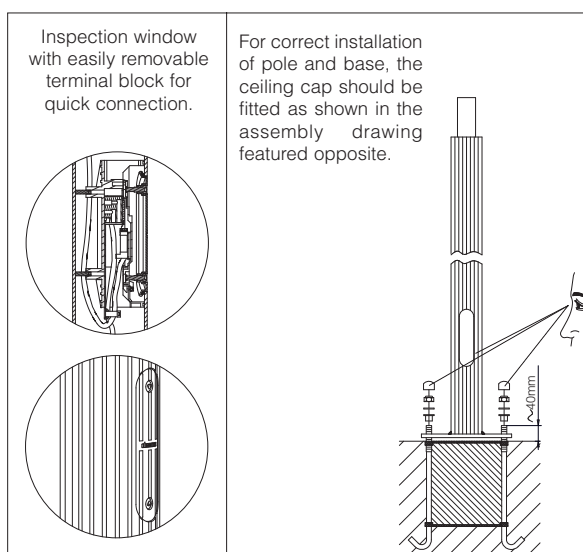
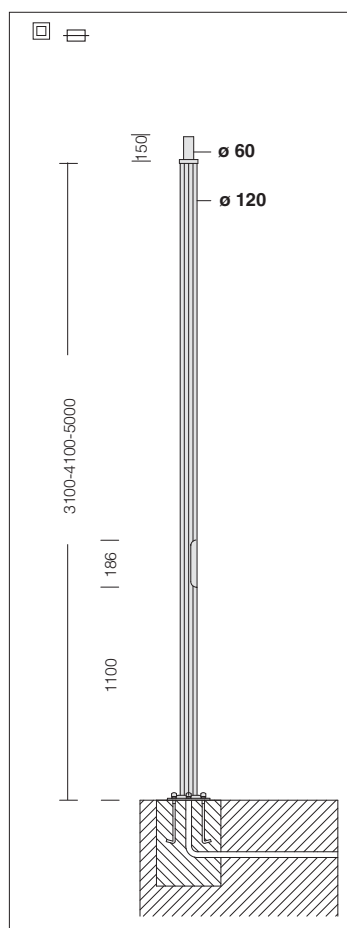
graphite 991462-00

Made of aluminium. To be used when a particular aesthetic finish is desired.





acc. 1509 fluted pole Ø 120									
colour	code	3600	3100	500	4700	4100	600	5800	5000
oxy natural	426374-00	3600	3100	500	4700	4100	600	5800	5000
oxy natural	426375-00	4700	4100	600	5800	5000	800	6800	6000
oxy natural	426376-00	5800	5000	800	6800	6000	800	graphite	426366-00
oxy natural	426373-00	6800	6000	800	graphite	426367-00	3600	3100	500
graphite	426366-00	3600	3100	500	graphite	426367-00	4700	4100	600
graphite	426367-00	4700	4100	600	graphite	426368-00	5800	5000	800
graphite	426368-00	5800	5000	800	graphite	426369-00	6800	6000	800
graphite	426369-00	6800	6000	800					



acc. 1508 fluted pole with base Ø 120									
colour	code	3100	4100	5000	3100	4100	5000	3100	4100
oxy natural	426377-00	3100	4100	5000	3100	4100	5000	3100	4100
oxy natural	426378-00	4100	5000	800	oxy natural	426379-00	5000	3100	4100
oxy natural	426379-00	5000	3100	4100	graphite	426363-00	4100	5000	800
graphite	426362-00	3100	4100	5000	graphite	426363-00	4100	5000	800
graphite	426363-00	4100	5000	800	graphite	426364-00	5000		
graphite	426364-00	5000							

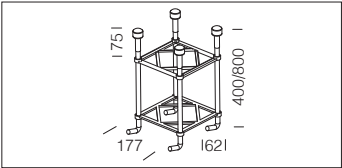
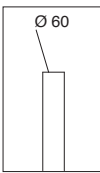
Log bolts are to be bought separately acc. 299.

Tapered steel lighting pole. With hole for insertion of power supply cable, pole-head connection, Ø60.

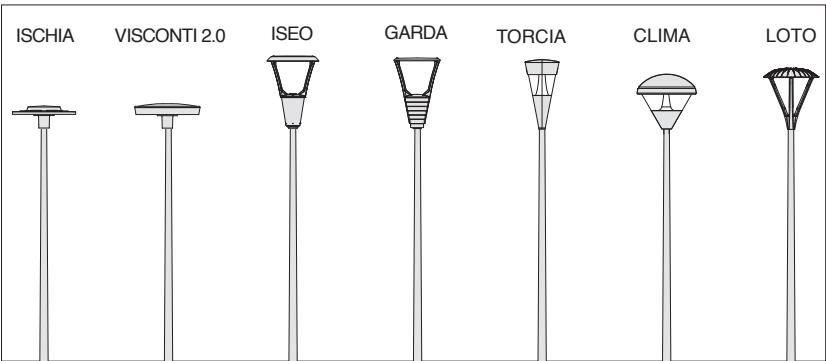
For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased. Size of inspection window 38x132 (h 3 000) - 45x186 (h 4000-5000-6000-7000-8000), supplied with protection fuse holder, 2 fuses, 16A, removable terminal block, 4 poles/3 holes = 10sqmm and shunt 2,5sqmm.

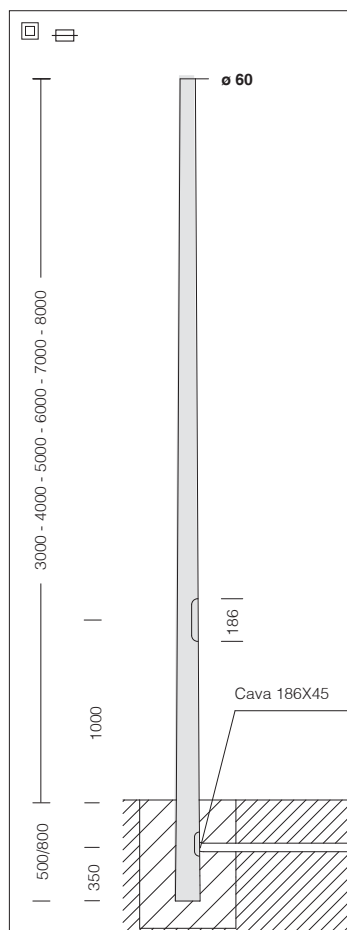
Standard insulation class II. When using Insulation Class I fixtures, appropriate grounding connections should be included in the system.

NOTE: The possibility to attach an assembly to the pole is subject to a wind pressure resistance assessment in the areas regulated by CNR-UNI standard 10032-67, according to load assumptions in UNI standard 40/6.



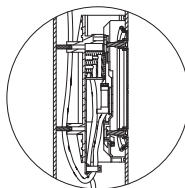
acc. 299 log bolts	
h=3000/4000/5000/6000	991396-00
h=7000/8000	991314-00
Log bolts are to be always used with the pole 1480.	



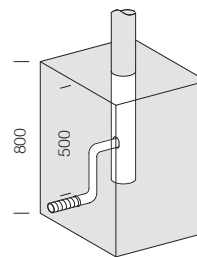


ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
pearl, blue, RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

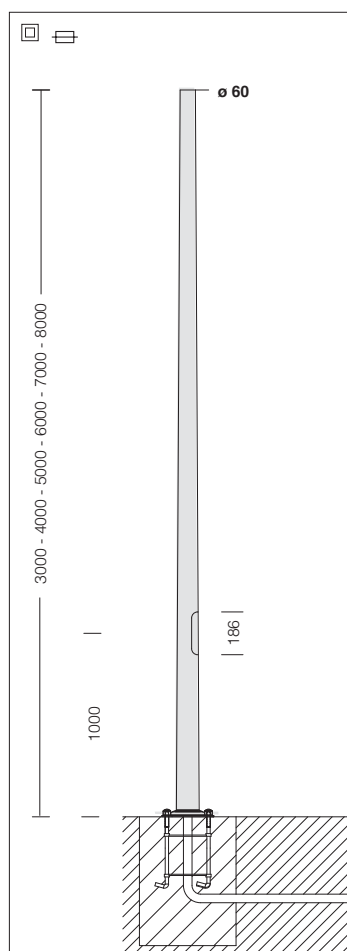


Concrete base dimensions (subject to soil variations).



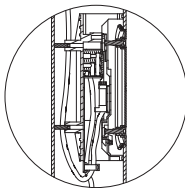
acc. 1481 - steel cone-shaped to be buried-with window

colour	code								
grey	425150-00	3500	3000	500	1000	186	45	Ø 89	Ø 60
grey	425151-00	4500	4000	500				Ø 89	
grey	425152-00	5500	5000	500				Ø 102	
grey	425153-00	6800	6000	800				Ø 127	
grey	425158-00	7800	7000	800				Ø 127	
grey	425167-00	8800	8000	800				Ø 139	
graphite	425154-00	3500	3000	500				Ø 89	
graphite	425155-00	4500	4000	500				Ø 89	
graphite	425156-00	5500	5000	500				Ø 102	
graphite	425157-00	6800	6000	800				Ø 127	
graphite	425159-00	7800	7000	800				Ø 127	
graphite	425168-00	8800	8000	800				Ø 139	
anthracite	425160-00	3500	3000	500				Ø 89	
anthracite	425161-00	4500	4000	500				Ø 89	
anthracite	425162-00	5500	5000	500				Ø 102	
anthracite	425163-00	6800	6000	800				Ø 127	
anthracite	425164-00	7800	7000	800				Ø 127	
anthracite	425165-00	8800	8000	800				Ø 139	

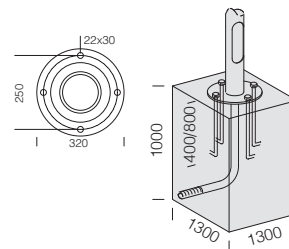


ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
pearl, blue, RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.



Concrete base dimensions (subject to soil variations).



acc. 1480 - steel cone-shaped with base-with window

colour	code								
grey	425050-00	3000	1000	186	45	Ø 89	Ø 60	Ø 320 hole Ø 22x30	
grey	425051-00	4000				Ø 89			
grey	425052-00	5000				Ø 102			
grey	425053-00	6000				Ø 127			
grey	425058-00	7000				Ø 127			
grey	425067-00	8000				Ø 139			
graphite	425054-00	3000				Ø 89			
graphite	425055-00	4000				Ø 89			
graphite	425056-00	5000				Ø 102			
graphite	425057-00	6000				Ø 127			
graphite	425059-00	7000				Ø 127			
graphite	425068-00	8000				Ø 139			
anthracite	425086-00	3000				Ø 89			
anthracite	425087-00	4000				Ø 89			
anthracite	425088-00	5000				Ø 102			
anthracite	425089-00	6000				Ø 127			
anthracite	425072-00	7000				Ø 127			
anthracite	425073-00	8000				Ø 139			

Log bolts are to be bought separately acc. 299.

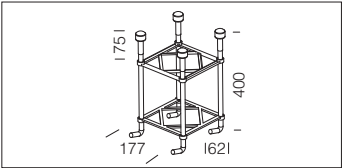
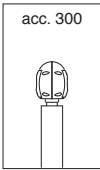
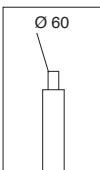


Tapered steel lighting pole. With hole for insertion of power supply cable, pole-head connection, Ø60.

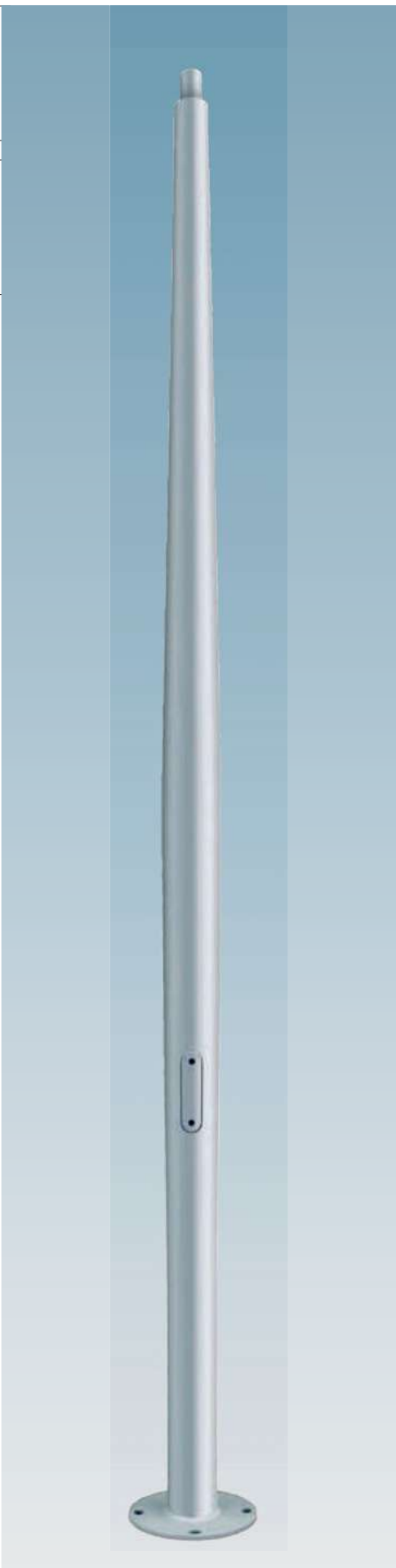
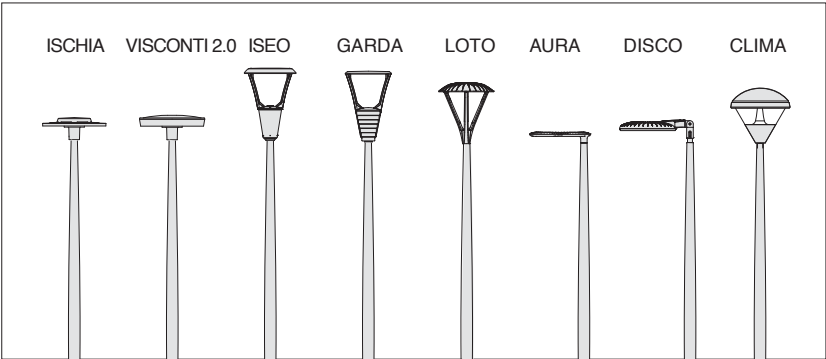
For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased. Size of inspection window 38x132 (h 3 000) - 45x186 (h 4000-5000-6000), supplied with protection fuse holder, 2 fuses, 16A, removable terminal block, 4 poles/3 holes = 6sqmm and shunt 4sqmm.

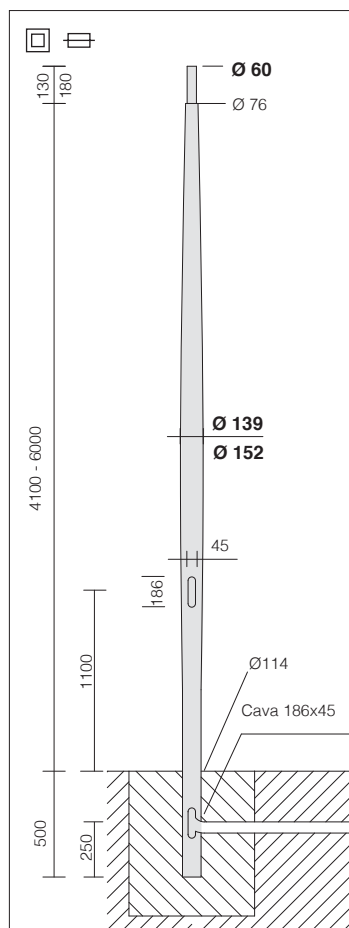
Standard insulation class II. When using Insulation Class I fixtures, appropriate grounding connections should be included in the system.

NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1

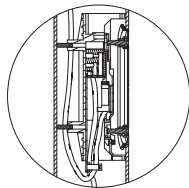


acc. 299 log bolts	
	991396-00
Log bolts are to be always used with the pole 1477.	

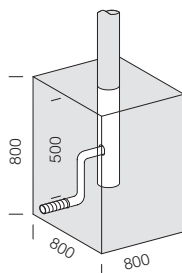




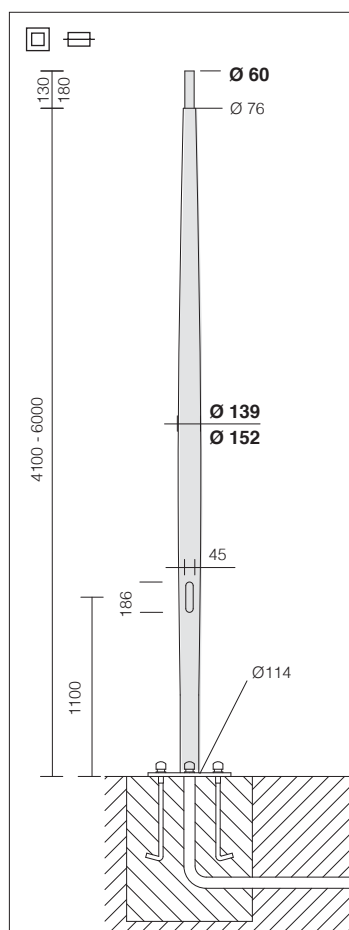
Inspection door with easily removable terminal board for quick connection.



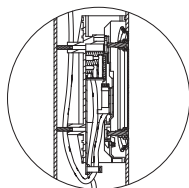
Concrete base dimensions (subject to soil variations).



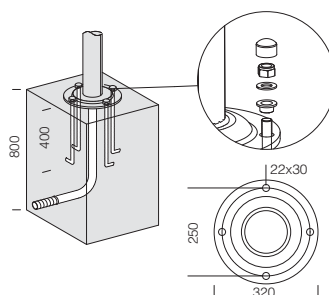
acc. 1478 - pole Urban to be buried								
colour	code	4600	4100	500	1100	186	45	Ø 114
grey	425370-00	4600	4100	500	1100	186	45	Ø 114
graphite	425371-00	4600	4100	500				Ø 60
grey	425373-00	6500	6000	500				
graphite	425374-00	6500	6000	500				










Inspection door with easily removable terminal board for quick connection.



Concrete base dimensions (subject to soil variations).



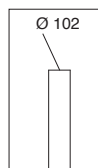
acc. 1477 - pole Urban with base								
colour	code							
grey	425360-00	4100	1100	186	45	Ø 114	Ø 60	ø320 22x30
graphite	425361-00	4100						
grey	425363-00	6000						
graphite	425364-00	6000						

Log bolts are to be bought separately acc. 299.

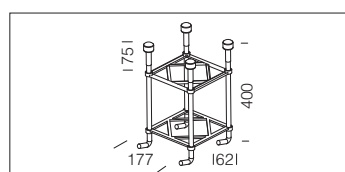
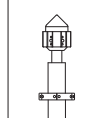
Log bolts are to be bought separately acc. 299.

Steel pole ø 102. With die-cast aluminium inspection window (186x45mm), complete with 2 protection fuse holders, 2 fuses, 16A, removable 4-pole terminal block. With hole for insertion of power supply cable. For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased.

NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1



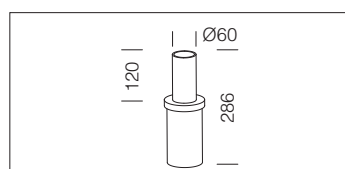
acc. 1364/5
+ acc. 528



acc. 299 log bolts

h=5000	991396-00
h=7000	991314-00

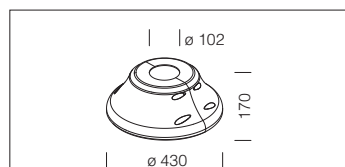
Log bolts are to be always used with the pole 1485.



acc. 528 mast-top adapter

graphite	991463-00
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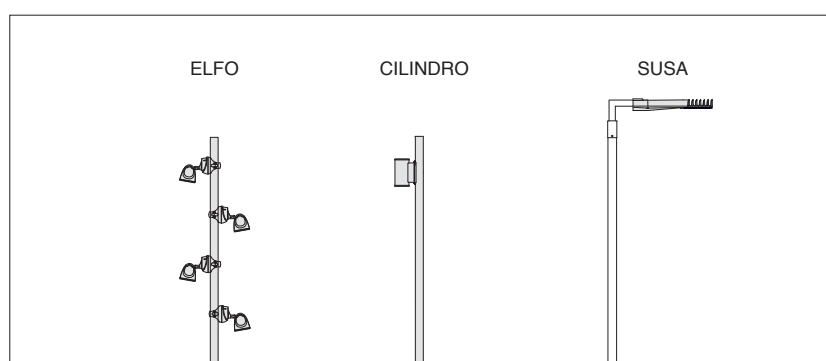
It enables the installation of fixtures on top of poles in single-lamps configurations.

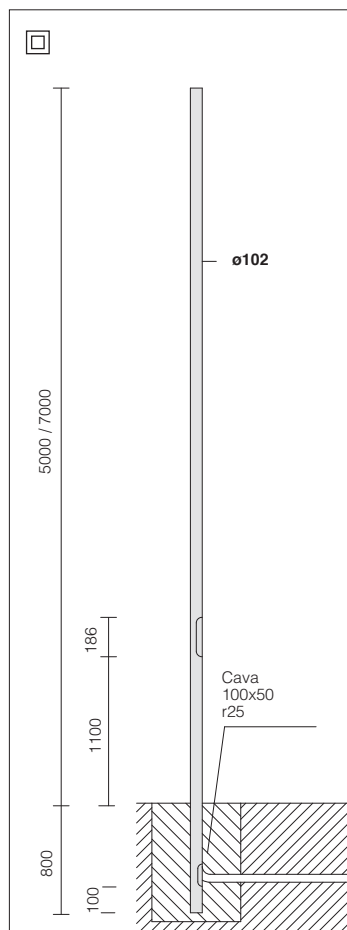


acc. 222 base pole cover

graphite	991315-00
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To be used as base pole cover acc. 1485/1487





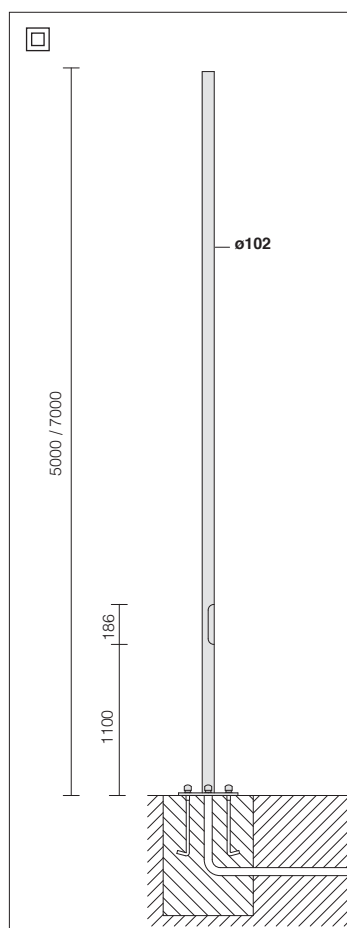
ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

Concrete base dimensions (subject to soil variations)



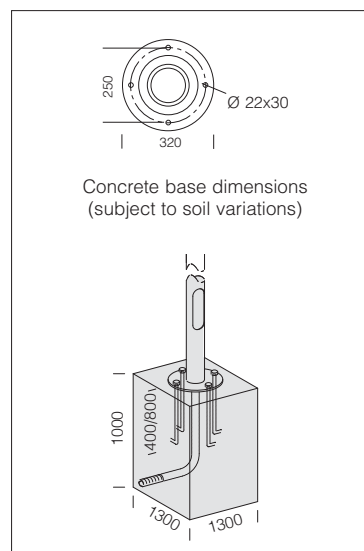
acc. 1487 steel pole to be buried									
colour	code								
graphite	425064-00	5800	5000	800	1100	186	45	Ø 102	Ø 102
graphite	425065-00	7800	7000	800					



ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

For correct installation of pole and base, the ceiling cap should be fitted as shown in the assembly drawing featured opposite.

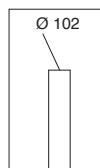


acc. 1485 steel pole with base									
colour	code								
graphite	425074-00	5000	1100	186	45	Ø 102	Ø 102	Ø 320	hole Ø 22x30
graphite	425075-00	7000							

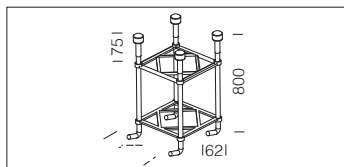
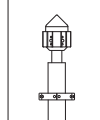
Log bolts are to be bought separately acc. 299.

Steel pole Ø 102-159. With die-cast aluminium inspection window (186x45mm), complete with 2 protection fuse holders, 2 fuses, 16A, removable 4-pole terminal block. With hole for insertion of power supply cable. For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased.

NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1



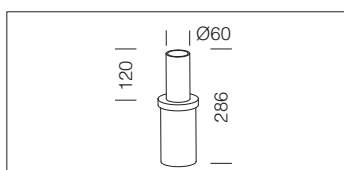
acc. 1364/5
+ acc. 528



acc. 299 log bolts

991314-00

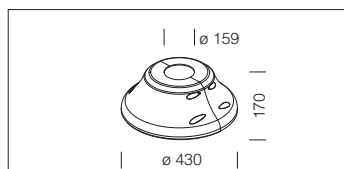
Log bolts are to be always used with the pole 1417.



acc. 528 mast-top connection

graphite 991463-00

In galvanised steel. To be used as a mast-top connection

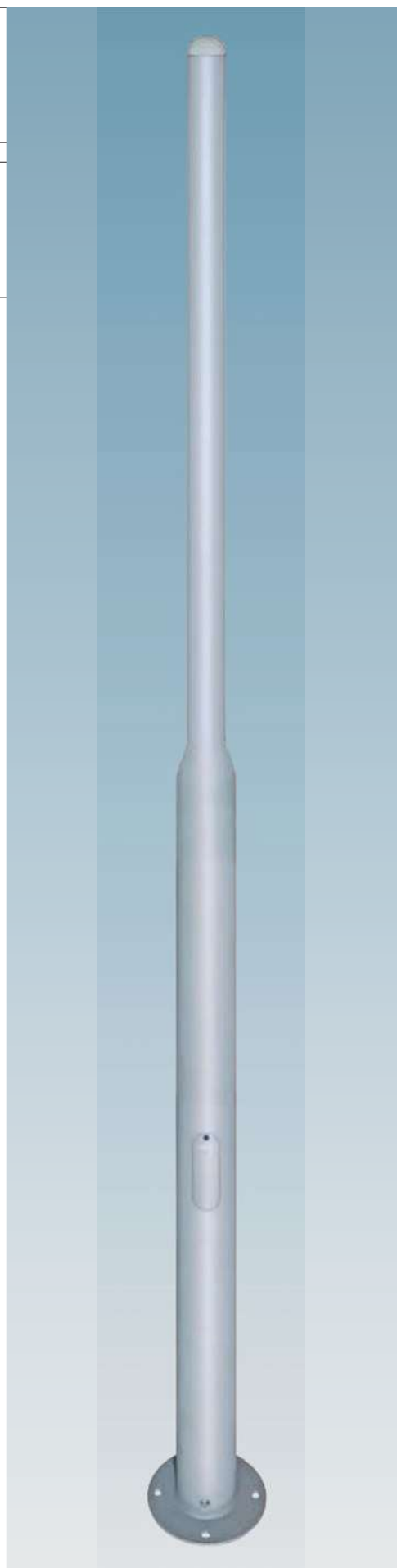


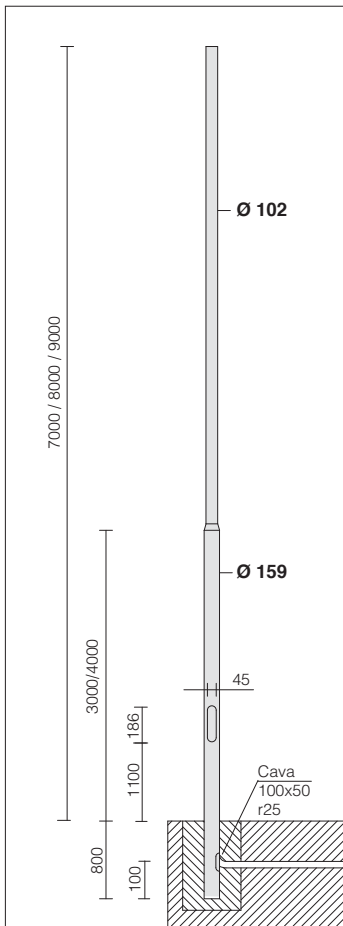
acc. 223 base pole cover

grey 991333-00

graphite 991320-00

To be used as base pole cover acc. 1417/1418.





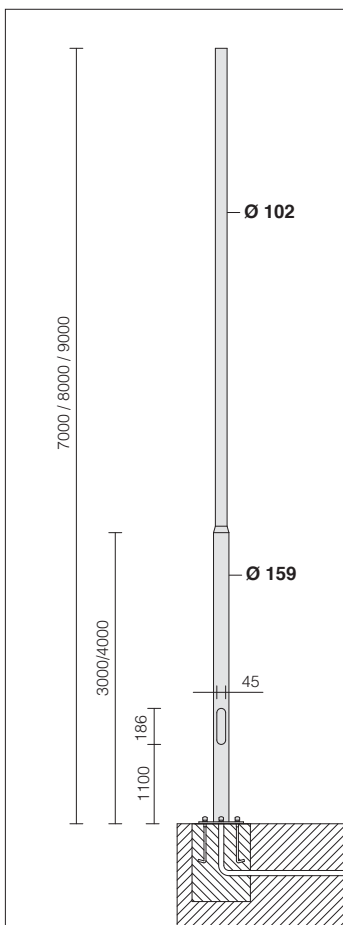
ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

Concrete base dimensions (subject to soil variations)



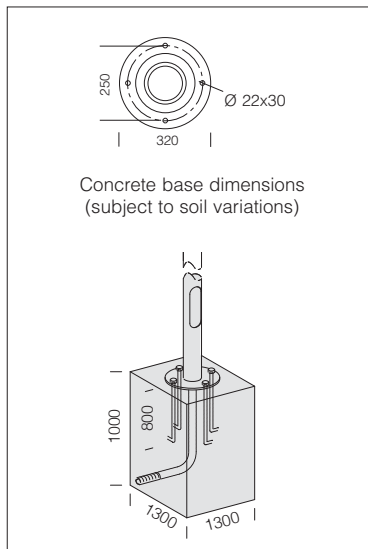
acc. 1418 steel pole to be buried									
colour	code								
grey	426770-00	7800	7000	800	1100	186	45	Ø 159	Ø 102
graphite	426771-00	7800	7000	800	1100				
grey	426772-00	8800	8000	800	1100				
graphite	426773-00	8800	8000	800	1100				
grey	426774-00	9800	9000	800	1100				
graphite	426775-00	9800	9000	800	1100				



ON REQUEST
Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

For correct installation of pole and base, the ceiling cap should be fitted as shown in the assembly drawing featured opposite.



acc. 1417 steel pole with base									
colour	code								
grey	426760-00	7000	1100	186	45	Ø 159	Ø 102	Ø 320 hole Ø 22x30	
graphite	426761-00	7000	1100						
grey	426762-00	8000	1100						
graphite	426763-00	8000	1100						
grey	426764-00	9000	1100						
graphite	426765-00	9000	1100						

Log bolts are to be bought separately acc. 299.

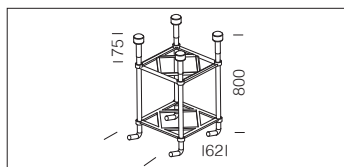


Hot-dip galvanised steel poles.

With die-cast inspection window (186x45mm), 2 protection fuse holders, 2 fuses, 16A, 4-pole/3-way removable terminal block = 10 sqmm, 2,5 sqmm connection. With hole for insertion of power supply cable. For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased. Standard insulation class II.

When using Insulation Class I fixtures, appropriate grounding connections should be included in the system.

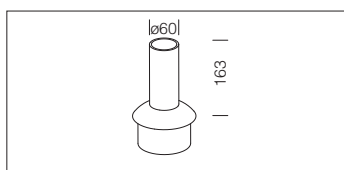
NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1



acc. 299 log bolts

991396-00

Log bolts are to be always bought with the pole 1415.

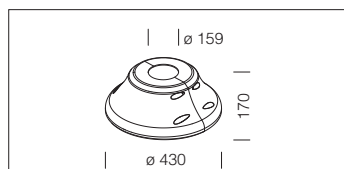


acc. 368 mast-top-pole connec.

grey 427002-00

graphite 427003-00

In galvanized steel. To be used as a mast-top-pole connection on poles acc. 1415/1416.



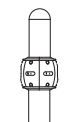
acc. 223 base pole cover

grey 991333-00

graphite 991320-00

To be used as base pole cover acc. 1415/1416.

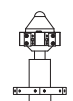
acc. 211



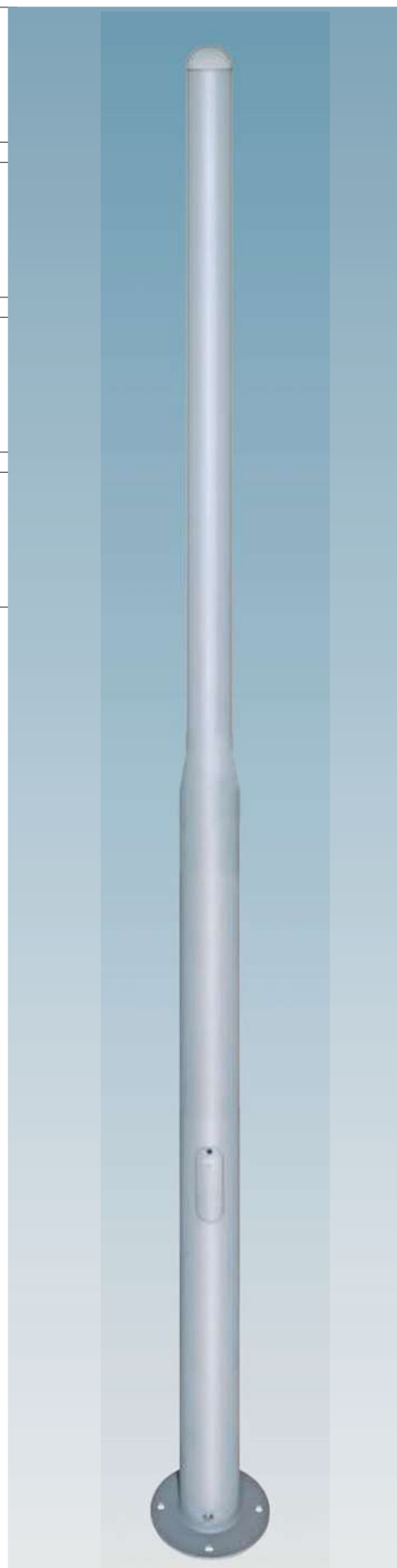
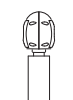
acc. 151

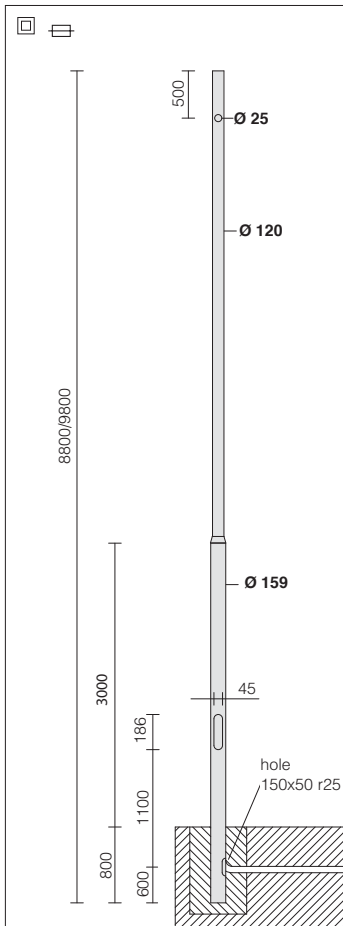


acc.1464/5
+ acc. 368



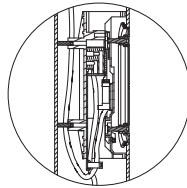
acc. 300
+ acc. 368



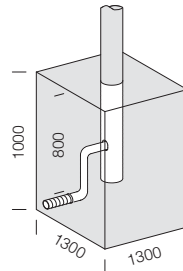
**ON REQUEST**

Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

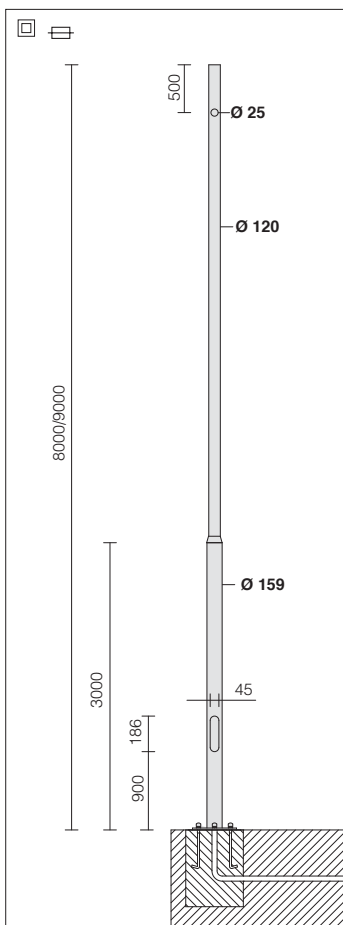
Inspection door with easily removable terminal board for quick connection.



Concrete base dimensions (subject to soil variations)

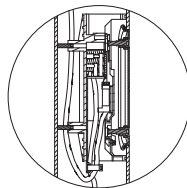
**acc. 1416 steel pole to be buried**

colour	code								
grey	426750-00	8800	8000	800	1100	186	45	Ø 159	Ø 121
graphite	426751-00	8800	8000	800					
grey	426752-00	9800	9000	800					
graphite	426753-00	9800	9000	800					

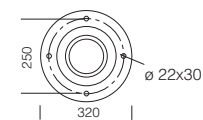
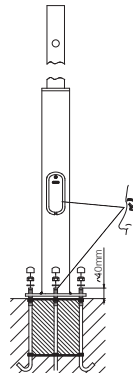
**ON REQUEST**

Possibility of supplying poles with the following colour paint finishes:
RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 9006, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

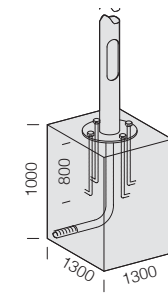
Inspection door with easily removable terminal board for quick connection.



For correct installation of pole and base, the ceiling cap should be fitted as shown in the assembly drawing featured opposite



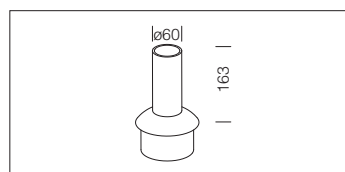
Concrete base dimensions (subject to soil variations)

**acc. 1415 steel pole with base**

colour	code								
grey	426740-00	8000	1100	186	45	Ø 159	Ø 121	Ø 320 hole Ø 22x30	
graphite	426741-00	8000							
grey	426742-00	9000							
graphite	426743-00	9000							

Log bolts are to be bought separately acc. 299.

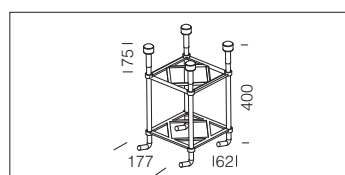
Hot-dip galvanised steel poles. With die-cast inspection window (186x45mm), 2 protection fuse holders, 2 fuses, 16A, 4-pole/3-way=10mm², derivation 2,5 sqmm, removable terminal block = 6 sqmm, 4 sqmm connection. With hole for insertion of power supply cable; with holes at different heights according to use. For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased. Standard insulation class II. When using Insulation Class I fixtures, appropriate grounding connections should be included in the system.



368 mast-top-pole connec.

grey	427002-00
graphite	427003-00

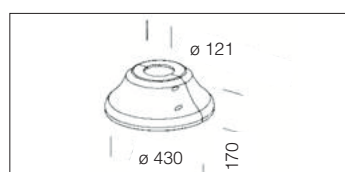
In galvanized steel. To be used as a mast-top-pole connection on poles acc. 1491/1493 ø120.



acc. 299 log bolts

h=6000	991396-00
h=7000/8000	991314-00

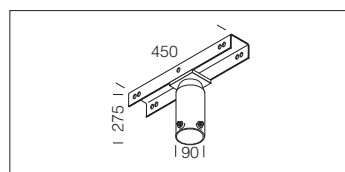
Log bolts are to be always used with the pole 1493.



acc. 222 base pole cover

grey	991378-00
graphite	991381-00

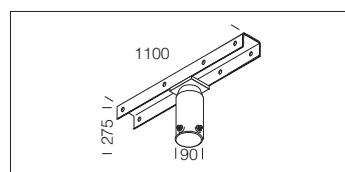
In die-cast aluminium. To be used as a base pole cover acc. 1493.



acc. 59 pole bracket

galvanized	997900-00
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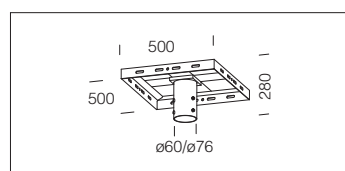
Bracket for pole mounting 1 or 2 end-to-end floodlights. For Ø 60/76 mm poles.



acc. 60 pole bracket

galvanized	997901-00
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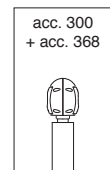
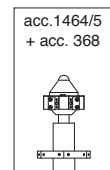
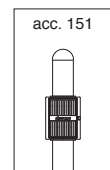
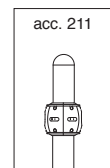
Bracket for pole mounting 2 or 4 end-to-end exterior floodlights. For Ø 60/76 mm poles.



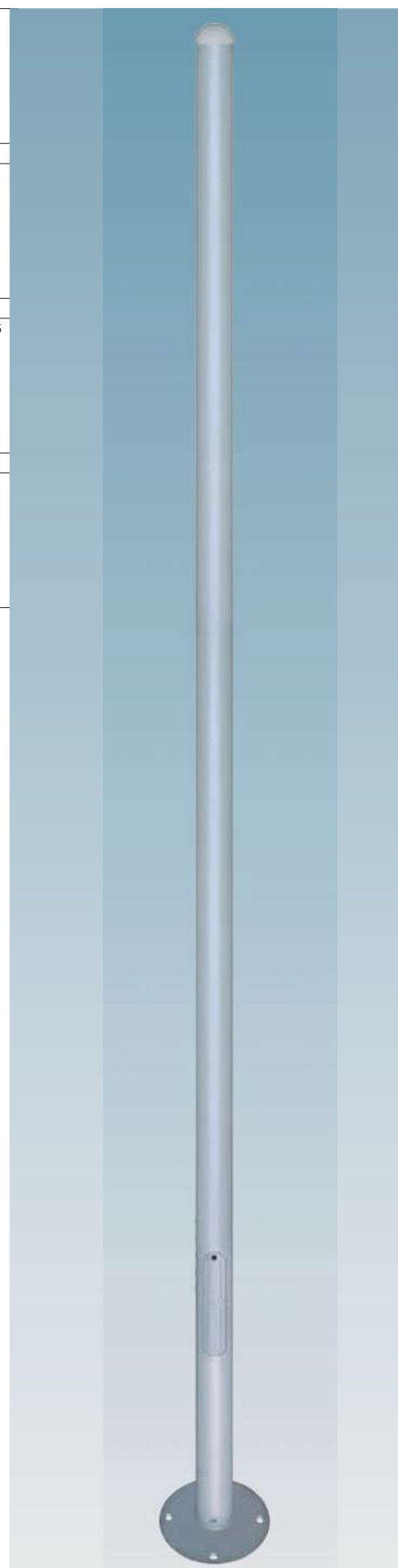
acc. 164 pole attachment

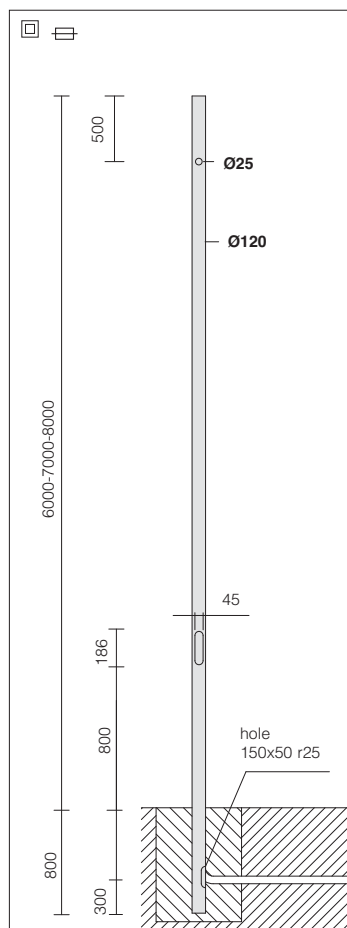
galvanized	998097
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Made in galvanized steel. To be used to apply on a pole until 4 fixture ø60/ø76.



NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1

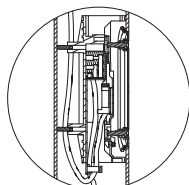


**ON REQUEST**

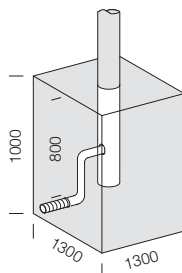
Possibility of supplying poles with the following colour paint finishes:

RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

Inspection door with easily removable terminal board for quick connection.

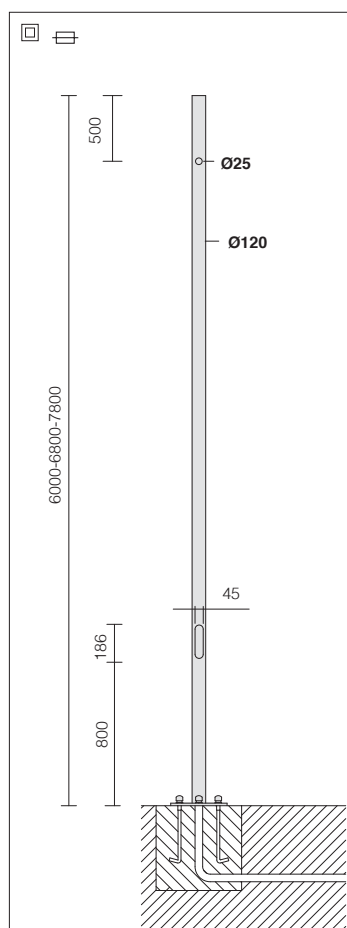


Concrete base dimensions (subject to soil variations)

**acc. 1491 steel pole to be buried**

colour	code								
grey	426177-00	6800	6000						
grey	426178-00	7800	7000						
grey	426179-00	8800	8000						
graphite	426149-00	6800	6000	800	800	186	45	Ø 120	
graphite	426153-00	7800	7000						
graphite	426159-00	8800	8000						

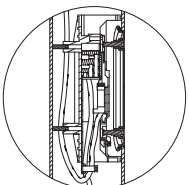
Supplied with end cap and holes to let the cables through.

**ON REQUEST**

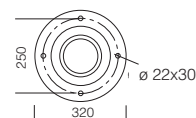
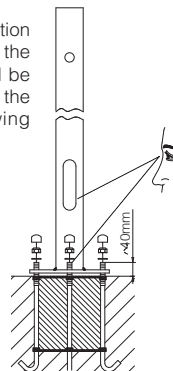
Possibility of supplying poles with the following colour paint finishes:

RAL 3003, 5011, 7026, 9011, 8015, 5002 7024, 7016, 7037, 6004, 8019, 6011, 7022, 1015, 9010.

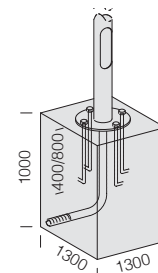
Inspection door with easily removable terminal board for quick connection.



For correct installation of pole and base, the ceiling cap should be fitted as shown in the assembly drawing featured opposite.



Concrete base dimensions (subject to soil variations)

**acc. 1493 steel pole with base**

colour	code							
grey	426197-00	6000						
grey	426198-00	6800						
grey	426199-00	7800						
graphite	426187-00	6000	800	186	45	Ø 120	Ø 320 hole Ø 22x30	
graphite	426188-00	6800						
graphite	426189-00	7800						

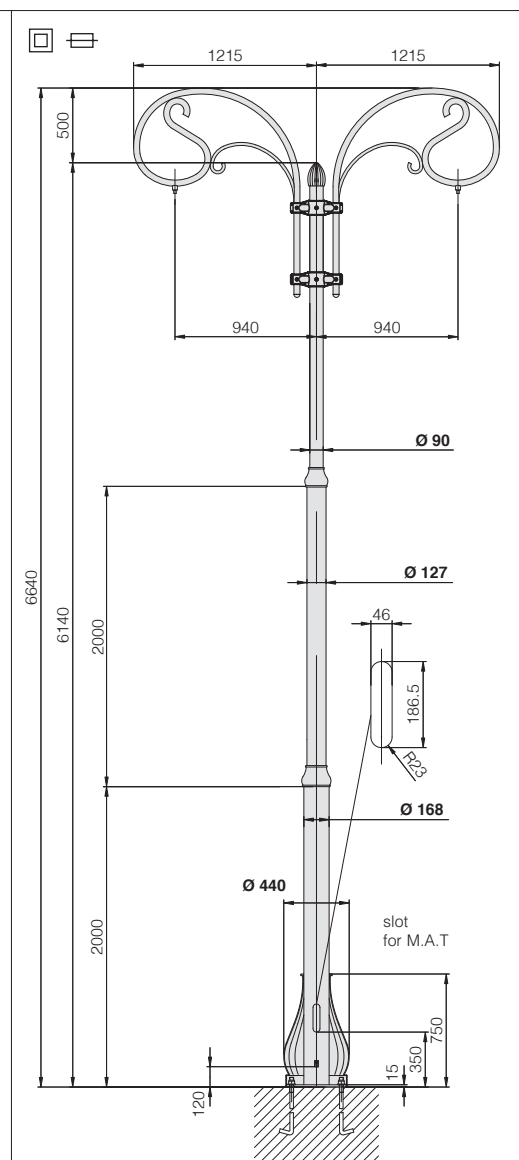
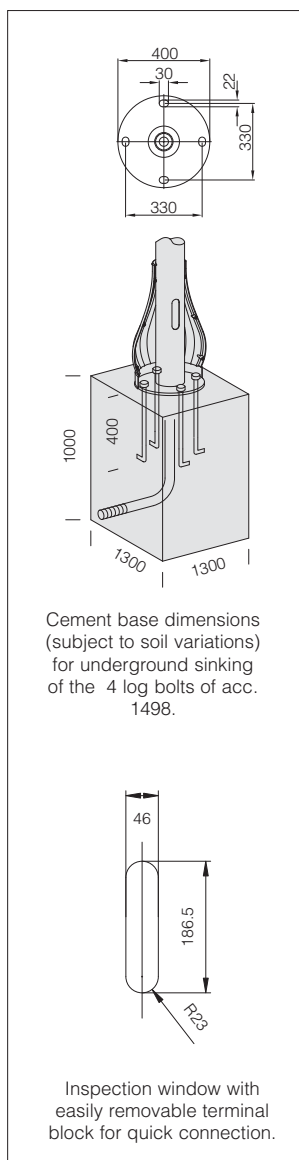
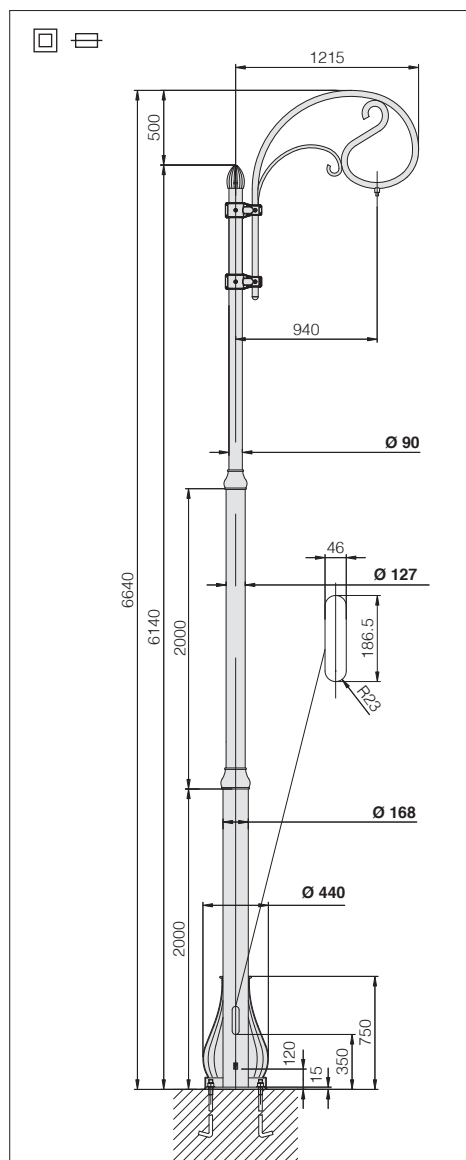
Supplied with end cap and holes to let the cables through. **Log bolts are to be bought separately acc. 299.**

Liberty Pole, complete with one or two brackets. Internal steel pole with die-cast aluminium coating.

Die-cast aluminium inspection window. Complete with 2 protection fuse holders, 2 fuses, 16A, removable 4-pole terminal block, 16sqmm cross section.

NOTE: The possibility to attach an assembly to the pole is subject to a wind pressure resistance assessment in the areas regulated by CNR-UNI standard 10032-67, according to load assumptions in UNI UNI 40/6 standard. An accurate and suitable protection or insulation of the surfaces involved is recommended to avoid any direct contact with the new masonry or concrete screed.

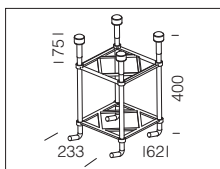




acc. 297 log bolts

426448-00

Log bolts are always to be used with the pole 1498.



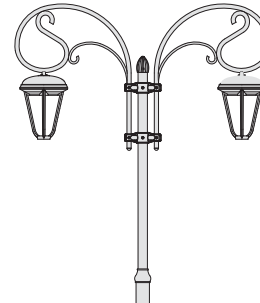
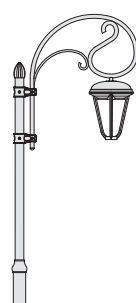
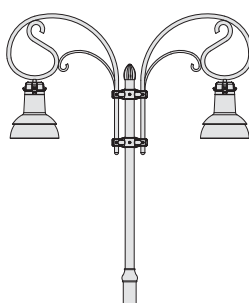
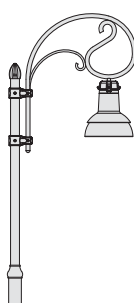
acc. 1498 Liberty pole

version	colour	code	6140	350	186.5	46	Ø 440	Ø 90	Ø 400 hole 30x22
with 1 arm	graphite	425200-00							
with 2 arms	graphite	425202-00							

Log bolts are to be bought separately acc. 297.

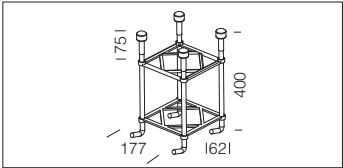
CAMPANA

LUCERNA

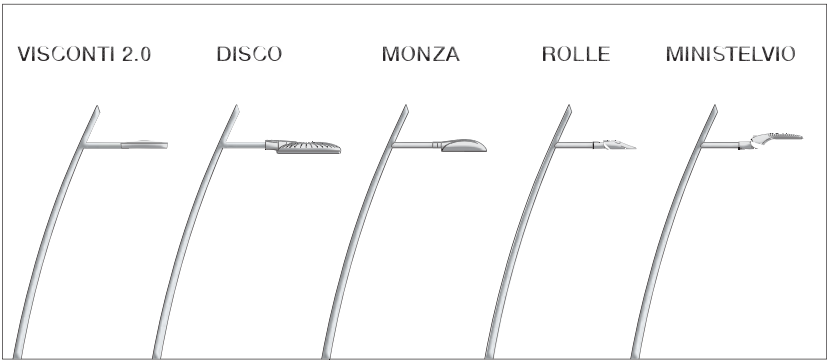


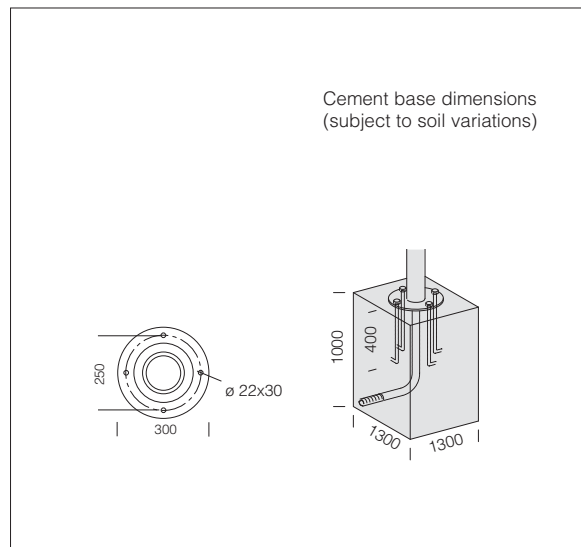
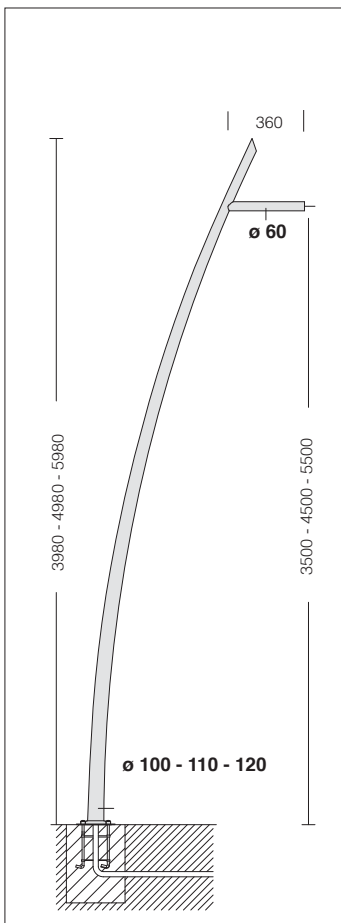
Tapered steel lighting pole. With hole for insertion of power supply cable, pole-head connection, $\varnothing 60$.
For the version with base, 4 log bolts to be sunk into the ground, bolts and lids have to be purchased.
When using insulation Class I fixtures, appropriate grounding connections should be included in the system.

NOTE. Before selecting the appropriate pole, make all necessary wind pressure resistance tests, pursuant to the Standards or Legislative Decrees in force in the countries where the pole will be mounted and based on the assumed loads specified in Standard EN 40-3-1








acc. 299 log bolts	
	991396-00
Log bolts are to be always used with the pole 1490.	





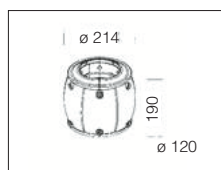
acc. 1490 "Virgola" pole

colour	code					
grey	425080-00	3980	3500	Ø 100		Ø 250 hole
grey	425081-00	4980	4500	Ø 110	Ø 60	Ø 22x30
grey	425082-00	5980	5500	Ø 120		

Painted pole in galvanized steel. Complete with cap and cable insertion hole.
Log bolts are to be bought separately acc. 299.
On request pole to be buried



For poles: Fluted Ø120, Steel Ø120, Steel Ø120-152, Steel Ø120-193



acc. 211 Sector connector	
grey	426952-00
graphite	426953-00
In aluminium. To be used for pole mounting ø 120.	



Acc. 327/328

Disco
Monza
Volo
Visconti 2.0

Ø 120



Acc. 210

Disco
Monza
Volo
Visconti 2.0

Ø 120



Acc. 301

Ø 120



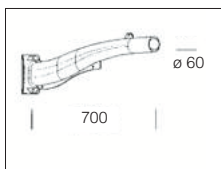
Acc. 303

Torcia
Vista



Acc. 304

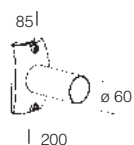
Campana



acc. 210 Sector arm

grey	426950-00
graphite	426951-00

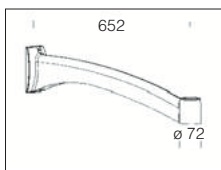
Made of aluminium. To be used with acc. 211 for pole mounting.



acc. 327 arm

grey	426942-00
graphite	426943-00

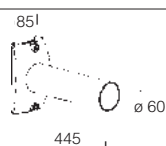
Made of die-cast aluminium. To be used with acc. 211-300 for installation of Monza, Volo.



acc. 301 arm Oliva

grey	426972-00
graphite	426973-00

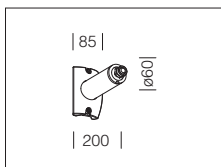
Made of aluminium. To be used with acc. 300-303-304 for pole mounting or acc. 302/309 for wall mounting.



acc. 328 arm

grey	426944-00
graphite	426945-00

Made of die-cast aluminium. To be used with acc. 211-300 for installation of Monza, Volo.



acc. 381 short arm

grey	326503-00
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To be used with acc. 211-300 for pole mounting.



acc. 303 connection Ø 60

grey	426976-00
graphite	426977-00

Made of aluminium. To be always used with acc. 301 for pole arm installation of Torcia, Vista, Polar, Clima.



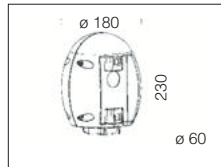
acc. 304 threaded connection

galvan.	426978-00
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Threaded connection to be used with acc. 301 for wall or pole installation of Campana.

For poles: Fluted Ø120, Cone-Shaped, Steel Ø120, Steel Ø120-152, Steel Ø120-193

acc. 300 Oliva connector	
grey	426970-00
graphite	426971-00
Made of aluminium. To be installed on ø60.	

**Acc. 327/328**

Disco
Monza
Volo
Visconti 2.0

Ø 120

**Acc. 210**

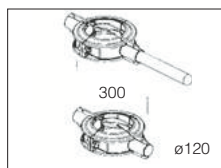
Disco
Monza
Volo
Visconti 2.0

Ø 120

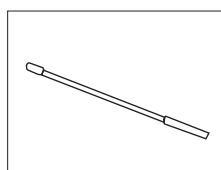
acc. 212 ring	
grey	426954-00
graphite	426955-00
In aluminium. To be used with acc. 214/215 for pole mounting ø 120.	



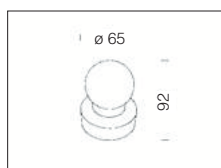
acc. 213 long banner connec.	
grey	426956-00
graphite	426957-00
In aluminium. To be used for pole mounting ø 120 of a flag.	



acc. 215 finishing tie rod	
	426960-00
In steel. To be used with acc. 212.	



acc. 305 end cap	
grey	426979-00
graphite	426980-00
To be used when on the acc. 210 no fixtures are installed. For an aesthetic finish.	

**Acc. 303**

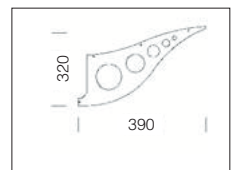
Torcia
Vista

**Acc. 301****Acc. 304**

Campana



acc. 214 small banner connec.	
grey	426958-00
graphite	426959-00
In aluminium. To be used with acc. 212 for pole mounting.	

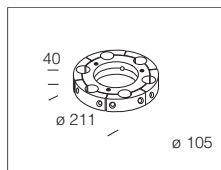
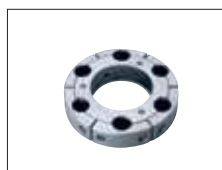
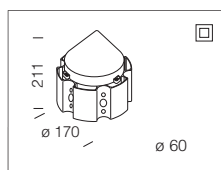


Upon request:



Acc. 1363**Acc. 1373**
Campana**Acc. 1364****Acc. 1365**

Ø 100

Acc. 1362Globo Visconti 2.0
Clima Ischia
Garda
Iseo
Como**acc. 1364 Corona**

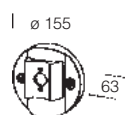
grey	426988-00
graphite	426926-00

Made of die-cast aluminium. For up to 6 arms acc. 1362 or 1363. Equipped with terminal block.

acc. 1365 Corona flange

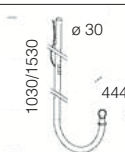
grey	426989-00
graphite	426999-00

Made of die-cast aluminium. Complete with 6 arm-stop devices to reinforce the assembly.

**acc. 1361 wall mounting**

grey	426987-00-00
graphite	426961-00

Die-cast aluminium spacer and base. To install arms acc 1362 or 1363.

**acc. 1362 upward arm Ø30**

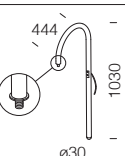
1000 grey	426906-00
1500 grey	426907-00
1000 graphite	426946-00
1500 graphite	426947-00

Ø 60 steel.

**acc. 1363 downward arm Ø30**

1600 grey	426916-00
2100 grey	426917-00
1600 graphite	427008-00
2100 graphite	427009-00

Ø 60 steel.

**1373 curved arm**

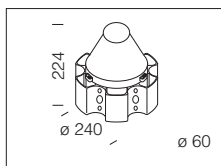
grey	426920-00
graphite	427014-00

In tropicalized steel. Apply to acc. 1364/65 and pole acc. 1408/1409.

acc. 1464 Corona

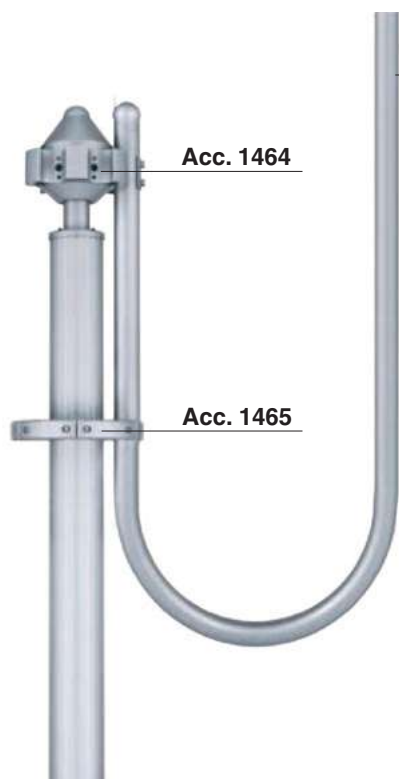
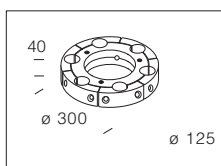
grey	426990-00
graphite	427000-00

Made of die-cast aluminium. For up to 6 arms acc. 1462 or 1463. Equipped with terminal block.

**acc. 1465 Corona flange**

grey	426991-00
graphite	427001-00

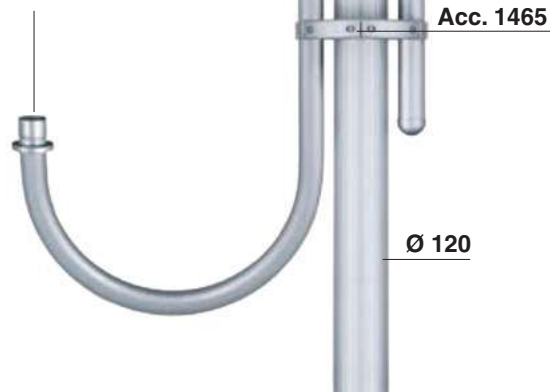
Made of die-cast aluminium. Complete with 6 arm-stop devices to reinforce the assembly.

**Acc. 129**

Lanterna
Clima
Vista
Torcia
Visconti 2.0
Ischia

Acc. 1462

Clima
Garda
Iseo
Como
Visconti 2.0
Ischia

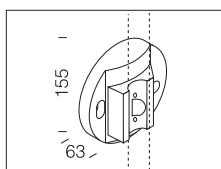
**Acc. 1464****Acc. 1463**

Acc. 1473
Campana

acc. 1461 wall attachment

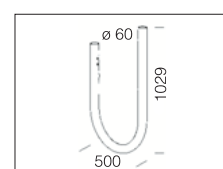
grey	426992-00
graphite	427012-00

Die-cast aluminium spacer and base.
For arm mounting use acc. 1462 or 1463.

**acc. 129 curved arm**

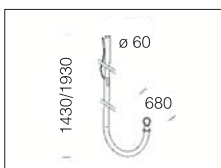
grey	991329-00
graphite	991321-00

Apply to Corona Ø120 series.

**acc. 1462 upward arm Ø60**

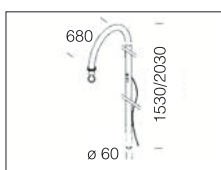
1430 grey	426908-00
1930 grey	426909-00
1430 graphite	426966-00
1930 graphite	426967-00

Ø 60 steel.

**acc. 1463 downward arm Ø60**

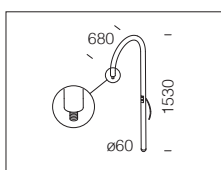
1530 grey	426918-00
2030 grey	426919-00
1530 graphite	427016-00
2030 graphite	427017-00

Ø 60 steel.

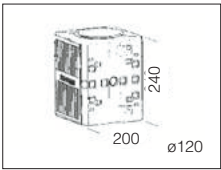
**acc. 1473 curved arm**

grey	426921-00
graphite	427013-00

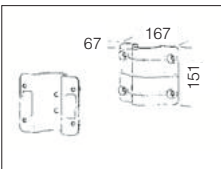
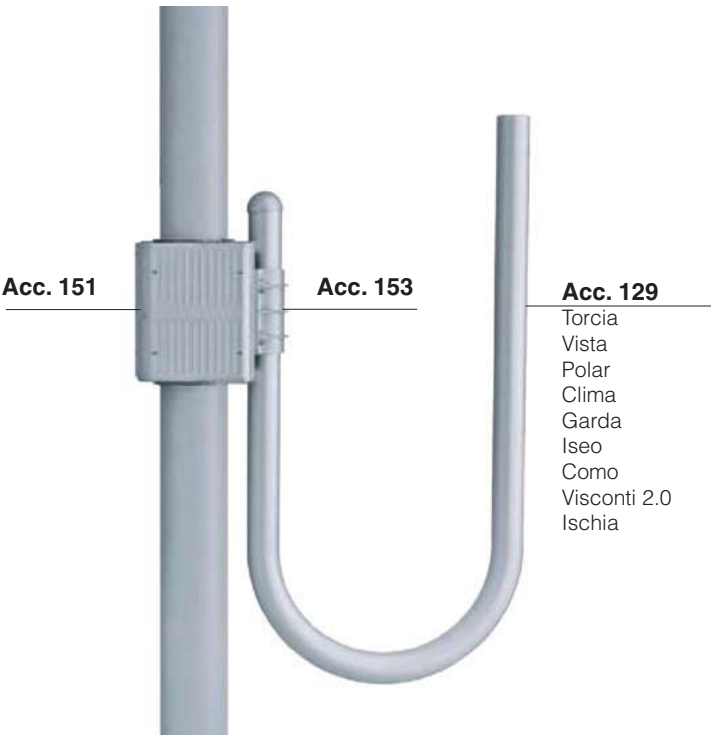
In tropicalized steel. Apply to acc. 1464/1465.



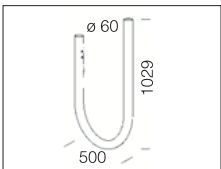
For Ø120 poles



acc. 151 Lione cube	
grey	991365-00
graphite	991310-00
Made of die-cast aluminium. To be used when installing the products on poles Ø120.	



acc. 153 Arm connection	
grey	991359-00
Made of die-cast aluminium. To be used with acc. 151 when installing curved arms (acc. 129) on poles.	

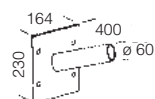


acc. 129 bent arm	
grey	991329-00
graphite	991321-00
Tropicalised steel. Apply to accessories 151-153.	

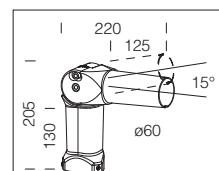


**acc. 48 wall bracket**

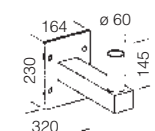
grey	997706-00
In steel. Used for wall mounting. Connection Ø60. Angle 15°.	

**405 articulated connection**

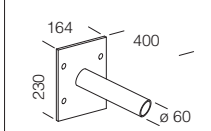
grey	991385-00
Adjustable connection at 90°. be used for pole installation Ø60.	

**acc. 72 wall bracket**

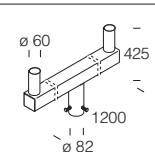
black	997910-00
Tropicalised steel, with mounting plate. For wall mounting.	

**248 wall bracket**

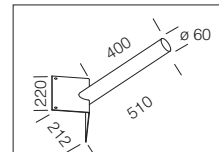
grey	997708-00
In steel. For wall mounting. Connection Ø60.	

**acc. 74 double mounting on mast**

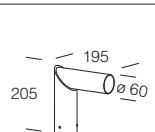
black	997911-00
Tropicalised steel. For on-mast installation of two fixtures. Connection Ø60/76.	

**249 corner bracket**

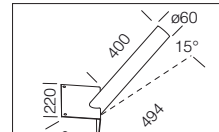
grey	997803-00
In steel. For wall corner mounting. Connection Ø60.	

**acc. 205 mast-top mounting**

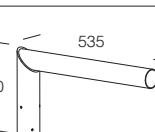
galvanized	426941-00
To be used for mast-top installation on Ø60 pole. 90° fixed.	

**acc. 49 corner bracket**

grey	997802-00
In steel. For wall corner mounting. Connection Ø60. Angle 15°.	

**acc. 205 mast-top mounting**

grey	426948-00
To be used for mast-top installation on Ø60 pole. 90° fixed.	





UNI EN 40 STANDARD

The UNI standard contains specific prescriptions concerning lighting poles, defined as supports designed to hold one or more lighting fixtures and composed of one or more parts: a stem, an extension, and an arm if required. The regulation applies to pole of a nominal height of 20 m or less, and poles with shelf of a nominal height of 18 m or less. The regulation applies both to straight poles for lighting fixtures with top mast mounting, and poles for fixtures with side mast mounting. The standard specifies the materials to be used in manufacturing poles for public illumination, provides recommendations on corrosion protection treatments, and determines the characteristics of electric gear compartments, cable raceways and grounding terminals of straight poles. Part 3-1 specifies the loads to be considered in designing lighting poles, providing bases for the calculation carried out when designing the illuminant's support structure, represented by the pole. The same part indicates the procedures for the correct measurement of the load due to the wind, as well as all the load variables to be considered. The standard enables a calculation of the action of the wind throughout the entire national territory, divided into nine geographic areas depending on wind intensity. The regulation refers directly to UNI standard ENV 1991-2-4; based on the latter, it provides the speed of the wind to be considered for the relevant installation area. The regulation indicates that the reference speed determines the calculation pressure, which in turn has to be adjusted applying the appropriate coefficients depending on the components' shapes, installation area characteristics, pole physical and geometric characteristics, etc.

TESTING OF THE COMPOSITIONS IN THE SHOWN CATALOGUE - All metal pole assemblies in the "urban decoration" and "residential" lines presented in the catalogue can be tested by Disano in accordance with UNI standard EN 40. Testing for conformity with UNI STANDARD EN 40 can be obtained upon request from our headquarters.

Testing of lighting systems is performed to determine:

- pole's resistance to bending due to wind thrust.
- pole's resistance to twist due to wind thrust on asymmetric assemblies.
- maximum vertical and horizontal warp due to wind thrust and to the assembly's own loads.

For those particular assemblies which are not tested in accordance with UNI standards EN 40/6 no area-related data are provided; however, indications are given on maximum estimated tolerable wind speed (in red) and anchor base dimensioning calculated according to the latter measure.

TEST - The action of the wind causes bending stress on the pole due to the momentum generated by the horizontal thrust force acting upon the elements that make up the lighting system with arms equal to the height of the respective centres of gravity.

Tests have been carried out on the lighting systems to ascertain:

- the resistance of the pole to the compressive stress caused by the weights of all the elements making up the composition;
 - the resistance of the pole to the bending stress generated by the thrust stress of the wind;
 - the resistance of the pole to the torsion stress generated by the thrust stress of the wind;
 - the resistance of the pole to the shear stress at the base due to the contrast exercised by the inertia of the concrete foundation plinth;
 - the size of foundation plinth required to ensure stability of the combined compressive and bending stress transmitted to the pole.
- The bending test was carried out using the yield point as the maximum stress value. Resistance was ascertained as in UNI EN standard 40/8, at the critical points in the structure that is at the base of the pole and at the lower edge of the inspection window where present. All calculations were carried out according to the definitions described below:

The load system considered included the weight of each lighting fixture and the thrusts caused by the action of the wind.

The weights of each of the main elements making up the compositions studied were taken into consideration, including:

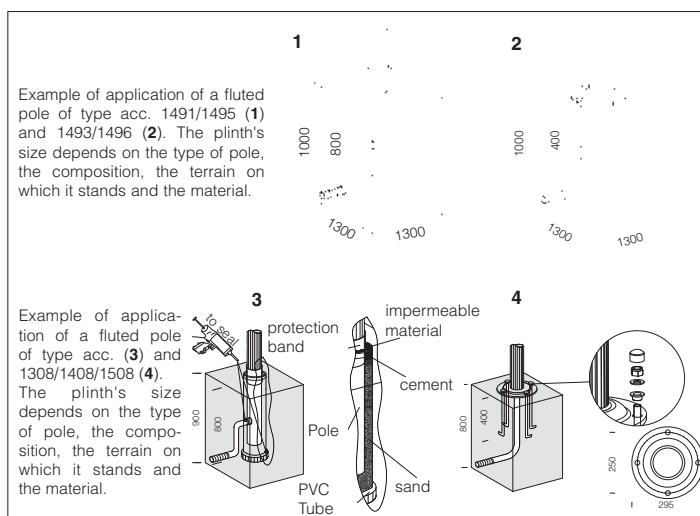
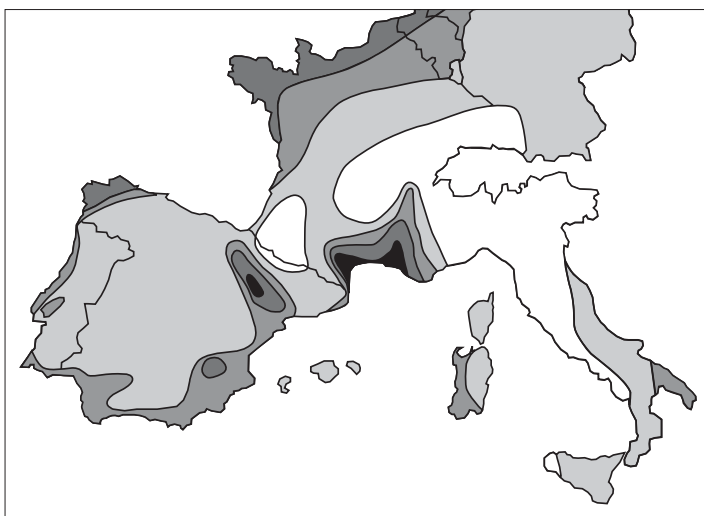
- weight of the pole and of all the accessories;
- weight of the overall lighting fixture or of the reflectors and related bases.

The vertical forces due to these masses were considered as it applied in the respective fields of gravity.

The dynamic pressure for the calculations due to the wind were obtained by multiplying the basic dynamic pressure, set down by the regulations as 500N/sq mm, by various factors which take account of the variation in the height above ground level, of the nominal height of the pole, of its dynamic behaviour when there are gusts of wind, of the location where it is installed. The basic dynamic pressure refers to a height of 10 m above ground level. Variation in the height above ground level has been assumed to be half the nominal height of the pole, considering the fact that, in general, poles for urban decor are installed at ground level. If they are installed at a different level, specific tests must be carried out. The dynamic increase coefficient, defined by UNI EN standard 40/6 takes account of the increase in loads when there are oscillations caused by gusts of wind. Coefficients which take into account the shape of the lighting fixture and of the pole have been calculated for each type and height.

SIZING OF THE FOUNDATION PLINTH

In calculating the correct size for the foundation plinth, reference is made to low quality concrete with low resistance since this permits a wide margin of safety. The depth used in the calculations, at which the pole should be buried in the concrete, is given in the catalogue and varies according to the type of pole used in the composition; the depth of the plinth is increased by 10 cm over that measurement to avoid punching and sinking of the pole within the concrete. The base chosen is square shaped to ensure the same response to the action of the wind from whatever direction it blows. In the case of fluted poles with base (acc. 1408 - 1508) which do not need to be buried in a foundation plinth, but are connected to it by log bolts, it is assumed that the log bolts to be buried in the concrete of which the foundation plinth is made are suitably sized to withstand the stress conditions generated by the load assumptions. The stability of the foundation plinth also depends upon the type of ground on which it is laid; the tests were carried out with a ground resistance value of 1.5 kg/sq cm, corresponding to medium to low resistance ground. With these conditions, a check of the force required to overturn the lighting fixture-plinth system was carried out, considering the plinth as simply standing on the ground. The system is subject to the moment generated by the horizontal thrust stresses acting on the elements that make up the lighting system with arms equal to the distance of the respective centres of gravity from the deepest point of the plinth. Stability against overturn is ensured by the weight of the lighting fixture, by the correct size of the concrete plinth and by the resistance offered by the ground. These calculations have permitted the identification of the minimum size of plinth required to prevent overturning, sliding or sinking.



Whether it's for indoor or outdoor areas, public or private offices, commercial or industrial spaces, Disano offers a **WIDE RANGE OF LIGHTING MANAGEMENT SOLUTIONS** that can help increase energy savings, visual comfort and safety.

Disano illuminazione offers a wide range of solutions that meet the design requirements of both simple and complex installations which include the concepts of **Smart Building** and **Smart City**, as well as **IoT infrastructure** where data are monitored and the system is analyzed to increase energy savings through personalized control strategies, which can be reconfigured endlessly to enable our lighting fixtures to interface with Building Automation IoT systems. Simple access and usage are crucial for making the technology available to everyone through smartphones and tablets.

INDOOR LIGHTING SOLUTIONS

LIGHTING MANAGEMENT SYSTEMS
Overview

p. 470

BASIC
MEDIUM
ADVANCED
SMART (IoT)

BASIC SOLUTION - ON/OFF
PLUG & PLAY systems with on-board sensors

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ON/OFF

BASIC SOLUTION - DIMM 1/10V
PLUG & PLAY systems with on-board sensors

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DIMM
1/10V

BASIC SOLUTION - DIMM DALI
PLUG & PLAY systems with on-board sensors

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DIMM
DALI

MEDIUM SOLUTION - PushDIM (or SwitchDIM)
CABLED solutions for DALI dimmable fixtures

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MEDIUM SOLUTION
CABLED solutions for DALI dimmable fixtures
not integrated

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MEDIUM SOLUTION - HIGH CEILINGS
CABLED solutions for DALI dimmable fixtures
not integrated

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ADVANCED SOLUTION - basicDIM
High-tech WIRELESS solutions managed via app

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ADVANCED SOLUTION - DISMART
High-tech WIRELESS solutions managed via app

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ADVANCED SOLUTION - ActiveAhead
High-tech WIRELESS solutions managed via app

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SMART SOLUTION - ZHAGA SOCKET
COMPLEX solutions requiring lighting management p. 496
hardware and software



SMART SOLUTION - WIRELESS (IoT)
COMPLEX solutions requiring lighting management p. 498
hardware and software



SMART SOLUTION - PoE
COMPLEX solutions requiring lighting management p. 502
hardware and software



OUTDOOR LIGHTING SOLUTIONS

BASIC SOLUTION - VIRTUAL MIDNIGHT
PLUG & PLAY systems

p. 504



SMART SOLUTION - NEMA and ZHAGA SOCKETS
COMPLEX solutions requiring lighting management p. 506
hardware and software



SMART SOLUTION
PHOTOCELL / SENSORS / WIRELESS ANTENNA
COMPLEX solutions requiring lighting management p. 508
hardware and software



SMART SOLUTION - WIRELESS (IoT)
COMPLEX solutions requiring lighting management p. 510
hardware and software



SPORTS SOLUTION - WIRELESS / DMX
COMPLEX solutions requiring lighting management p. 512
hardware and software



DMX SOLUTIONS

DMX SOLUTION FOR RGW - FULLCOLOR LEDS
COMPLEX solutions requiring lighting management p. 516
hardware and software



NEW DISMART APP: SIMPLE, RELIABLE AND INTUITIVE

Disano presents **DISMART**, the app that allows you to have complete control over your lighting system, now available for free in app stores.

The **DISMART** app has a simple interface that lets you easily programme and define lighting parameters and configure the system according to your lighting needs.

What are you waiting for? Come and check out our new App at page 492



INSTALLATION TIPS (products equipped with integrated sensor with microwave technology):

- Do not install in unstable locations or where subject to vibration
- Do not install near metal or glass structures
- Do not install near water pipes
- Do not install near fluorescent tubes
- Follow the instructions for maximum mounting height
- Make sure there are no moving or interfering objects within the sensor's range
- The sensor's microwaves can pass through glass, windows, doors and walls



INDOOR LIGHTING SOLUTIONS

BASIC SOLUTION

PLUG & PLAY systems with on-board sensors:

- Solution with built-in sensors
- Sensors attached to the lighting body and visible
- Programming via app or remote control of sensors or trimmers
- "PLUG&PLAY" no installation difference with a non-dimmable product
- The installer and the user do not require specific skills because the lighting fixture is configured to change lighting levels automatically
- No additional cabling
- No centralized controls
- No programming and commissioning from specialized technicians
- No remote communication

MEDIUM SOLUTION

CABLED solutions for DALI dimmable fixtures:

- The lighting fixture is equipped with a DALI PUSH DIM LED driver
- Simple additional cabling and possibility to use a standard NO switch

ADVANCED SOLUTION

High-tech WIRELESS solutions to be managed via app:

- System equipped with smart sensors with high level of automation
- Easy-to-use app and software that do not require skills from specialists (e.g. DALI commissioning or software engineer)
- Built-in or external sensors and, if requested, additional cabling that does not require complex circuitry

SMART (IoT) SOLUTION

COMPLEX solutions requiring lighting management hardware and software:

SMART solution:

- Wired and wireless solutions
- System with all fixtures and sensors are managed with the BUS link (or over the air) with the possibility of a limited, but extremely simple, management
- Possibility to configure via app/smartphone/tablet
- Suitable for medium-small systems
- Variable complexity, including situations that may require the intervention of specialized workers (e.g. commissioning)
- Scalable

IoT solution:

- Device complete with smart technology and hardware infrastructure with software for remote control



OUTDOOR LIGHTING SOLUTIONS

BASIC SOLUTION

PLUG & PLAY systems:

- The lighting fixture is equipped with a smart LED driver
- Virtual midnight
- Programmable dimming over 5 time slots

SMART (IoT) SOLUTION

COMPLEX solutions requiring lighting management hardware and software:

- The lighting fixture is designed to accept NEMA/ZHAGA socket
- Option to install sensors and remote control at a later time by using the fixture's socket
 - No additional cabling is required
 - External installation of fixture, no EMC issues

SMART (IoT) SOLUTION

COMPLEX solutions requiring lighting management hardware and software:

- Device complete with smart technology and hardware infrastructure with software for remote control

SPORTING SOLUTION

COMPLEX solutions requiring lighting management hardware and software:

- Small and medium-sized sports facilities
- Large-sized sports facilities (stadiums/sport centres/campuses)

**BASIC SOLUTION
(INDOOR)**

The Disano products equipped with **integrated sensor with microwave technology** must be ordered with **sub-code -19**. The BASIC – PLUG & PLAY solutions do not require additional cabling and special skills to be mounted, and apply to the following families of products:

Watertight fixtures in polycarbonate: **Ottima, Hydro,Thema, Echo**

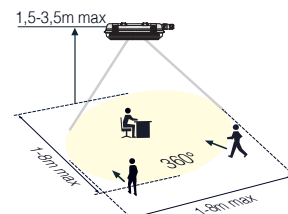
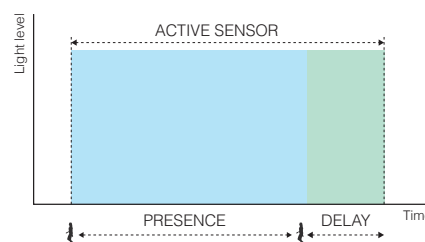
Luminaires for interiors: **Oblò 2.0, Globo 2.0**

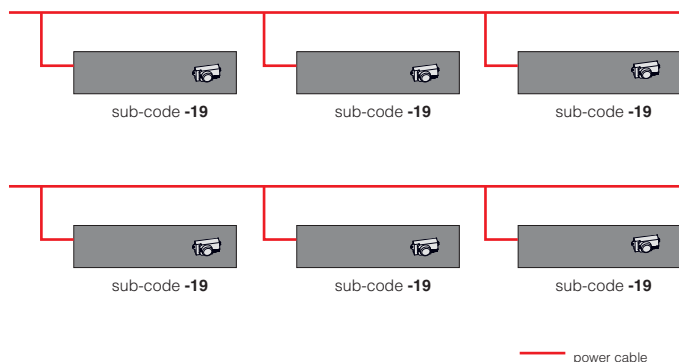

RADAR SENSOR - ON/OFF - TECHNICAL SPECIFICATIONS

Power source	220-240V AC - 50/60 Hz	Installing height	ceiling: 1,5-3,5 m
High frequency	5,8GHz CW Radar, ISM band - 0,2 - <10 mW	Power consumption	<0,9 W
Detection area	ceiling: 360°	Hold time (choice)	min: 10sec (± 3 sec.) max: 12min (±1 min.)
Detection distance (adjustable)	ceiling: Ø 1-8 m	Ambient light (choice)	<3-2000 Lux
Detection motion speed	0,6-1-1,5 m/s		

FEATURES

- High-frequency motion detector for invisible light switching, especially suited for use in lighting fixtures.
- Detection range, twilight value and additional activation time may be set with a potentiometer.
- HF technology: it reacts to very small movements, regardless of temperature; it also sees through walls.
- Extremely short activation time.
- Light only when needed.


Example of application: parking garage

RADAR SENSOR - ON/OFF STAND ALONE


BASIC SOLUTION (INDOOR)

The Disano products equipped with **integrated sensor** must be ordered with **subcode -19**. The BASIC – PLUG & PLAY solutions do not require additional cabling and special skills to be mounted, and apply to the following families of products:

Industrial fixtures: **Astro e Saturno**

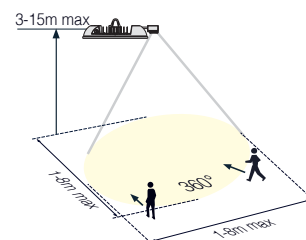
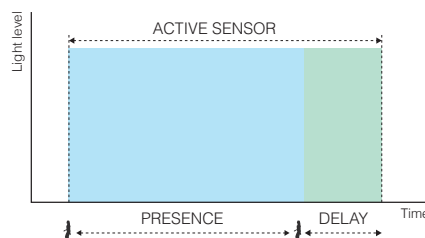


External **ON/OFF** motion sensor with twilight function:

- radar sensor with PIR technology
- operating modes and parameters can be set with remote control (OPTIONAL)

RADAR SENSOR - ON/OFF - TECHNICAL SPECIFICATIONS

Power source	220-240 Vac - 50/60Hz
High frequency	5.8GHz±75MHz, ISM wave band, <0.5mW
Detection angle	ceiling: 360° - wall: 150°
Detection area	8 max (choice)
Detection motion speed	0.5~3m/s
Mounting height	ceiling: 3-15 m max.
Power consumption	≤0.5W (standby), <1W (operation)
IP degree	IP65
Technology	PIR
Operating temperature (sensor)	-35 ... +70 °C
Hold time (choice)	5s / 30s / 90s / 3min / 20min / 30min
Ambient light (choice)	5lux / 15lux / 30lux / 50lux / 100lux / 150lux / Disable



(Optional cod. **81420019**) remote control to change parameters after installation, without opening the fixture

Example of application: warehouse or industrial plant

ON	1	2	3	4
I	ON	ON	ON	300%
II	-	-	-	50%

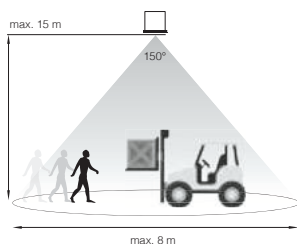
SCAN AREA:

can be reduced by selecting the relevant combination on the DIP switches to set sensor data for each application.

ON	1	2	3	4
I	ON	ON	ON	35
II	-	ON	ON	30s
III	ON	-	ON	90s
IV	-	-	ON	3min
V	ON	ON	-	20min
VI	-	-	-	30min

HOLD TIME:

refers to the amount of time the lamp stays on at 100% of the light level after no motion is detected.



**BASIC SOLUTION
(INDOOR)**

The Disano products equipped with **integrated sensor with microwave technology** must be ordered with **sub-code -19**. The BASIC – PLUG & PLAY solutions do not require additional cabling and special skills to be mounted, and apply to the following families of products:

Watertight fixtures in polycarbonate: **Ottima, Hydro, Thema, Echo**


RADAR SENSOR - DIMM 1/10V - TECHNICAL SPECIFICATIONS

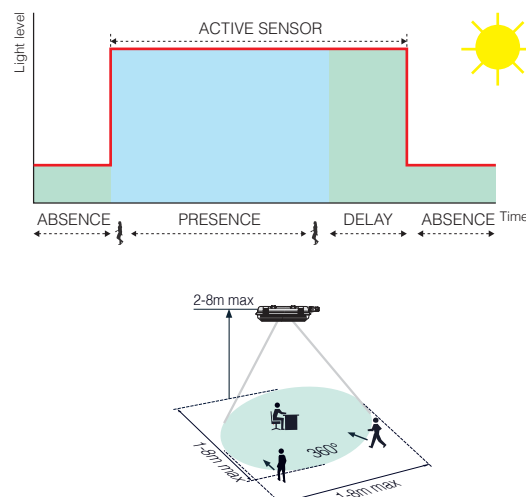
Power source	220-240V AC - 50/60 Hz	Rated Load	600 W
High frequency	5,8GHz CW Radar, ISM band - 0,2 - <10 mW	Power consumption	<0,9 W
Detection area	ceiling: 360°	Mounting height	ceiling: 2-8m
Detection distance (adjustable)	ceiling: Ø 1-8 m	Ambient light (choice)	2-10-50-2000 Lux
Detection motion speed	0,6-1-1,5 m/s	Hold time (choice)	min: 5sec (± 3 sec.) max: 30min (± 1 min.)
Detection range (choice)	10%-50%-75%-100%	Stand-by period (choice)	10s, 1min, 5min, 10min, 30min, 1H, +∞,0s
		Stand-by DIMM level (choice)	10%-20%-30%-50%

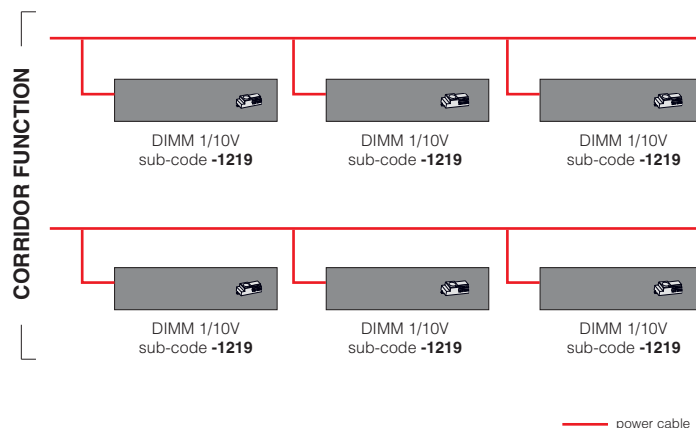
FEATURES

- High-frequency motion detector with dimmer for invisible light switching.
- Dimmable ballast with 1/10V interface.
- Detection range, twilight value and additional ac-

tivation time may be set with a potentiometer.

- HF technology: 5.8GHz, it reacts to very small movements, regardless of temperature; it also sees through walls.


Example of application: transit areas, corridors and passageways

RADAR SENSOR BUILT-IN CORRIDOR STAND ALONE


BASIC SOLUTION (INDOOR)

The Disano products equipped with **RADAR SENSOR** must be ordered with **subcode -1219**. The BASIC – PLUG & PLAY solutions do not require additional cabling and special skills to be mounted, and apply to the following families of products:

Industrial fixtures: **Astro e Saturno**

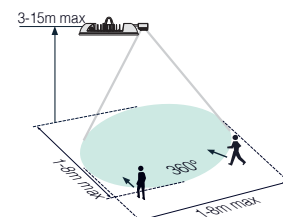
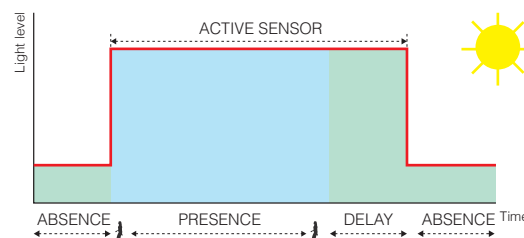


External **BI-LEVEL** motion sensor with twilight function:

- radar sensor with PIR technology
- operating modes and parameters can be set with remote control (OPTIONAL)

RADAR SENSOR - DIMM 1/10V - TECHNICAL SPECIFICATIONS

Rated supply voltage	220-240 Vac - 50/60Hz
High frequency	5.8GHz±75MHz, ISM wave band, <0.5mW
Detection angle	ceiling: 360° - wall: 150°
Detection area	8 max (choice)
Detection motion speed	0.5~3m/s
Mounting height	ceiling: 3-15 m max.
Power consumption	≤0.5W (standby), <1W (operation)
IP degree	IP65
Technology	PIR
Operating temperature (sensor)	-35 ... +70 °C
Hold time (choice)	5s / 30s / 90s / 3min / 20min / 30min
Ambient light (choice)	5lux / 15lux / 30lux / 50lux / 100lux / 150lux / Disable
Stand-by period (choice)	5s / 5min / 10min / 30min / 1h / ∞
Stand-by DIMM level (choice)	10% / 20% / 30% / 50%



(Optional cod. **81420019**) remote control to change parameters after installation, without opening the fixture

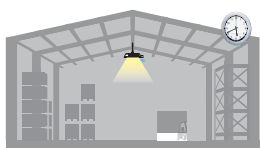
Example of application: warehouses or industrial plants



If the sensor does not detect motion, lights stay on constant for a pre-set time.



As soon as the sensor detects motion in the scan area, lights will automatically increase to 100%.



If no motion is detected after a certain amount of time, the sensor will dim back to the set level.



**BASIC SOLUTION
(INDOOR)**

The Disano products equipped with **RADAR SENSOR** must be ordered with **subcode -0061**. The BASIC – PLUG & PLAY solutions do not require additional cabling and special skills to be mounted, and apply to the following families of products:

Industrial fixtures: **Astro and Saturno**


HIGH CEILINGS

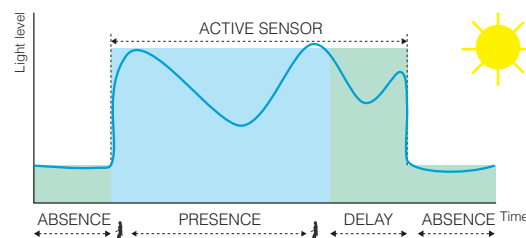

External **motion and constant light sensor**:

- PIR multi-sensor combined with dimmable fixture (DALI)
- operating modes and parameters can be set with remote control (OPTIONAL)

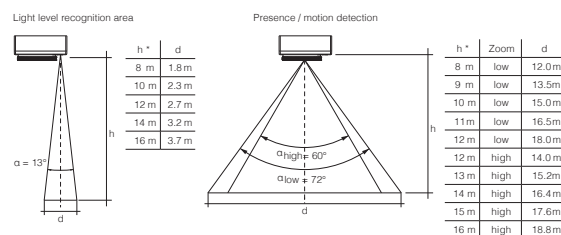
RADAR SENSOR DIMM DALI - TECHNICAL SPECIFICATIONS

Rated supply voltage	220-240 Vac - 50/60Hz	
Power consumption	2 W	
Output, stand-by	0,5 W	
Operating temperature (sensor)	0 ... +60 °C	
IP degree	IP65	
Time delay (regolabile)	min: 30sec - max: 60min	
Technology	PIR	
Max. mounting height	16m	
Light detection angle	13 °	
Motion detection angle	high	low
	72°	60°

Momentary-action switch input for on/off switching and dimming



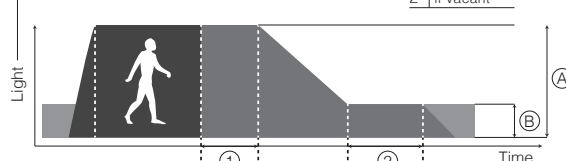
All functions can be set by request or with the (optional cod. **81420022**) remote control

Example of application: warehouses or industrial plants


Lights can be dimmed from 100% to 1% (with the option to go completely OFF)

Default Parameter Motion Detector

A	light-level
1	time delay
B	sec. level
2	if vacant



Time can be set from 30 sec. to 60 min.



**MEDIUM SOLUTION
(INDOOR)**
PushDIMM (or switchDIM): light control via N.O. switch

Main features:

- The lighting fixture is equipped with a dimmable LED driver DALI with PUSH function (*Note: not all LED DALI drivers on the market have this function*). With a particular connection between the driver and the DALI inlet you can enable functions such as power on/power off/dimming.

- The length of the cable and the number of fixtures that can be connected are virtually endless, but in

practice, there is asynchrony in the reply to the power ON and dimming command over distances above 25 metres and if many LED drivers are installed. As a consequence, this type of dimming is recommended in installations such as small offices, small meeting rooms, and generally, where cables are shorter.

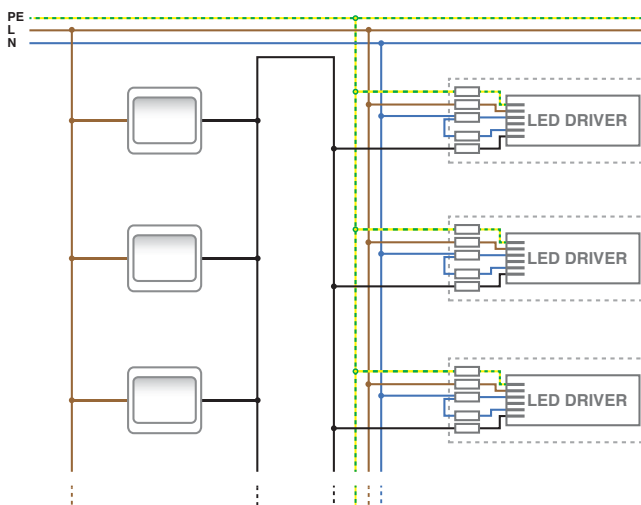
The Disano products equipped with **PushDIMM** driver must be ordered with **subcode -0045**. These solutions require simple additional cabling and can be used with standard N.O. switch and apply to the following families of product:

Luminaires for interiors: **Minicomfort, LED Panel, Compact**


Possible operations:

- Lights are powered on and off with a slight pressure of the button
- Lights are dimmed from off to 100% by holding the button down
- The dimming system is unidirectional, the information flows into one direction only, from the dimmer to the LED driver

In the case of a new installation or new ballast installed into an existing installation, it is possible that not all ballasts will be synchronous. In operation some ballasts will be switched off whilst others are switched on and the dimmed levels of the ballasts may not be the same. Pushing the button for longer than 10 seconds all ballasts will synchronize at a 50% light level and have the same point of departure for dimming. This process can be applied at any time during normal operation if any individual is unsynchronized.



cod. 81420033

Upon request, to automatically synchronize all the lights in a system, use the DALI - electronic synchronization device: control unit with in-built DALI dimmer and manual switching of DALI fixtures with all standard buttons.

Main features

- Possibility to connect up to four parallel devices to setup multiple control points
- Automatic synchronization of control points
- Length of DALI cable: up to 300 m

Advantages

- Manual and intuitive dimming and switching
- Individual setting of minimum light level
- Suited for a maximum of 25 electronic drivers

Easy installation in standard flush boxes

Only one component is required for the entire light control. After the connection to the mains and DALI wires, the DALI control unit is placed into the flush box and connected to the pushbutton ready.

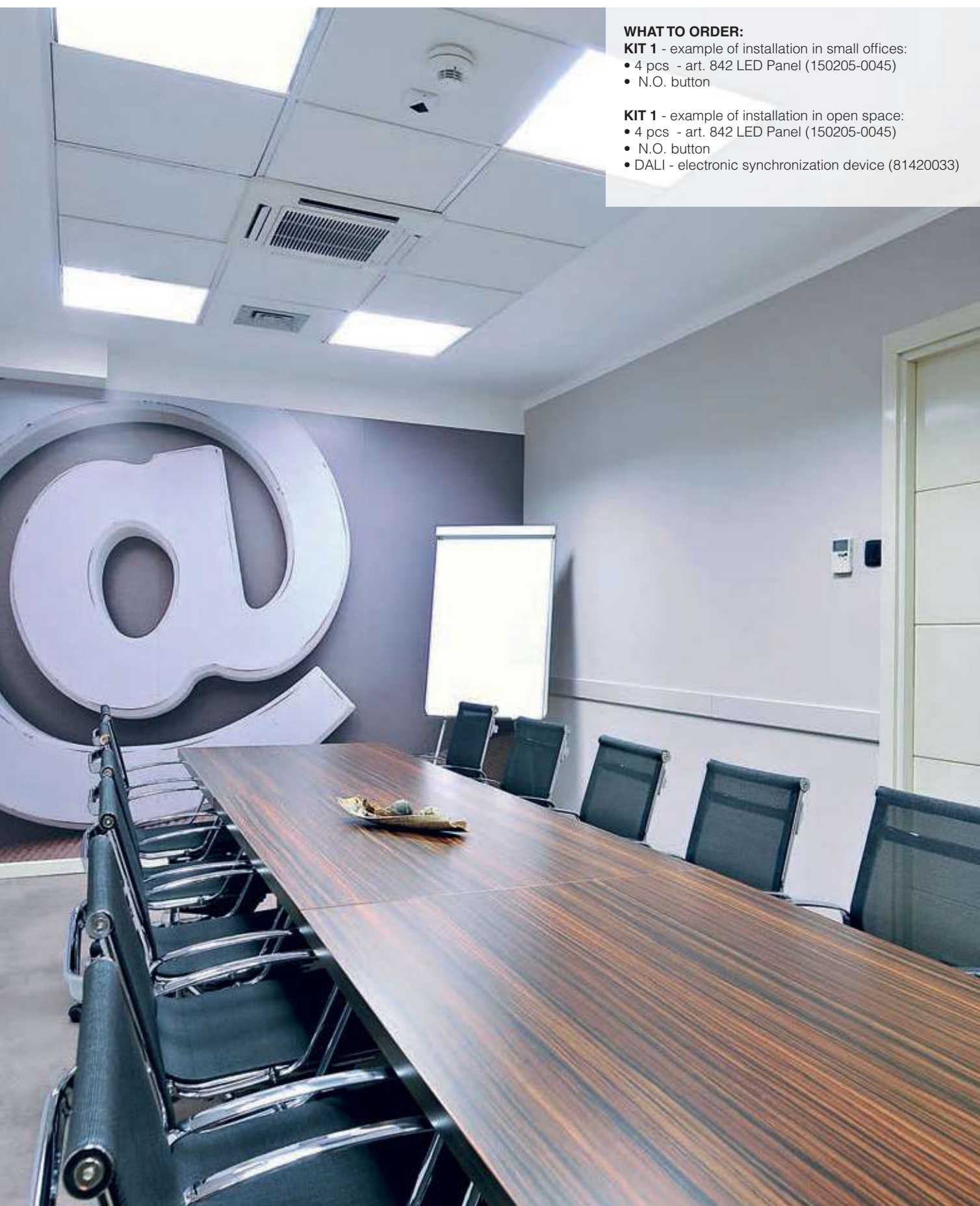


Example of application: ideal for industrial/residential spaces and small offices**WHAT TO ORDER:****KIT 1** - example of installation in small offices:

- 4 pcs - art. 842 LED Panel (150205-0045)
- N.O. button

KIT 1 - example of installation in open space:

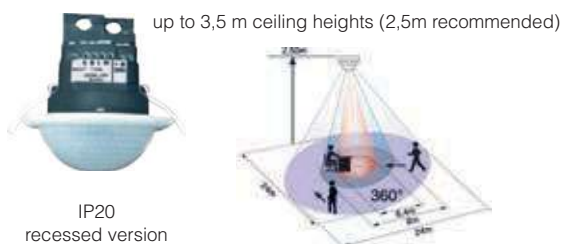
- 4 pcs - art. 842 LED Panel (150205-0045)
- N.O. button
- DALI - electronic synchronization device (81420033)



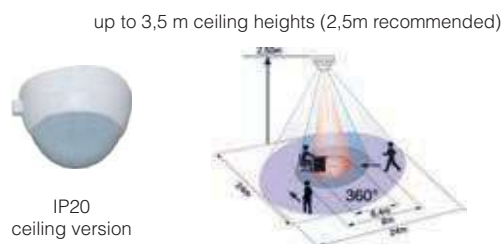
**MEDIUM SOLUTION
(INDOOR)**
PRESENCE SENSOR FOR INDOOR APPLICATIONS - DIMM DALI - NOT INTEGRATED

The presence detector adjusts the lights to a preset lighting value based on the people occupying a room and the amount of light at that moment. The integrated lighting sensor constantly measures the level of luminosity in the room and compares this value with the value set by the presence detector.

The **DALI** versions of Disano's products can be used with the presence detector by ordering with **subcode -0041**.

MASTER DALI

acc. MASTER DIMM DALI - recessed

Presence detector for large areas DIMM DALI.	code
	986417-00


acc. MASTER DIMM DALI - ceiling

Presence detector for large areas DIMM DALI. IP54 version with con- nection.	code
	986418-00

- Presence detector for **large scan areas** to adjust electrical lights based on the available daylight
- DALI interface for digital dimmable control as a group
- Possibility to switch from DALI with a remote control
- Enlargement of scan area with Slave units
- Possibility to activate lights manually through the touch of a button
- Further functions can be set with optional remote control

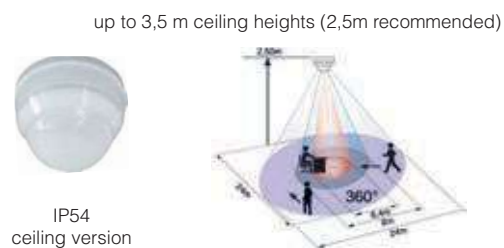
TECHNICAL SPECIFICATIONS FOR MASTER DALI

Mains voltage	110-240 V AC , 50 / 60 Hz
Power consumption	0,9 W
IP degree	recessed = IP20 - ceiling = IP20 / Class II
DALI	max. 50 electronic ballast
Brightness	10 - 2000 Lux
Ambient temperature	from -25 °C to +50 °C
Channels	Channel 1
Time setting	1 - 30 min

SLAVE DALI

acc. SLAVE DIMM DALI - recessed

Presence detector for large areas DIMM DALI.	code
	986423-00


acc. SLAVE DIMM DALI - ceiling

Presence detector for large areas DIMM DALI. IP65 version with con- nection.	code
	986419-00

- **To enlarge the scan area of a Master device;**
- Activation of the Master device if motion is detected regardless of the room's lighting

TECHNICAL SPECIFICATIONS FOR SLAVE DALI

Mains voltage	110-240 V AC , 50 / 60 Hz
Power consumption	0,2 W
Detection area	vertical: 360°
IP degree	recessed = IP20 - ceiling = IP54 / Class II
Ambient temperature	from -25 °C to +50 °C
Impulse response	2 sec or 9 sec

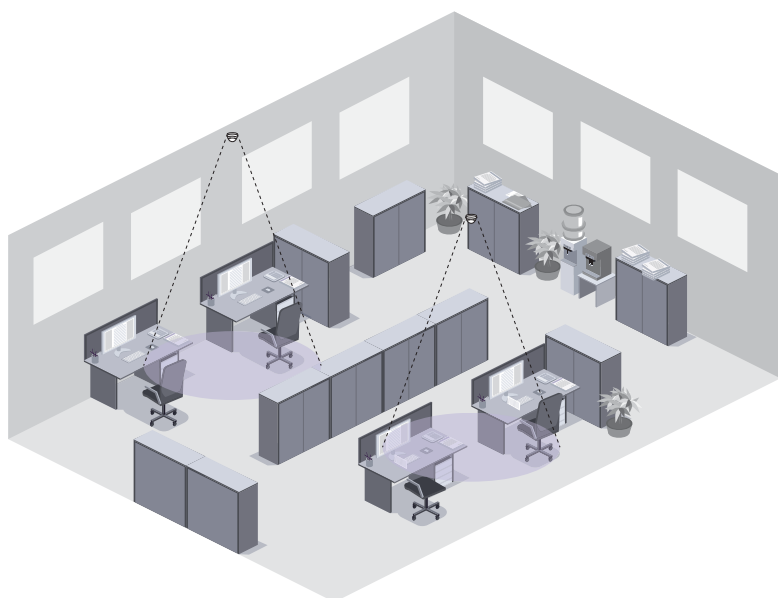
Accessories available on request for MASTER DALI

Accessories available on request for SLAVE DALI


**WHAT TO ORDER:****KIT 1** - example of installation in offices with:

- 8 pcs - art. 842 LED Panel (150205-0041)
- 1 pcs - MASTER DALI sensor (986418-00)
- 1 pcs - SLAVE DALI sensor (986419-00)
- 1 pcs - DALI remote control (986421-00)

Example of application: offices, meeting rooms, stores, corridors, bathrooms, transit areas

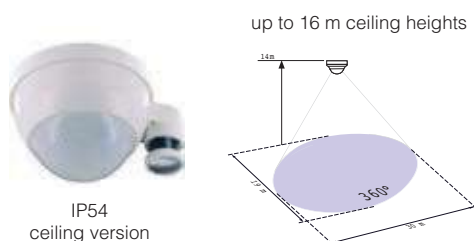


These areas generally require to be constantly illuminated with a minimum level of light even when they are not occupied in order to be ready to ensure the right visual comfort as soon as someone steps inside.

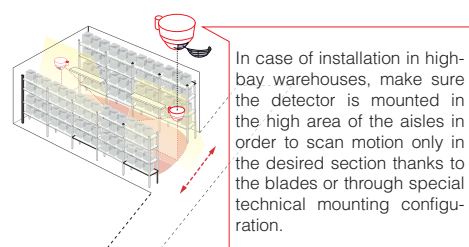
**MEDIUM SOLUTION
(INDOOR)**
PRESENCE DETECTOR FOR INDOOR APPLICATIONS - DIMM DALI - HIGH CEILINGS

External light sensor with telescopic function that ensures constant light dimming when mounted on ceilings up to 16 m high. The sensor's scan area can be adjusted by simply setting the telescopic light sensor to the desired mounting height. Motion detection was developed especially for applications such as high bay warehouses and ceilings over 10 m high.

The **DALI** versions of Disano's products can be used with the presence detector by ordering with **subcode -0041**.

MASTER DALI


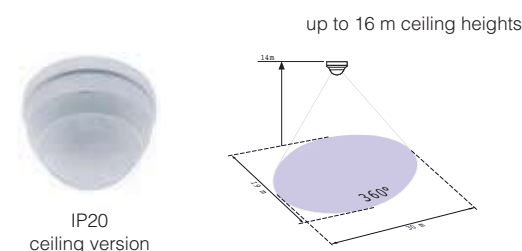
acc. MASTER DIMM DALI - ceiling	
Presence detector for large areas DIMM DALI.	code
	986426-00



- DALI occupancy detector for surface mounting in **large mounting heights**
- External telescopic light sensor for a mounting height between 5 and 16 m (mechanically adjustable) for measuring the light according to the application.
- DALI / DSI interface for control of digital dimmable electronic ballasts as a group
- Manual switching and dimming via push button possible
- Logical switching or control output
- Permanent or time-limited orientation light

TECHNICAL SPECIFICATIONS FOR MASTER DALI

Mains voltage	110-240 V AC , 50 / 60 Hz
Power consumption	0,9 W
IP degree	ceiling = IP54 / Class II
DALI	max. 50 electronic ballast
Brightness	10 - 2500 Lux
Ambient temperature	from -25 °C to +50 °C
Channels	Channel 1
Time setting	1 - 30 min

SLAVE DALI


acc. SLAVE DIMM DALI - ceiling	
Presence detector for large areas DIMM DALI. IP54/65 version with connection.	code
	986427-00

- **To enlarge the scan area of a Master device;**
- Activation of the Master device if motion is detected regardless of the room's lighting

TECHNICAL SPECIFICATIONS FOR SLAVE DALI

Mains voltage	110-240 V AC , 50 / 60 Hz
Power consumption	0,2 W
Detection area	vertical: 360°
IP degree	ceiling = IP20 / Class II
Ambient temperature	from -25 °C to +50 °C
Impulse response	2 sec or 9 sec

Accessories available on request for MASTER DALI


IR-DIM-DALI

cod. 986421-00

Accessories available on request for SLAVE DALI

(Ø200 x 90)



Protection grid

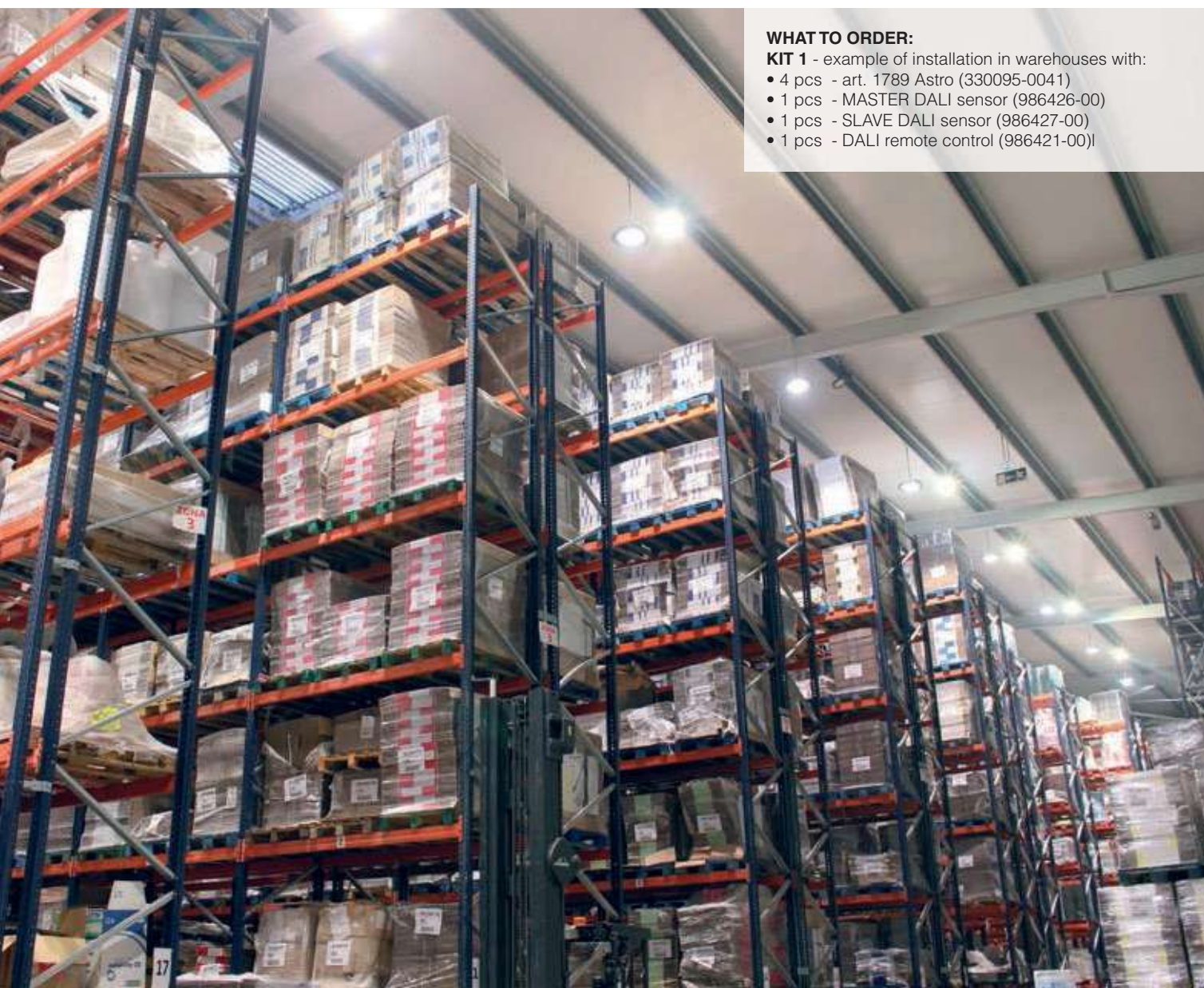
cod. 81400047



IP54 CONNECTION



IP65 CONNECTION

**WHAT TO ORDER:****KIT 1** - example of installation in warehouses with:

- 4 pcs - art. 1789 Astro (330095-0041)
- 1 pcs - MASTER DALI sensor (986426-00)
- 1 pcs - SLAVE DALI sensor (986427-00)
- 1 pcs - DALI remote control (986421-00)

Example of application: high-bay warehouses

Lights should depend on the movements inside the warehouse. Lights should not be triggered by forklift drivers or operators transiting across the main transit area and in other passageways, but only if the sensor detects their presence in the passage ways.

ADVANCED SOLUTION (INDOOR)

BASICDIM WIRELESS SYSTEM - FOR INDOOR APPLICATIONS

The wireless lighting management system is made up of the lighting system, the DALI driver and one of the basicDIM Wireless modules. The command profiles are saved at the factory. The lighting can be controlled via 4remote BT app or user interface. The Bluetooth connection allows controlling, in an easy and practical way, up to 250 light points, turning them on, off, dimming their intensity, grouping fixtures and creating lighting scenes. The **basicDIM Wireless**, is the ideal solution to make the lighting more modern without construction work. The usage area is substantially unlimited.

modern without construction work. The usage area is substantially unlimited.

Disano's products Disano made with the basicDIM system can be ordered according to the following compositions:

- **COMPOSITION A:** order **DALI** version with **subcode -0041** + **basicDIM wireless** module code **81420072**.
- **COMPOSITION B:** order version **with integrated wireless technology subcode -23**.

For best management of the basicDIM system, order the wireless controllers and app separately.

Advantages for the commissioning technician:

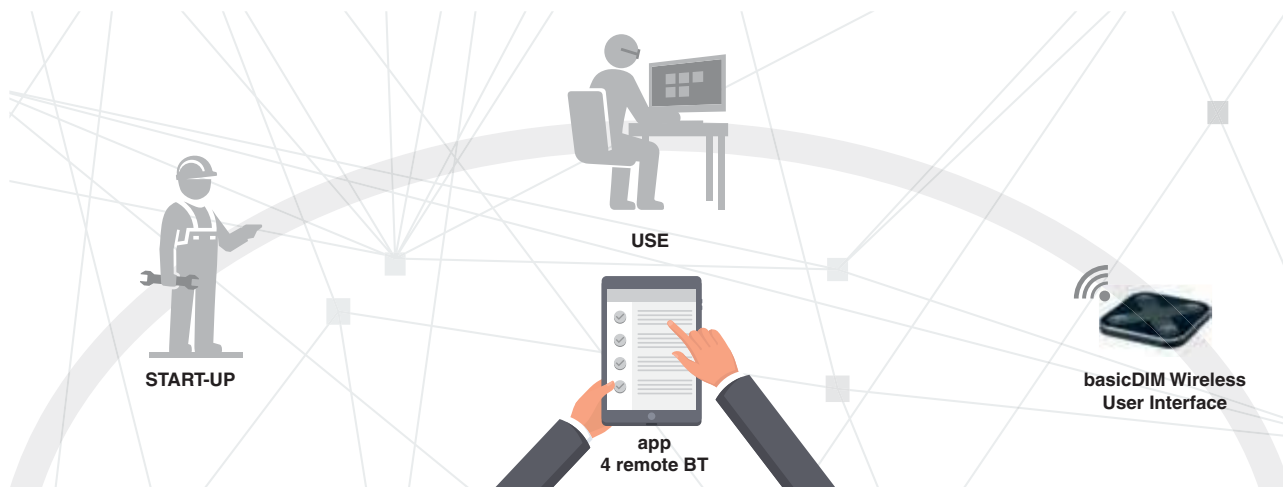
- Starting, programming and control of lighting fixtures in an easy way thanks to the app
- Easy location and wireless assignment of lighting fixtures
- Easy system adjustment

Advantages for the building operator:








- Easy updating
- Reduction of energy consumption
- Possibility of multifunctional use of rooms
- Wireless adjustment of the individual lights

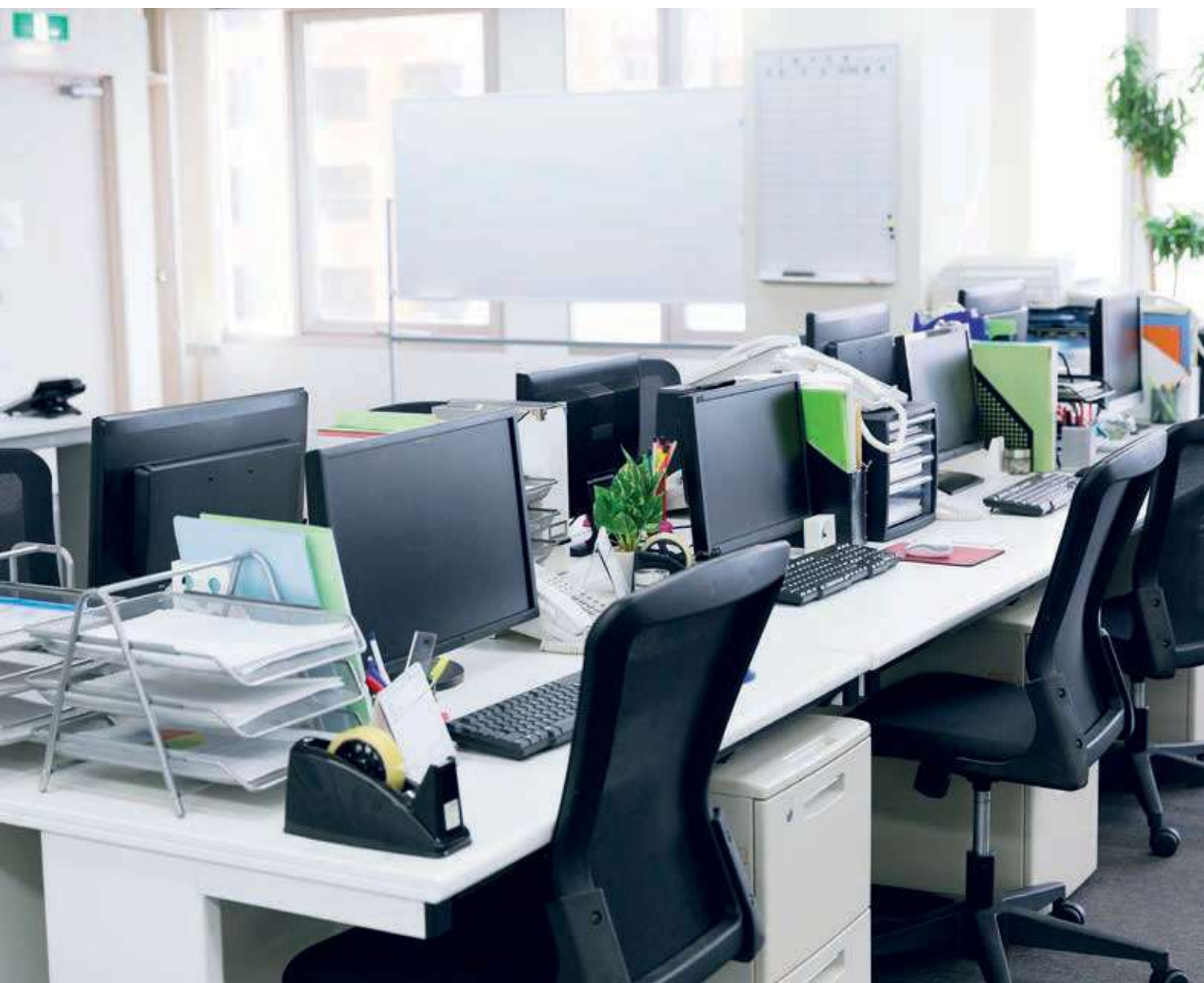
Advantages for the user:

- Individual functioning of the individual lighting fixture
- Easy graphical selection of the lighting fixture
- Intuitive selection of light level and brightness



Options for use

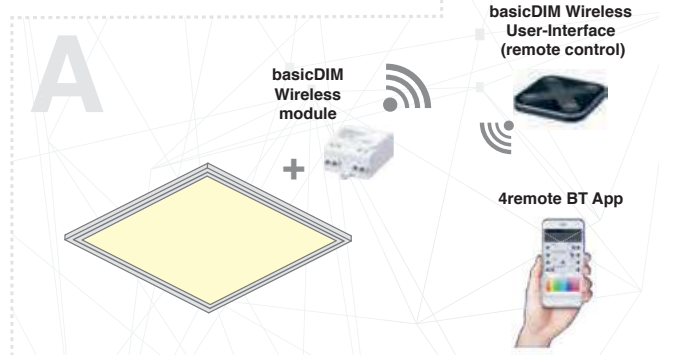
- | | | | |
|--|---|--|---|
|  <p>Settings selection</p> <p>Rapid access to the saved settings and adjustments made according to the use expected for the room</p> |  <p>Colour temperature adjustment</p> <p>Individual adjustment of the light level based on the lighting fixtures used</p> |  <p>Dimming option</p> <p>From 1% to 100%</p> |  <p>Presence detection</p> <p>Basic lighting according to requirements through the integration of sensors</p> |
|  <p>Planning</p> <p>Support for planning tasks thanks to internal clocks and calendars</p> |  <p>Personalization</p> <p>Adjustments to adapt to the changing usage requirements or to expand the system</p> |  <p>System with group circuits</p> <p>Control of individual fixtures and groups of fixtures that can be adjusted at any time based on usage requirements through the 4remote BT app. Easy to expand thanks to wireless installation.</p> | |



System composition

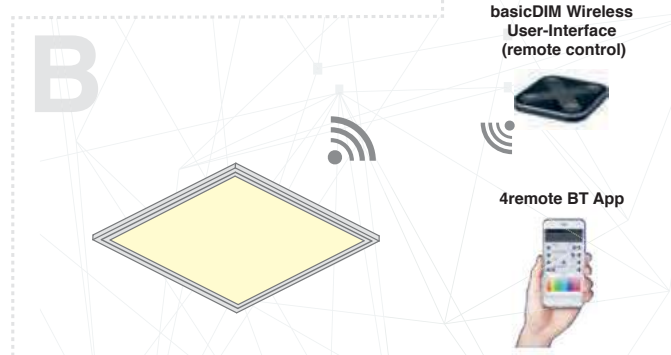
COMPOSITION A: order DALI version with **subcode -0041** + **basicDIM wireless** module code **81420072**.

Users can command the Basic-DIM wireless modules with the 4remote BT app or the user interface to create a wireless communication network.



COMPOSITION B: order version with **integrated wireless technology subcode -23**.

Users can communicate directly with the fixture with the 4remote BT app or from the user interface.



ADVANCED SOLUTION (INDOOR)

BASICDIM WIRELESS SYSTEM - FOR INDOOR APPLICATIONS

System architecture: is made up of hardware and software modules. Communication with fixtures and sensors occurs via BLE - 2.4 GHz radio frequency (wireless) solutions.

basicDIM Wireless Module



cod. 81420072

The basicDIM wireless module allows easy wireless interaction with lighting fixtures, including their configuration, start-up and actual use. The lighting control system can also be managed via the 4remote BT app.

- Wireless command with Android/iOS devices
- Automatically creates a wireless communication network with max. 250 nodes
- Possibility to configure analogue/digital output
- Analogue output: 0 – 10 V / 1 – 10 V decreasing/increasing
- Digital output: DALI compatible

FEATURES:

- Power voltage: 220/240 V
- Frequency: 50/60 Hz
- Maximum radio receiver output power: + 4 Dbm
- Ambient temperature: -20 ÷ +50 °C
- Protection class: IP20

IP40 and IP66 boxes for remote installation

BOX - IP40



cod. 986447-00

BOX - IP66



cod. 997649-00

Power supply DALI PS3



cod. 986440-00

The DALI PS3 power supply is designed specifically for smaller DALI applications.

FEATURES:

- DALI-2 power supply providing 70 mA for DALI-2 installations
- Power voltage: 220/240 V
- Mains frequency: 50/60 Hz
- Power consumption: 1.75 W
- Ambient temperature: 0 ÷ +50 °C
- Degree of protection: IP20

BLE Passive module



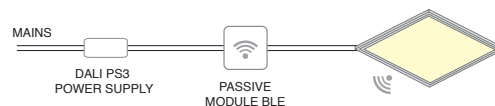
cod. 986441-00

The BLE transmitter (passive module) creates a wireless network by interacting with the luminaires, hence eliminating the need for an additional network line. The lighting control system can also be managed via the 4remote BT app.

FEATURES:

- Automatically forms a wireless communication network with max. 250 nodes (no external gateway is required)
- Digital output: DALI compatible
- Max. DALI bus current: 250 mA
- Ambient temperature: 0 ÷ +50 °C
- Degree of protection: IP20

Example of installation



Wireless devices and Apps to manage the basicDIM system

basicDIM Wireless radio sensor



cod. 81420082

The wireless sensor allows controlling lights based on the amount of daylight and occupancy level. It was designed for the following applications: open space offices, training/presentation rooms, corridors, transit ways and garages.

- Command based on surrounding luminosity and presence
- Wireless control with Android/iOS devices
- Passive IR sensor technology
- Including shutter to optimize sensor scanning range

FEATURES:

- Power voltage: 220/240 V
- Frequency: 50/60 Hz
- Mounting height: max. 4 m
- Scan range (mounting height: 3 m): ø 8 m
- Lighting measurement on the head of the sensor: 1 – 2000 lx (± 20 %)
- Ambient temperature: 0 ÷ +50 °C
- Protection class: IP20

Accessory for radio sensor ceiling connection



cod. 81420085

IP66 sensor for high mounting heights



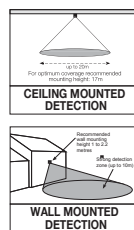
cod. 986448-00

This sensor is ideal for high mounting. It has an IP66 degree of protection and can be installed either on ceilings or walls (indoor/outdoor). It was designed for the following main applications: corridors, passageways and garages.

- Command based on surrounding luminosity and presence
- Wireless control with Android/iOS devices
- Passive IR sensor technology

FEATURES:

- Power voltage: 220/240 V
- Frequency: 50/60 Hz
- Max. mounting height: : ceiling 17 m - wall 1÷2,2 m
- Scan range: ceiling ø 20 m - wall ø 10 m
- Lighting measurement on the head of the sensor: 5 – 2.000 lx
- Ambient temperature: -20 ÷ +50 °C
- Protection class: IP66



basicDIM Wireless User Interface



cod. 81420083



cod. 81420084

The basicDIM wireless user interface offers great interior design flexibility because furniture can be replaced and walls can be rebuilt without taking into account of the position of cables and switches.

- Control of all basicDIM Wireless devices
- Control of colour temperature
- Control of individual lighting fixture / Control of groups of lighting fixtures / Control of all lamps
- Saving of light scenes / Savings of animations
- Radio signal capacity: up to 60 m

App 4remote BT



The free app comes with a wireless basicDIM solution in all the development phases. Every operation can be done with an extraordinary comfort in an easy and quick way, starting from the installation and commissioning processes of the lighting fixtures to their daily use.

In order to be able to control basic wireless basicDIM lighting fixtures, you will need to connect (associate) them to a network. This is done with the 4remote BT app. All settings, such as names, images, groups, timers, scenes, and switch settings are saved on a network. If a unit is removed (disassociated) from the network, it will no longer have the specific network settings. If a wireless basicDIM wireless is not part of any network, the 4remote BT app will automatically display a pop-up window to add the unit to a network. The devices can be selected from specific profiles if a device is disassociated.

Timer

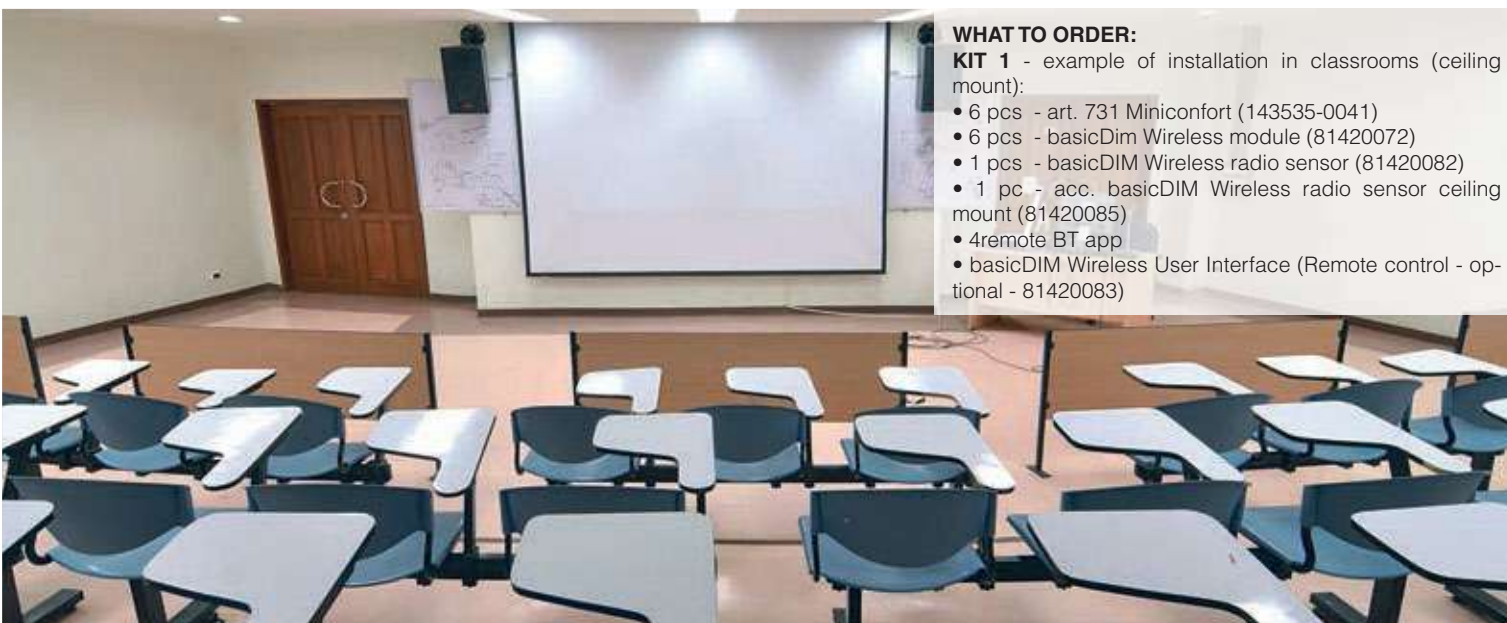


cod. 81420086

The timer is a device that will let you store lighting scenes data in case of temporary electricity shortage or black-out. Programming and synchronization settings are re-established when power is restored.

- Command: normally open switch that can be programmed via app
- Time memorization to keep the lighting scenes in case of black-out
- 24-hour network time memorization
- Synchronization of lighting scenes and programming settings in case of black-out or temporary electricity shortage
- Synchronization/storage of circadian profile via the App
- Power voltage: 12V-24V-48V
- Dimensions: 45 x 58 x 25 mm
- Protection: IP20

Example of application: classrooms, offices or open spaces

**WHAT TO ORDER:**

KIT 1 - example of installation in classrooms (ceiling mount):

- 6 pcs - art. 731 Miniconfort (143535-0041)
- 6 pcs - basicDim Wireless module (81420072)
- 1 pcs - basicDIM Wireless radio sensor (81420082)
- 1 pc - acc. basicDIM Wireless radio sensor ceiling mount (81420085)
- 4remote BT app
- basicDIM Wireless User Interface (Remote control - optional - 81420083)

**WHAT TO ORDER:**

KIT 2 - example of installation in offices (recess mount):

- 8 pcs - art. 844 LED Panel HE (150225-0041)
- 8 pcs - basicDim Wireless module (81420072)
- 1 pc - basicDIM Wireless radio sensor (81420082)
- 4remote BT app
- basicDIM Wireless User Interface (Remote control - optional - 81420083)

**WHAT TO ORDER:**

KIT 3 - example of installation in offices (with integrated wireless technology):

- 30 pcs - art. 844 LED Panel HE (150225-23)
- 8 pcs - basicDIM Wireless radio sensor (81420082)
- 4remote BT app
- basicDIM Wireless User Interface (Remote control - optional - 81420083)

ADVANCED SOLUTION (INDOOR)

DISMART: WIRELESS INDUSTRIAL REMOTE CONTROL SYSTEM

The **DISMART** system was designed to allow notable energy savings in large-scale indoor lighting systems, adjusting the lighting intensity emitted by the fixtures based on environmental and design parameters.

It constantly modifies the level of artificial light, setting a dimming level to guarantee the desired brightness according to the amount of daylight filling the room.

To have a **DISMART** system, please order:

- 1) **DIMM** version fixture with light controller module with **subcode -24**
- 2) **gateway** module with code **81420077** that creates the local Wi-Fi network
- 3) free **App** for mobile devices for complete system management and configuration

The solutions with DISMART system apply to the following families of product:

Watertight fixtures: **Ottima, Thema, Echo, Forma, Radon**

Industrial fixtures: **Astro and Saturno**



The system allows high energy savings:

- By exploiting the availability of daylight, you can lower the lumen emitted by fixtures (decreasing absorbed power) and guarantee the desired level of lighting, reducing consumption.

- By keeping a constant lumen level to reduce consumptions connected to over-dimensioning (background area of the chart) necessary to make up for the maintenance factor. The system will therefore avoid, from the first start-up, using full light when so much light is not needed.

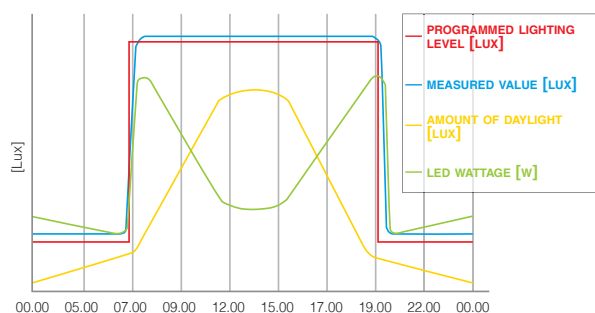


Figure 1: System parameters trend.

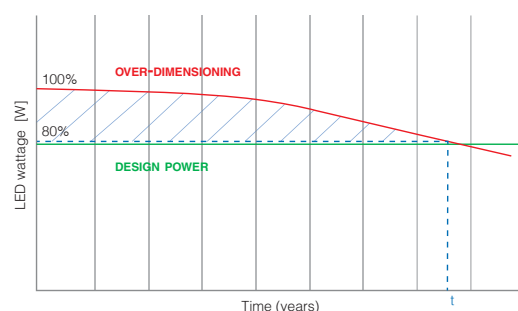
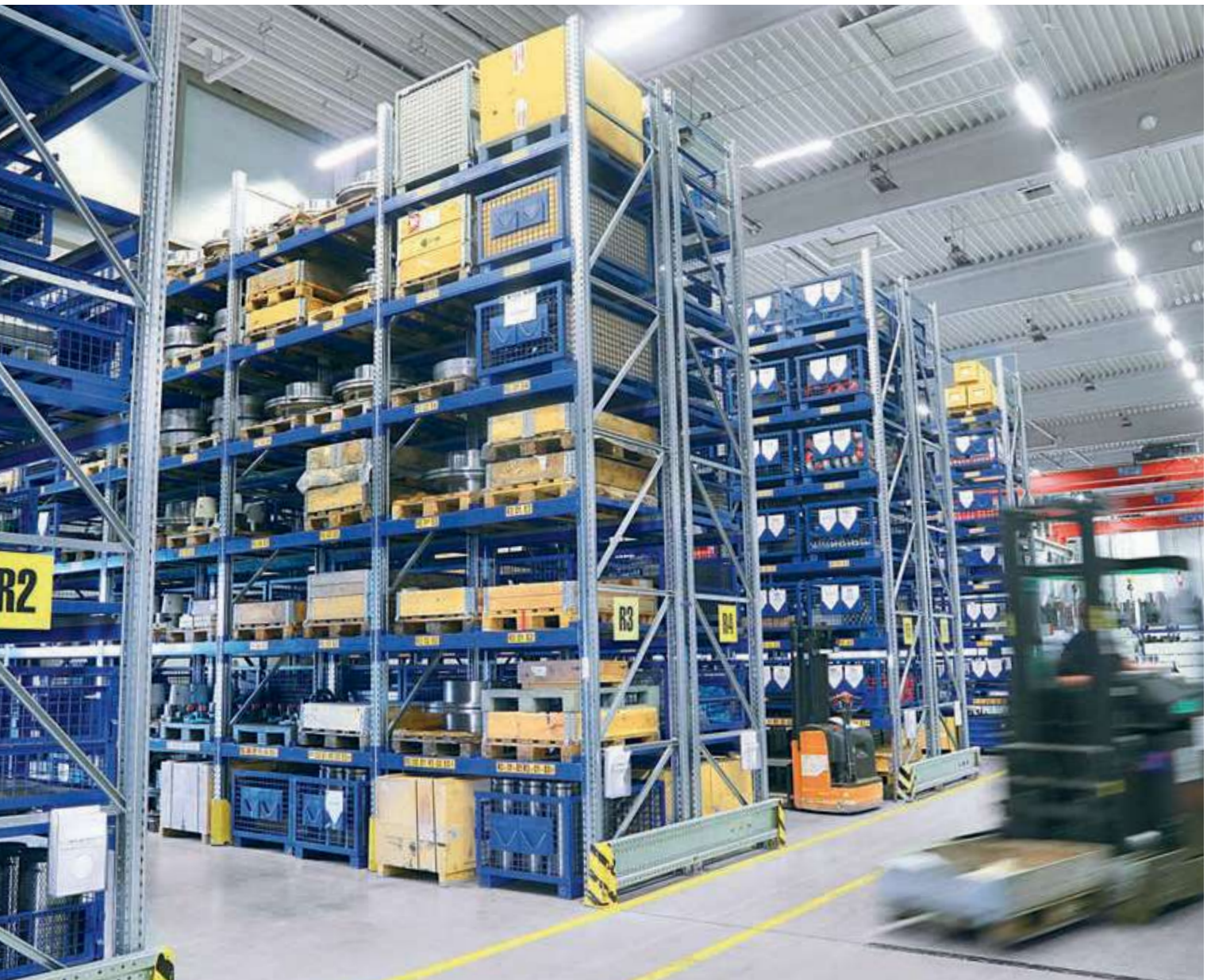


Figure 2: Maintenance factor – The over-dimensioning of lighting fixtures guarantees the same design power after a time t , without considering the reduction of the fixture's energy efficiency.

The DISMART system is ideal for warehouses and industrial plants where it is necessary to control lighting based on the amount of daylight in order to optimize consumptions and cut down running costs.





Main features



Guaranteed energy savings



Simple and fast installation



Commissioning without the need for specialized staff



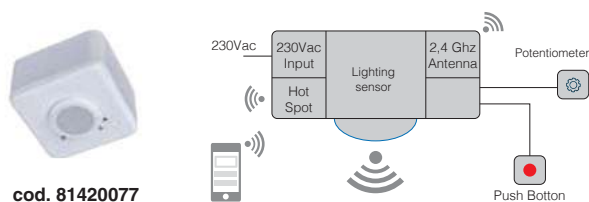
Reliable, safe and easy to use



Easy management via App

**ADVANCED
SOLUTION (INDOOR)**
WIRELESS INDUSTRIAL REMOTE CONTROL SYSTEM

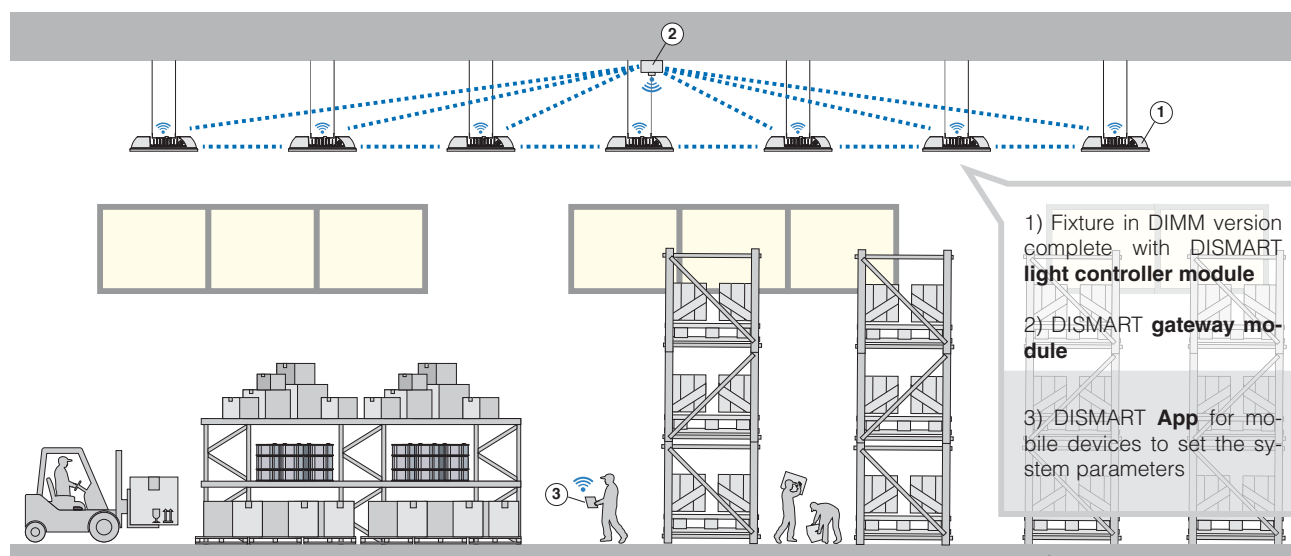
The system is made up of only two components in order to make installation and commissioning easier: **gateway module** and the lighting fixture with integrated **light controller module**.



Gateway module: it serves as the gateway for the communication nodes on the lighting fixtures. It contains a lighting sensor that constantly measures the lighting value [lux] in the area where it is installed. Based on its measurements, the system processes and sends, in real time, a radio frequency command (2.4 GHz) to the light controller module (receiver node) housed inside the lighting fixture. The installation of the device requires a power supply (230Vac) and the positioning in a central zone with respect to the group of lighting points that it will manage.

TECHNICAL-FUNCTIONAL FEATURES

Enclosure size	L 90mm x H 60mm x P 90mm
Electrical connection	Through push-in terminals
Power	100 - 240Vac
Clock	Built-in RCT
16-position selector switch	Determines the group of light points you want to manage [from 1 to 16 – Every photocell controls only one group]
Luminance sensor	Auto-regulation 0-80.000 lux [max 0.1 lux precision]
Connectivity	Wi-Fi for local access to device via APP
Digital input	1 digital input to activate one scene setting per event, configurable via APP
Potentiometer	Manual forcing of the dimming % on the lamps
Fixtures controlled	The system manages an endless number of fixtures
Communication frequency	Transceiver 2,4 GHz, sensibility -96 dBm, Tx power +4 dBm, data rate 1 MBps
Range of action	Max 50 metres outdoor point to point
Network	Auto-configuration MESH network
Transmission	Communication over 4 different channels [automatic selection of the most reliable channel]
Operating temperature	Ambient temperature -20 C + 70° C

System composition


DISMART System – Radiofrequency mesh network communication

Example of application: warehouses or industrial plants

WHAT TO ORDER:**KIT 1** - example of installation in industrial plants with:

- 20 pcs - art. 1789 Astro (330094-24)
- 1 pc - gateway DISMART (that incorporates a lighting sensor - 81420077)
- DISMART App for mobile devices (available for free download in app stores)





DISMART APP: SIMPLE, RELIABLE AND INTUITIVE

Disano presents the **DISMART app** for the full management of your lighting system, now available for free on <https://dismart.disano.it>.

Once installed, the gateway module will generate a local Wi-Fi network where you can connect your mobile device (smartphone, tablet...) and, by using the **DISMART app**, you will be able to set the parameters for the lighting fixtures belonging to your system.

The software designed to manage your system will allow you to programme, on a daily or weekly basis, the lighting levels you wish to guarantee to the module's installation area. After a simple programming process, the system will work autonomously, enabling you to activate one light setting "per event" that will replace the "hourly programming" for a pre-set time during the programming via the app.

CONNECTED AND READY FOR USE IN 3 SIMPLE STEPS



DOWNLOAD:
download the free version
of the app



CONFIGURE:
programme desired time slots, light
settings and lighting levels



MANAGE:
adjust the settings in real-time
to the desired level



The main features of the "APP DISMART" include:

- Connection parameters configuration via local wireless connection to the gateway mode
- Definition of 4 different lighting levels
- Definition of 5 different time slots into which you can divide the day (weekly mode)
- Definition of 35 different time slots into which you can divide the week (daily mode)
- Associate independently the levels of lighting to each time slot
- Option to create light scenes on a daily or weekly basis for each time slot
- Possibility to associate a level of lighting to keep when activating the forcing command

INITIAL APP CONFIGURATION



1) Choose a language on the home screen (Italian or English).



2) Select the sensor you want to control on the login screen: it must be associated to the Wi-Fi network created by the gateway.



3) Search the network created automatically by the gateway in the device's Wi-Fi settings (e.g. MAIA_00000001).



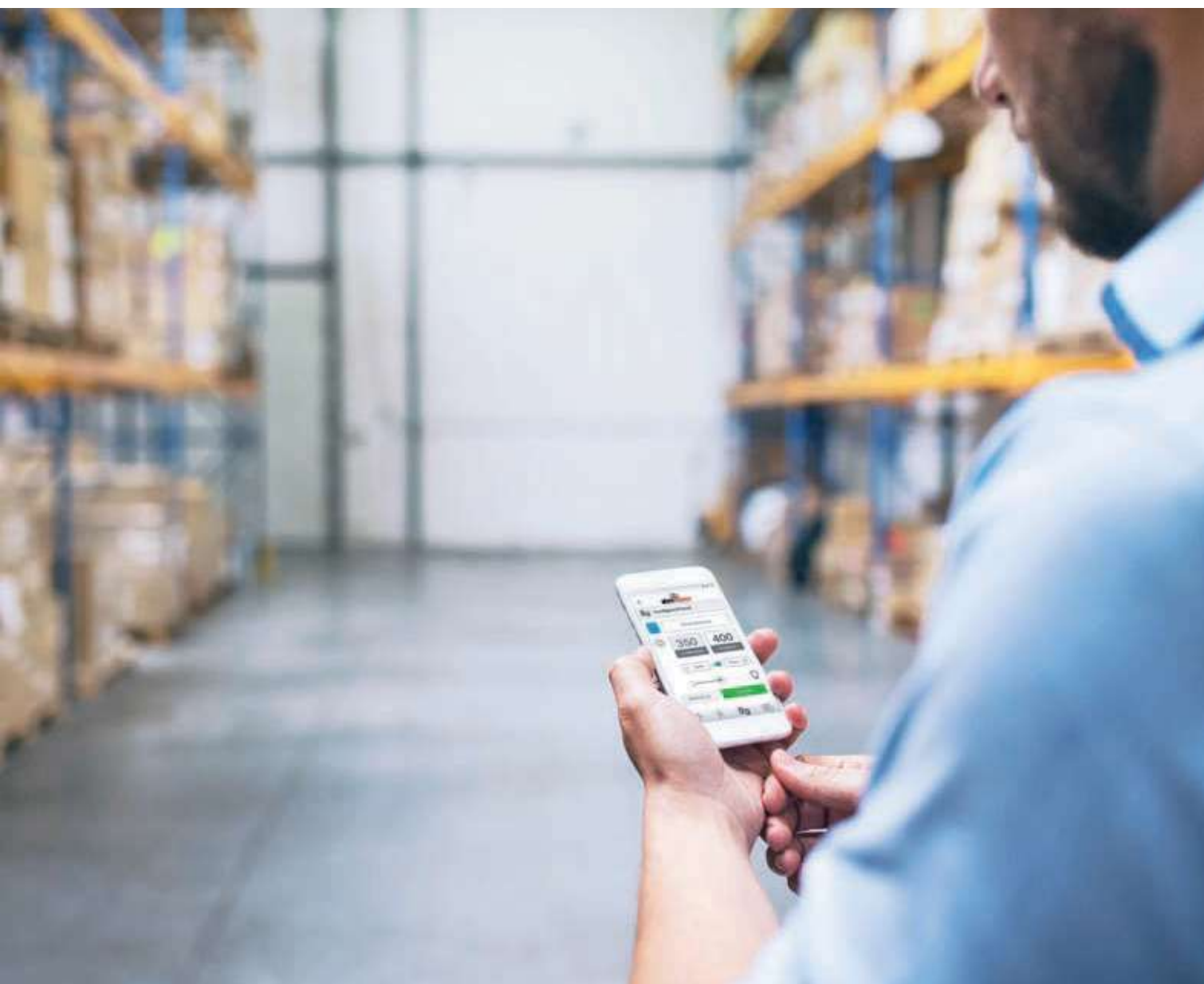
4) Select the network and enter the 8-digit password identifying the Wi-Fi network (e.g. 00000001). Once the password is entered, you will be taken back to the login screen.



5) Enter the 4-digit password 0000 on the login screen (this password is to be changed at a later time).



6) You can start programming on the lighting levels screen.



MAIN SCREENS



Hourly programming – You can define time slots and apply a given lighting level for a single time slot on a daily basis. Moreover, to reduce configuration time, you can duplicate the settings for a day onto all the rest of the days of the week or only some of them.



Lighting levels – You can define up to 4 lighting levels. You can also easily adjust the dimming rate in real-time until it reaches the desired lighting level. During the programming stage, levels can be applied to the individual time slots or to a specific event.



Event programming (external command/signal) – The configuration of this section allows Enabling/Disabling the “event programming” and defining the lighting level for a single event, using an external command (push button).



Options – In the options page you can find a series of tools that are used to give general settings and that are not connected with the system's programming.

ADVANCED SOLUTION (INDOOR)

PREDICTIVE LIGHTING: ARTIFICIAL INTELLIGENCE

Disano **ActiveAhead** is a new type of lighting system. **It does not need to be programmed because it learns on its own from the first day it is installed and shares what it knows with its constituting modules.**

Improved comfort

An ActiveAhead lighting fixture starts learning as soon as it is switched on. The fixture will probably learn the first motion patterns within a couple of hours/days based on the amount of free movements in the space. The ActiveAhead lighting fixture learns motion patterns constantly and will therefore adjust to possible changes, such as the installation or the removal of a wall.

Easy installation

ActiveAhead fixtures are extremely easy to install. It is sufficient to fix the fixtures in the desired position and turn on the general switch. No need for control cables, programming or configuration. ActiveAhead is a real plug-and-forget solution.

Smart energy savings

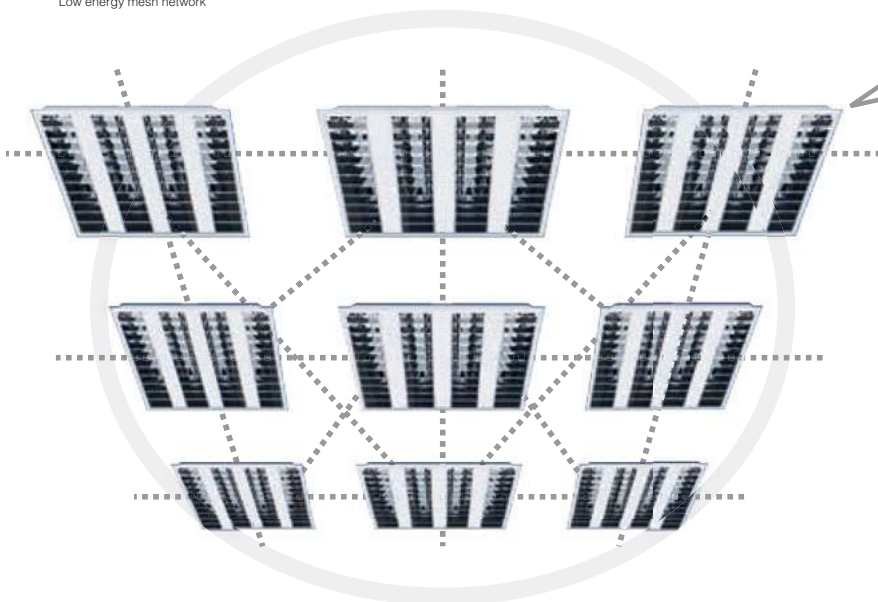
Compared to a regular lighting system, ActiveAhead takes comfort to a completely new level, while offering remarkable energy savings. In addition to increasing lighting levels in a predictive way, it dims lights in a smart way based on actual occupancy.

ActiveAhead is a smart lighting solution managed by a motion detector that automatically controls the light emitted by fixtures via wireless based on people's movements, the amount of sunlight entering a room and a combination of parameters that can be configured via app in a simple and intuitive way. Once installed, fixtures will establish a mesh network based on the low energy wireless Bluetooth technology. They exchange information to help identify the most commonly used paths of the occupants of the room. The system "learns" to predict where light is necessary so that the fixtures can react literally "one step ahead" a person. In addition to saving energy, **ActiveAhead** is simple to install, without requiring the need to add complicated cabling.

In general, **ActiveAhead** offers a good lighting experience in a space without the need for local adjustments. However, customizations, such as the adjustment of lower or higher lighting levels, turn off delays, groupings and assignments of work areas are possible via a smartphone with the **ActiveAhead** app. Moreover, **ActiveAhead**'s ability to predict motion models offers many advantages in applications such as stairways, corridors and underground parking spaces. **ActiveAhead** components can be used in lighting renovation projects where you cannot add cables.

ActiveAhead can be used in simple offices with open spaces, corridors, recreation areas and small and medium-sized meeting rooms with the need to control general lights.

The Disano products equipped with **ActiveAhead system** must be ordered with **subcode -25**. This solution can be applied to interior lighting fixtures such as **Minicomfort, Ibis and Heron**.



The ActiveAhead **App** allows you to define the parameters for lighting fixtures. The product, however, will work regardless of whether the app or any other software is configured or not. The app is available for all standard mobile devices (iPhone 4s, third-generation iPad or Android 4.4 and successive versions) equipped with Bluetooth Low Energy.

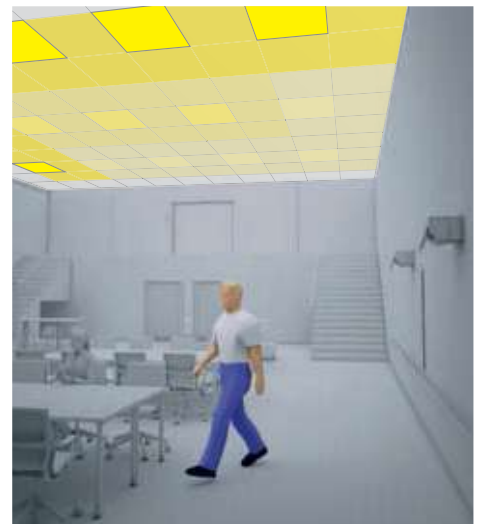
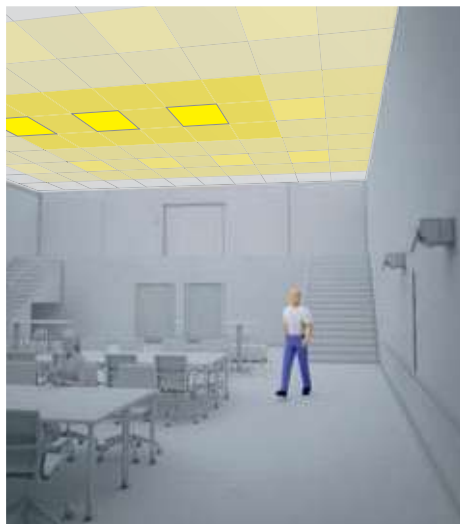
Example of application: offices, meeting rooms, stores, corridors, bathrooms, transit areas



WHAT TO ORDER:

- KIT 1** - example of installation in offices with:
- art. 841 Miniconfort (153535-25)

ActiveAhead is based on artificial intelligence that collects and analyzes the motion and lighting patterns detected by the sensors in each **ActiveAhead** lighting fixture. After collecting sufficient data to allow the algorithm to identify the most common motion patterns, it estimates when to control the lights based on the notification messages received by the nearby lighting systems in order to optimize both lighting levels and energy savings.



**SMART SOLUTION
(INDOOR)**

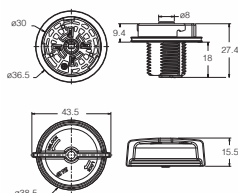
The Disano products with **Zhaga Socket** must be ordered with **subcode -0054**. The socket provides electrical and mechanical connection between the sensor and the fixture necessary to manage industrial lights effectively and efficiently. This solution applies to the following families of product:

Industrial fixtures: **Astro and Saturno**



Main characteristics of the **Zhaga socket**:

- Standard interface for all wireless networks
- 24V power, not prone to spikes/overvoltage
- Simple and fast installation of wireless controller
- Ready network: the initial wireless installation and successive update through a wireless network controller
- Quick and simple management of the wireless controller

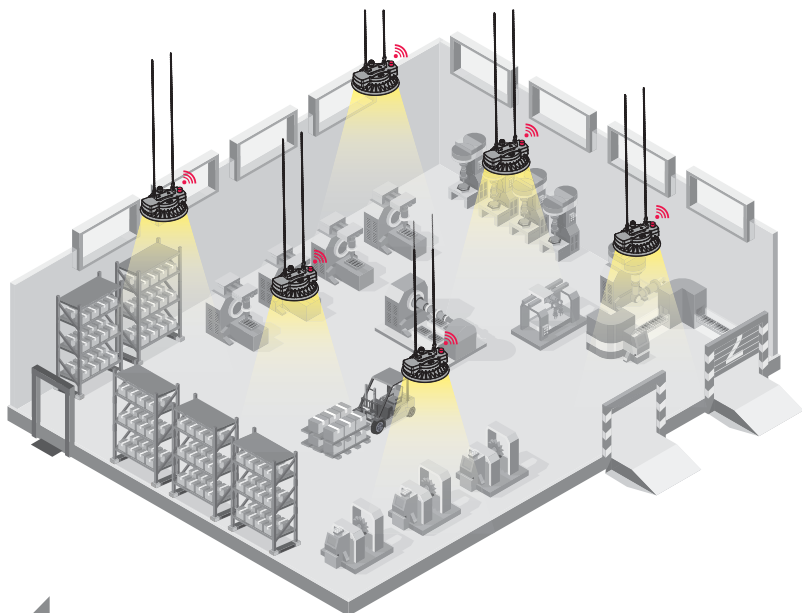


The **Zhaga Consortium** is an international consortium that includes many leading lighting manufacturers with the goal to standardize all the components regarding LED fixtures. With the new **Zhaga socket** (Book 18), the consortium standardized the mechanical and electrical interface between a wireless network and the fixtures' electronics.

The recent 2.0 version describes a smart interface between fixtures and communication nodes. It specifies the power and communication aspects in addition to mechanical ones and electrical PINs (characteristic of the previous 1.0 version). The Zhaga Consortium and the Digital Illumination Interface Alliance (DiiA) unveiled their joint certification zhaga-D4i programme that allows certified fixtures and nodes to bear the Zhaga and D4i logo. Book 18 Ed 2.0 allows any certified node to operate with any certified fixture.

Advantages:

- Easy tool-free mounting. The module is attached and secured with a bayonet clamp
- Compact dimensions for greater design flexibility
- The special (push-in) contacts reduce logistics problems arising from the need to use cables with various lengths for different lighting fixtures
- Single built-in seal that protects both the fixture and the modules, minimizing mounting times.

Example of application: warehouses or industrial plants


Thanks to the **Zhaga socket**, the end user can easily install any type of wireless controller (to be purchased separately) turning the fixture into a **SMART** fixture and therefore capable of being managed with the most common lighting control systems available on the market.

This type of solution is ideal in industrial environments where lights need to adjust constantly to maintain the desired lighting levels based on the amount of daylight inside.

WHAT TO ORDER:

With **subcode -0054** you can order fixtures with **ZHAGA SOCKET**

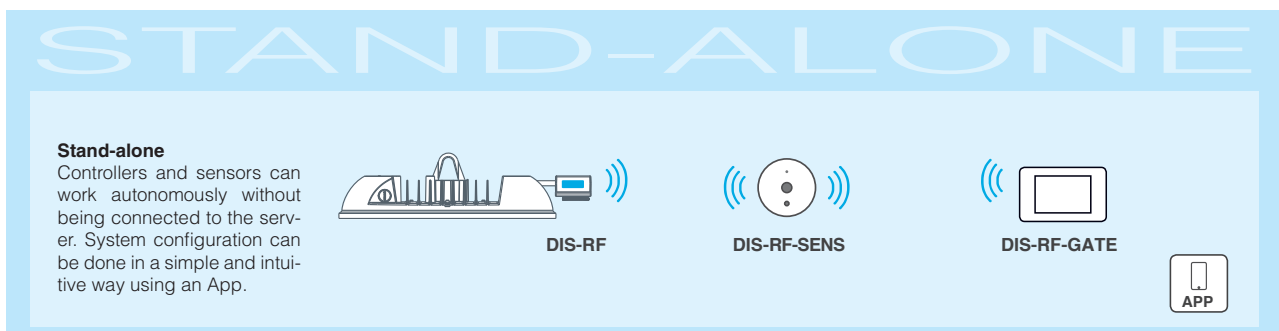


IoT SOLUTION (INDOOR)

Thanks to their modular and scalable architecture, **wireless** solutions can be used in **stand-alone** applications. It is therefore possible to meet project requirements with the available budget or the expected return on investment. In stand-alone solutions, systems can be configured through a simple and easy-to-use APP without the need for further assistance from specialized technicians.

System architecture

The system is made up of hardware and software modules. Communication with **DALI sub-code -0041** fixtures and sensors occurs via radio frequency (wireless) solutions.



art. DIS-RF



Wireless control module for DALI drivers

The DIS-RF radio module controls a single lighting fixture equipped with **DALI** driver via a wireless network. The module operates in the **868 MHz** band and can implement the Mesh Network functionality. The DIS-RF module can also work as a stand-alone controller or through a centralized system.

FEATURES

- 12 Vdc (50 mA) power supply
- 868 MHz frequency (915 upon request)
- 13 dBm transmission power, wire antenna
- DALI outlet (max 4 "broadcast" drivers)
- Digital and serial I/O interface

art. DIS-RF-SENS



Wireless light and motion sensor

The DIS-RF-SENS multi-sensor detects light intensity and the presence of moving people and objects, sending the information in the **868 MHz** band via a wireless network. DIS-RF-SENS can be installed at elevated heights (up to 12 m). The sensor must be connected to the mains without having to be cabled to the rest of the system.

FEATURES

- 100-240Vac 50-60 Hz power supply (max 3W)
- 868 MHz frequency, Mesh Network
- 13 dBm transmission power, wire antenna
- PIR motion sensor for elevated heights (max 12 m) and ambient light sensor
- Recessed installation in plastic housing (sensor front protection: IP54)
- Signal status LED

art. DIS-RF-GATE



868 MHz Bluetooth gateway

DIS-RF-GATE is a portable battery-powered gateway that allows the wireless configuration of systems through App, compatible with Low Energy Android iOS Bluetooth smartphones. The App allows the identification and grouping of 868 MHz wireless network nodes, configuring light and motion sensors. DIS-RF-GATE integrates a digital lux meter that can be used to cable light sensors and set the luminous levels to work in the DLR (Day Light Regulation) mode.

FEATURES

- 9-12 Vdc power supply (max 1W)
- Radio interface with Low Energy Bluetooth for smartphone connection
- ON button with automatic OFF function
- 4 configurable buttons to send wireless commands
- 868 MHz radio interface to control wireless systems

GUIDELINES ON HOW TO BUILD A CONTROL SYSTEM

Designing a control system with smart solutions is fast and simple! Thanks to **wireless** technologies and a modular and scalable architecture, it is possible to implement stand-alone and networked systems by developing lighting control devices and adding sensors and all the necessary hardware and software modules to network the system. To select the right technology, you must be aware of the system's intended use and determine whether you should use sensors, pre-setting and/or scheduling solutions.

STAND-ALONE SYSTEMS

Point-to-point wireless solution:

this solution is used when it is not possible to cable the fixtures' dimmers because each point needs to be replaced and the electrical installation cannot be changed. In this case, you will need to install a **DIS-RF**.

Motion/light sensors:

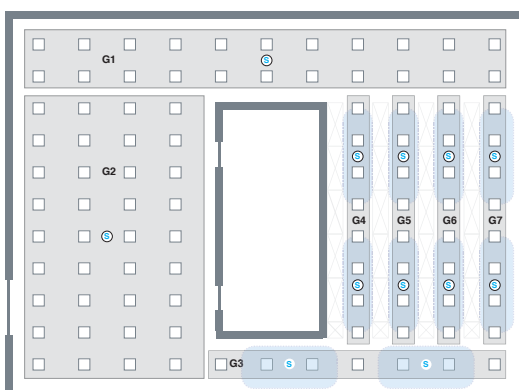
motion and light sensors can make you save energy when the area is occupied randomly throughout the day and when the room is illuminated by daylight. The **DIS-RF-SENS** multi-sensor is used when fixtures are installed at heights of up to 12 m above ground. It can be programmed as a motion sensor and/or a light sensor using an App.

Fully wireless system

When the electrical system cannot be changed, each replaced luminaire must be connected to the **DIS-RF** wireless controller. The system can be connected to standard DALI fixtures (without any modification needed) and then connected only to the power mains. If, instead, the electrical system can be changed or built from scratch as a new installation, it is often useful to implement a control system for one group of luminaires to be connected to each other through a dedicated dimming cable.



Example of application: industrial systems, retailing spaces, garages and similar areas



□ = DALI sub-code -0041 fixtures

⊙ = DIS-RF-SENS

All these systems illuminate very large spaces and require the fixtures to be divided into dedicated functional groups to control independent zones, each of which can include sensors or require manual commands and scheduling. By way of example, let us consider an industrial area, which includes transiting, production and storage zones.

Features required for each zone corresponding to different groups of fixtures:

Group G1 – Main access zone:

The luminaires in this zone must stay ON day and night and are controlled depending on the amount of daylight.

Group G2 – Production zone:

The luminaires in this zone must stay ON day and night and are controlled depending on the amount of daylight.

Group G3 – Transiting zone:

The luminaires in this zone must be switched ON only when sensors detect movement inside its scan area. The lighting level must be dimmed based on the amount of daylight. When no motion is detected lights switch ON to a background level corresponding to 10% of its total power and then switch OFF after a few minutes.

Groups G4-G7 – Storage zone:

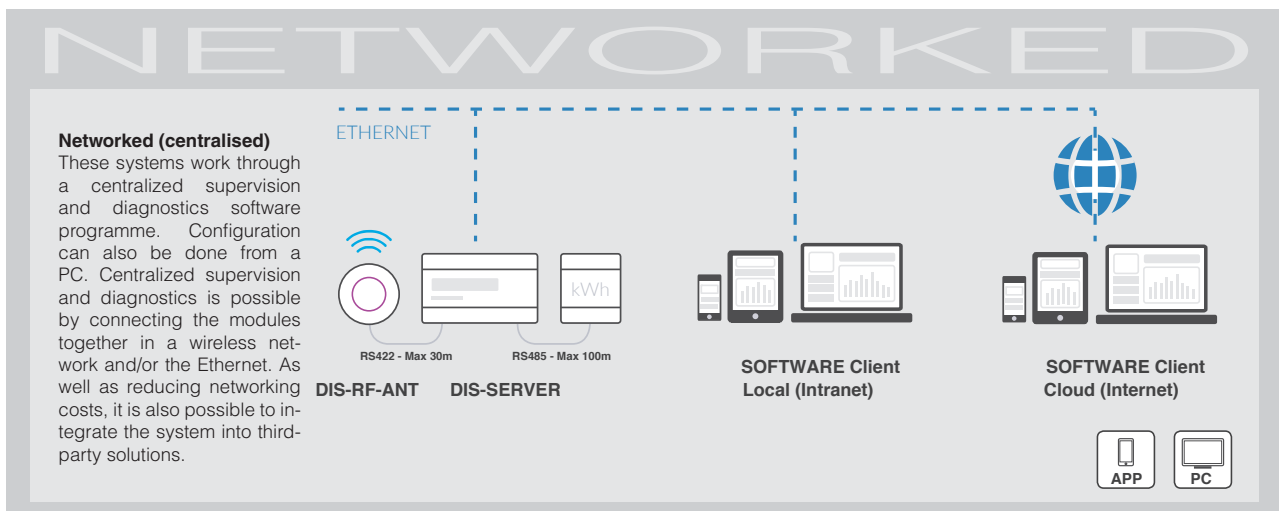
The luminaires illuminate the aisles of a store and behave like the luminaires of Group G3, i.e. depending on the amount of daylight. Each aisle must be independent from the other and the background lighting level must be 20%. Luminaires should never switch OFF completely.

IoT SOLUTION (INDOOR)

Thanks to their modular and scalable architecture, **wireless** solutions can be used in **network** applications. It is therefore possible to meet project requirements with the available budget or the expected return on investment. In networked systems, instead, you can use PCs to also control setup operations.

System architecture

The system is made up of hardware and software modules. Communication with **DALI sub-code -0041** fixtures and sensors occurs via cables (wired) or radio frequency (wireless) solutions.



art. DIS-SERVER + DIS-RF-ANT



Ethernet server with modular interfaces

The DIS-SERVER module allows the configuration, control and monitoring of cabled DALI lighting fixtures, wireless devices (controllers and sensors) and energy meters. Thanks to the integrated web server and the Ethernet interface, it can be controlled via web browser, allowing centralization and remote access from the software application. DIS-SERVER integrates a weekly scheduler, 8 opto-isolated digital inputs and 3 modular serial slots for the insertion of plug-in cards dedicated to various communication interfaces. Combined with an DIS-RF-ANT antenna, DIS-SERVER can control up to 250 wireless devices (controllers and sensors).

FEATURES

- 24 Vdc, 2A power supply
- Ethernet interface with RJ45 plug-in
- 8 opto-isolated digital inputs
- 10 programmable digital inputs (dipswitch)
- 3 modular serial slots (Serial 1, Serial 2, Serial 3)
- Integrated web server; weekly scheduler
- Web App optimized for mobile devices (tablets, smartphones)
- Internal SD memory (optional)
- Status LED: Power, SD, Serial 1, Serial 2, Serial 3, Error

ACCESSORIES

- Serial 1: RS422 interface for the DIS-RF-ANT connection
- Serial 2, Serial 3: DALI interface (64 drivers in addressable mode)
- Serial 3: RS485 interface for Modbus meters connection
- DIS-RF-ANT: 868 MHz wireless antenna with RS422 interface

CONNECTION

DIS-SERVER must be installed on DIN guide and thanks to the remote DIS-RF-ANT antenna, which needs to be in a visible position for the wireless devices, it can also be housed in skylight wells and shielded electrical boards. Peripherals can be connected by following the distances shown in the diagram.

Software



Software for centralized supervision and diagnostics

An application for the local (Intranet) and remote (Internet) control of each automation system integrated into the platform. Thanks to the software modular and scalable architecture it is capable of viewing the contents on each type of device equipped with a web browser, such as PCs, notebooks, tablets and smartphones. With the software it is possible to configure, monitor and command each integrated system and each connected device both through manual operations and through automatic algorithms based on calendar, events and conditional logic.

FEATURES

- Web-based application for Windows and Linux
- Standard MySQL database
- Configurable for Intranet and Cloud
- Control of the system through graphical maps
- User profiling for single-site and multi-site applications
- Programming of activities based on time/date
- Control of energy consumptions
- Export of technical data and reports
- Integration with other Building Automation systems (customizable plug-ins)
- Export of data to BMS and SCADA systems (web services)



HOME: this section can be fully customized like any normal HTML page. It displays technical, logistic and marketing information.



ENERGY: this section allows you to graphically display measured energy consumptions and export them into a .csv file.



MAPS: this section displays systems as tree lists and charts, organized in hierarchies to ensure simple and intuitive navigation.



SCHEDULER: this section allows you to create advanced algorithms based on hourly or calendar programming.

APP



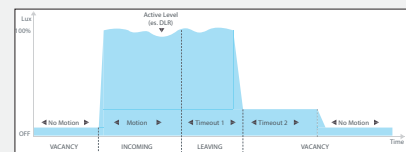
App for the configuration of wireless devices

With the application, available for Apple and Android smartphones, it is possible to set all operating parameters of wireless systems equipped with RF 868 MHz interface. The simple and intuitive graphical interface allows the selection of various pre-configured usage applications, which will only require fine-tuning such operating parameters as motion timeouts and the desired lighting levels. The Advanced section is used to configure more professional functionalities, typically used in network systems.

FEATURES

- Application for Apple and Android smartphones
- Simple and user-friendly graphical interface
- Configuration of wireless devices operating in 868 MHz
- **"Basic"** section for the configuration of simple functions
- Pre-configured usage profiles for the most common applications
- Customization of operating parameters (timeout, lighting levels, etc.)
- Assignment of devices to their corresponding work groups
- **"Advanced"** section for the configuration of more professional functionalities
- Calibration of lighting sensors through the built-in lux meter in RF-WiFi
- Saving of favourite configurations

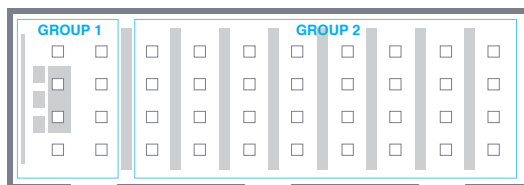
The App interface allows the customization of simple operating parameters, such as the timeouts determining the transitions based on motion and the desired lighting levels under various conditions.





Examples of use: offices, meeting rooms, open spaces, entrance halls, corridors and community areas

All these systems are made to illuminate spaces in office buildings with mounting heights of up to max. 4 m, typically with false ceilings. The "local" cabling of controllers and sensors is always possible, even in case of relamping solutions. Therefore, we use systems that allow managing independent areas through sensors and manual commands. Thanks to the 868 MHz wireless network, the system can be easily supervised from the software.



□ = DALI sub-code -0041 fixtures

Conference rooms

In this type of rooms, lighting control is connected with the need to create static light settings to adjust levels to group of fixtures. We typically use DALI fixtures with systems that allow implementing the several lighting scenes manually through standard buttons or mobile devices.

GUIDELINES ON HOW TO BUILD A CONTROL SYSTEM

Designing a control system with smart solutions is fast and simple! Thanks to **wireless** technologies and a modular and scalable architecture, it is possible to implement stand-alone and networked systems by developing lighting control devices and adding sensors and all the necessary hardware and software modules to network the system. To select the right technology, you must be aware of the system's intended use and determine whether you should use sensors, pre-setting and/or scheduling solutions.

NETWORKED SYSTEMS

Presetting and scheduling:

these functions are particularly useful when the system is required to meet different needs throughout the day or week. For example, you can set lower lighting levels when performing maintenance and cleaning, and higher levels during the workday. To control the system based on preset scheduling times and different work modes you must use a **DIS-SERVER**.

Centralized supervision/diagnostics software:

this application is used for the local (Intranet) and remote (Internet) control of each automation system that can be integrated in the platform. With the software, it is possible to configure, monitor and command each integrated system and connected device through manual operations and automatic algorithms using the calendar, events and conditional logic on any device equipped with a web browser, including PCs, notebooks, tablets and smartphones.

Systems with advances functions

To control zones in manual mode and through time scheduling, it is necessary to use **DIS-SERVER**. With additional hardware and software, it will be possible to connect the system to the Ethernet network and control it through an integrated web APP remotely (Internet). The system can be monitored and controlled through graphical maps with the software installed on a PC or pre-loaded on the server. Thanks to this software, it is also possible to control the system remotely through Intranet-based and/or Cloud-based solutions.

IoT SOLUTION (INDOOR)

Energy efficiency has guided the evolution of lighting, but the next step will take it in the era of the Internet of Things (IoT). The main innovation of this phase consists in the replacement of the electrical supply of the LED lights with an alternative source already present - Power over Ethernet (PoE).

PoE supplies energy and data via a cat. 5 or cat. 6 cable from a switch directly to the network port of a connected device. This allows, for example, network administrators to distribute devices, such as IP surveillance cameras, in places that do not have access to a nearby current socket. PoE not only makes

implementation easier, but it also eliminates the need for a professional electrician to install additional electrical circuitry in the office.

Network devices can also supply energy to LED lights through a standard cable. The ultra-low power requirement of the LED lights allows the PoE to power these light sources. LED lights boast an average duration of about 50000 hours and use less power than fluorescent lamps. The PoE 802.3af standard - the standard with the lowest power - produces up to 15.4 watt of power and can easily support the standard requirements of LED lighting applications. PoE will soon have the possibility to supply more power, reaching up to 60 watt, covering 80% of indoor lighting requirements. The PoE technology not only simplifies the implementation, it connects the LED lights to the Internet and provides users with access to the "Smart Lighting" technology. With the Internet and "Smart Lighting", users can control their lighting systems remotely with their own mobile client device.



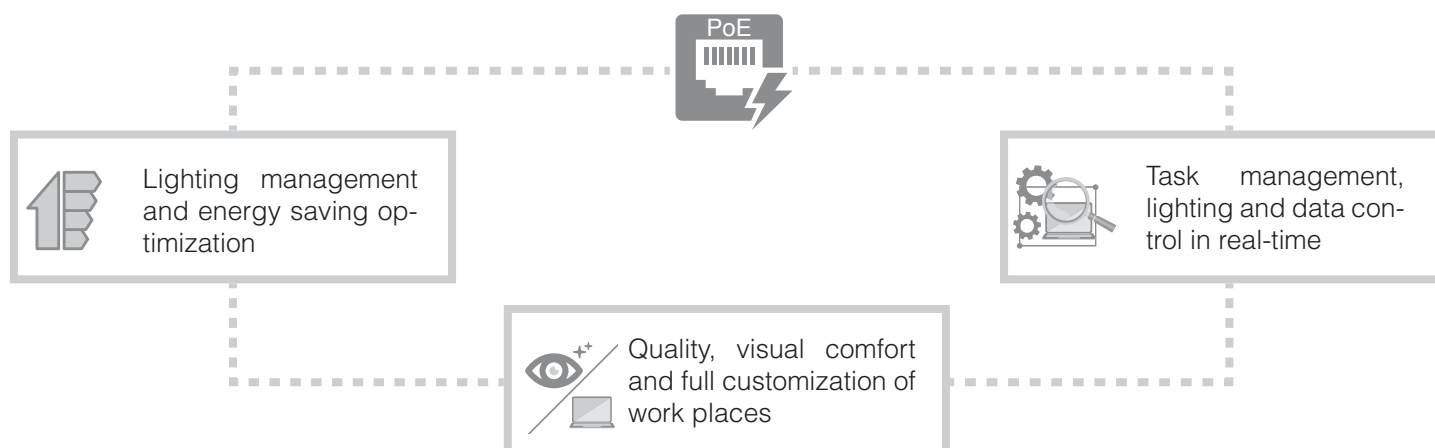
This system offers a scalable and open architecture for IoT systems that can be updated for future IPv6 connectivity up to the final node (lighting fixture). It allows any device, including lighting fixtures and cabled and wireless sensors, to communicate directly over a shared network without using special gateways. Disano offers the first hybrid lighting fixture that allows accessing all lighting design data without a gateway, regardless of type, either wireless or through cables.

Once you identified the right solution, you will no longer need to choose: you will be able to configure the system in wireless or in PoE or both. The PoE solution replaces complex bus systems and traditional power infrastructure, offering all the benefits of a network shared by telephones, CCTV or other PoE-based systems that require data exchange. The wireless solution is a IoT low-cost lighting solution that is becoming more widely used in new or renovated buildings. The last part of the system is another hybrid component.

The new wireless communication module connects the stable and scalable wireless module with the DALI system, supplied with sophisticated, smart and intuitive tools for an efficient programming and commissioning. net4more is a scalable and open system with a technology that can be used by any lighting fixture manufacturer.

Advantages and benefits

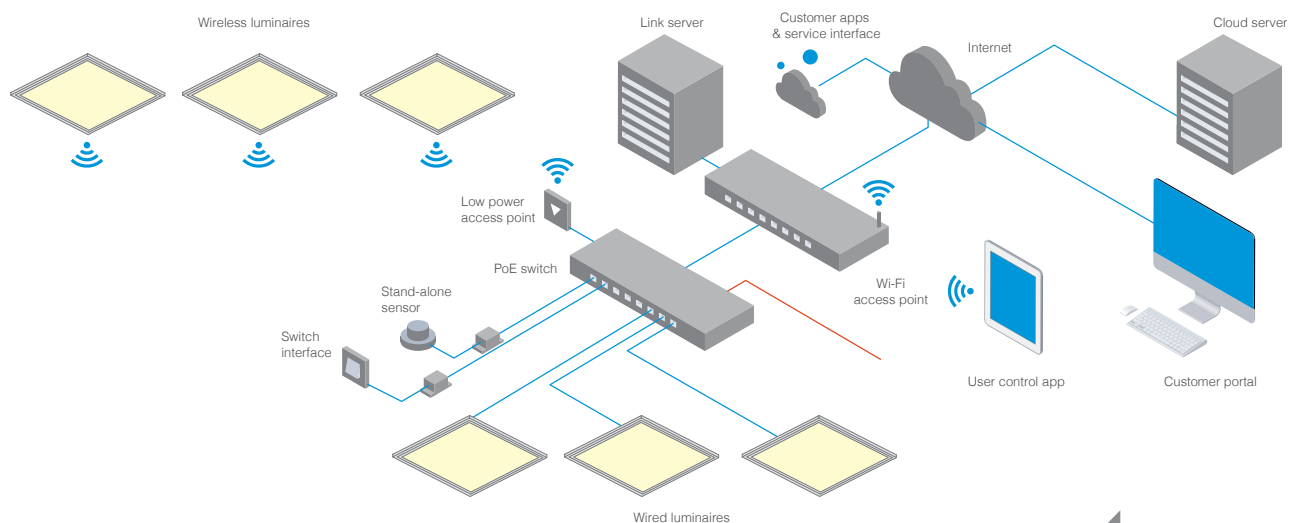
The connected lighting system can exploit the LED and PoE technology, eliminating the electrical power and combining the IT infrastructure with the lighting infrastructure. This benchmark technology allows managing services that "standard" lighting systems alone cannot manage. A lighting system carefully designed to supply the correct amount and quality of light in different times of the day can have an extremely positive effect on our concentration, relaxation and quality of sleep, helping us to feel more comfortable in our work places.





System composition

Unlike normal IoT devices that work with automation standards like Z-Wave, Zigbee BLE, LED lighting with PoE does not require a home gateway to work. Lights receive their own IP address once they are connected to a LAN network through an Ethernet cable, significantly reducing the components of the management infrastructure.



BASIC SOLUTION (OUTDOOR)

VIRTUAL MIDNIGHT, A SMART DEVICE THAT SAVES ENERGY

The **virtual midnight** calculation is based on a mechanism that can be applied to public lights, and more generally to outdoor luminaires, which allow programming a reduction of the luminous flux, when you don't need the luminaire to operate at full power all the time. For example, during the central hours of the night, in areas where vehicle and pedestrian traffic is low, a **reduction of the luminous flux will keep lighting levels within safety standards while saving energy**. Multiply by hundreds or even

thousands of street lamps and the savings become significant. This type of device, applied to a LED lighting system, results in considerable energy savings compared to old technology.

It is worth noting that the initial system setup – if necessary – can be easily customized from the operating board. Therefore, the system doesn't require much effort or costs for running and maintenance. In this way, town administrators have the chance to make their streets, squares, big and small neighbourhoods safer and more liveable with a contained investment, which is mostly compensated by the energy savings.

High-quality, eco-friendly technology within anyone's reach – the advantages

Lower consumptions using light only when and where needed

No need to change the whole system

A preset, easily customizable mechanism with no running and maintenance costs

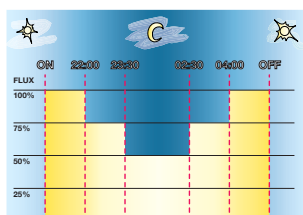
An eco-friendly solution, which is based on a smart technology that anyone can afford

In order to exploit the energy efficiency of LED technology, the lighting fixtures integrate an electronic system that is based on the use of a microprocessor which controls the luminous flux from 5% to 100% with proportional energy savings. This enables to operate the lighting fixture at reduced power for some installations, according to programmable periods using dedicated sensors, such as light sensors or presence detectors. In particular, according to the UNI-11248:2007 road standard, it is possible to classify roads dynamically into two categories, and reduce the luminous flux at night when traffic is low. Dynamic light is also recommended for less crowded places like covered car parks and underground stations.

VIRTUAL MIDNIGHT

To increase energy savings at night when there are fewer people and vehicles around, a lighting fixture can be programmed according to a specific profile (customizable on request). The fixture reduces its luminous flux through a self-learning process which, depending on the previous switching on and off times, will determine a hypothetical "virtual midnight". This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The "virtual midnight" is the reference point for dimming lights according to the desired profile. The device is integrated in the LED driver and therefore does not require any modification to the system.

In order for the system to function correctly, the system must be adjusted by a device that turns the system on and off on a regular basis every day.

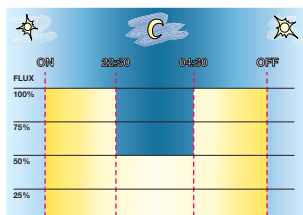


Factory settings	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	75%
23:30 ÷ 02:30	50%
02:30 ÷ 04:00	75%
04:00 ÷ off	100%

Virtual Midnight subcode -30: fixtures are equipped with a device to reduce flux in **4 steps** based on the calculation of the virtual midnight.

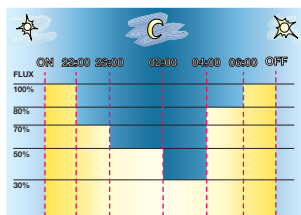
ATTENTION: original settings and time slots for the "virtual midnight" value can be customized in up to 8 steps upon request.

Example of virtual midnight in 2 steps



Settings upon request	
Time	Flux
on ÷ 22:30	100%
22:30 ÷ 04:30	50%
04:30 ÷ off	100%

Example of virtual midnight in 5 steps



Settings upon request	
Time	Flux
on ÷ 22:00	100%
22:00 ÷ 23:30	70%
23:30 ÷ 02:00	50%
02:00 ÷ 04:00	30%
04:00 ÷ 06:00	80%
06:00 ÷ off	100%

WHAT TO ORDER:

subcode -30 you can order fixtures equipped with
VIRTUAL MIDNIGHT DEVICE



Example of fixtures with VIRTUAL MIDNIGHT



VOLO



MINI GIOVI



SELLA

SMART SOLUTION (OUTDOOR)

To monitor and manage public lighting centrally, lighting fixtures will always be more equipped with wireless controls that will allow their integration with the IoT. Today the market offers two solutions: **NEMA and ZHAGA**. Both solutions offer an electrical and mechanical connection between the control antenna and the lighting fixture.

Applications: ideal for use in public or private street lights, car parks, cycle and pedestrian lanes, corridors within hospitals, schools and industrial plants and urban amenities and generally in any area where you need a "smart" control of lighting fixtures.

Nema Socket

Disano's luminaires with **subcode -40** come with the **Nema Socket** to enable the electrical and mechanical connection between the sensor and the light fixture. The socket is made in plastic material and is complete with a gasket to ensure perfect IP protection; moreover, thanks to its removable structure, it can be installed directly onto the luminaire's body (without accessing any internal parts) and **without using tools**, hence facilitating future maintenance; **upon request**, the sealing cap can be installed. The Nema Socket can be adapted to **5/7 poles**: 3 for the electrical connection, and the remaining 2/4 to carry 1/10V or DALI signals; it is also perfectly suited to integrate all "smart" devices for remote lighting control.

Upon request, the
sealing cap can be installed



The ANSI C136 standard defines the dimensions of the socket, the type of block and other details. It provides a connection between the power grid and the twist-lock control signals. The **Nema socket** in lighting fixtures can have 5 or 7 terminals:

3 terminals are used for the connection of the power supplier, the remaining 2 or 4 terminals are used to carry the pilot signal and the other signals. The power terminals can carry current up to 15A. Signal terminals are limited to 100mA. Signal contacts can support (0)1/10VDC or DALI protocol. The sockets are made in durable polycarbonate and in order to prevent water from leaking inside the fixture, it is sealed at the bottom. This socket, which can be opened and closed manually without the use of tools, will be the essential solution for smart city applications.

Nema sockets are very popular in the United States, especially in outdoor lighting installations, such as street lights. A lighting fixture with a Nema socket is opened to new developments. In fact, when a new technology is developed for the control system, the device can be changed/upgraded without the need to change the lighting fixtures.

Advantages:

- Easy installation without tools
- Up to 355-degree rotation
- Robust twist-lock contacts for reliable power interconnection
- The socket is pre-terminated with wire conductors to facilitate the integration into new and existing lighting systems
- It accepts DIMM dimmable photocells (ANSI standard) to enable connection between the photocell and the lighting fixture
- Available with two or four dimming contacts to support dimming protocols over one or two channels

Zhaga Socket

Disano's fixtures with **subcode -0054** are compatible with the **Zhaga Socket** that ensures an electric and mechanical connection between the sensor and the luminaire, simplifying the complex architecture of street lighting installations and removing the need for accessory modules and cabling. The **Zhaga Socket** consists of a standard interface between the receptacle on the fixture and its basic components and cover that, together, form the housing of the control module. The built-in low friction seals, that can be coupled together, protect both the fixture and the module. UV-resistant and strong materials complete the features of this reliable connector.

Sealing cap
supplied as standard



The **Zhaga Consortium** is an international consortium that includes many leading lighting manufacturers with the goal to standardize all the components regarding LED fixtures. With the new **Zhaga socket** (Book 18), the consortium standardized the mechanical and electrical interface between a wireless network and the fixtures' electronics.

The recent 2.0 version describes a smart interface between fixtures and communication nodes. It specifies the power and communication aspects in addition to mechanical ones and electrical PINs (characteristic of the previous 1.0 version). The Zhaga Consortium and the Digital Illumination Interface Alliance (DiiA) unveiled their joint certification zhaga-D4i programme that allows certified fixtures and nodes to bear the Zhaga and D4i logo. Book 18 Ed 2.0 allows any certified node to operate with any certified fixture.

Main characteristics of the Zhaga socket:

- Standard interface for all wireless networks
- 24V power, not prone to spikes/overvoltage
- Simple and fast installation of wireless controller
- Less aesthetical impact than a Nema socket
- Ready network: the initial wireless installation and successive update through a wireless network controller
- Quick and simple management of the wireless controller

Advantages:

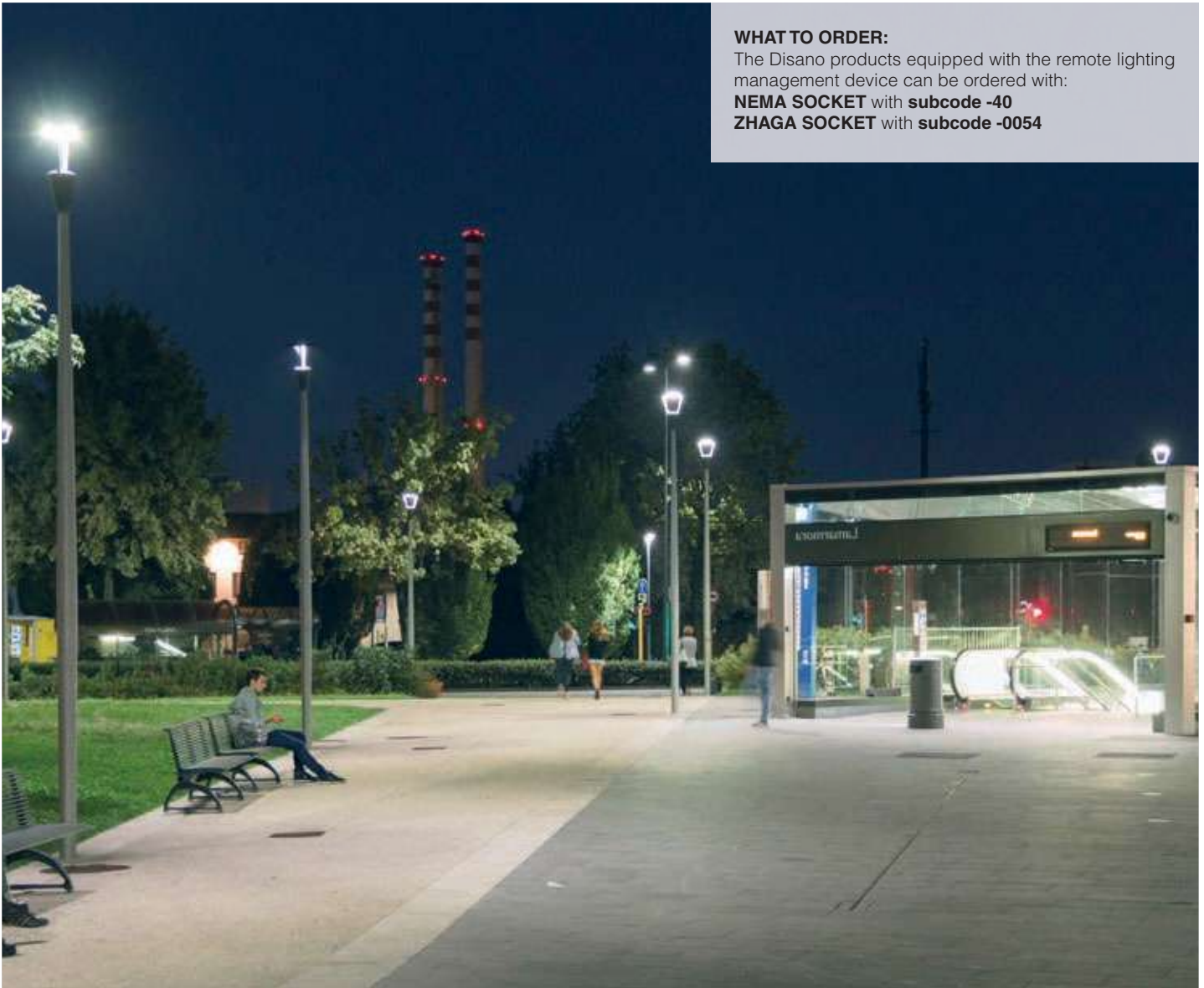
- Easy tool-free mounting. The module is attached and secured with a bayonet clamp
- Compact dimensions for greater design flexibility
- The special (push-in) contacts reduce logistics problems arising from the need to use cables with various lengths for different lighting fixtures
- Single built-in seal that protects both the fixture and the modules, minimizing mounting times.

WHAT TO ORDER:

The Disano products equipped with the remote lighting management device can be ordered with:

NEMA SOCKET with **subcode -40**

ZHAGA SOCKET with **subcode -0054**



Example of fixtures with ZHAGA and NEMA SOCKETS

Nema Socket (subcode -40)



ISEO

Zhaga Socket (subcode -0054)



VISCONTI 2.0



ISCHIA



MINI GIOVI

**SMART SOLUTION
(OUTDOOR)**
WIRELESS ANTENNAS WITH REMOTE CONTROL

Thanks to Zhaga compatibility, remote communication modules can now be effectively used for lighting control and data transmission. Each RF node has the necessary "intelligence" to control multiple DALI devices while simultaneously setting up a stable wireless network.

The antenna is installed directly to the supplied Zhaga socket (at the top of the luminaire) and allows easy control and individual adjustment of DALI devices.



Bluetooth™
Low energy mesh network

WIRELESS ANTENNA for DALI-2 Street Lighting


cod. 986445-00



cod. 986446-00

Main features:

- Each control unit stores information about its own configuration and the configuration of the rest of the controls installed in the same network.
- Configuration and control can be done from a mobile phone or a tablet using the free CASAMBI APP (available for iOS and Android).
- Remote control of the installation is also possible via cloud through a Casambi router connected to the Internet.
- Electrical connection and mechanical fixing are done through standard ZHAGA Book 18 compatible socket by twisting and locking into place, without tools.
- No need for hubs, master devices, computers or programmes. Communication is via a Bluetooth 4.0 mesh network.

Operation and configuration:

From the **CASAMBI APP** it is possible to group luminaires by street, set dimming levels according to time, schedule special events for particular days, etc. The communication range between controllers is up to **70m** outdoors. Since devices are operating on a mesh network, controllers communicate with each other until the information reaches the controller for which it was intended, even if it is far away. During setup it is sufficient to be located in the range of one of the controllers.

Communication security is guaranteed through encrypted messages. It is possible to set different access levels and configuration permissions. Network configuration information can optionally be stored in the CASAMBI cloud and restored if necessary. When a controller receives a firmware update, it will automatically retransmit the update to the other controllers. Each network can support up to **250 controllers**.

Several operating modes are possible (on/off, 0-100% dimming, circadian control, tunable white, etc.). Different communication profiles can be configured to meet the requirements of different luminaires. The monitoring of internal temperature is done via the Casambi App. Information is received from the associated driver (energy consumption, temperature, etc.) and sent to the cloud.

FEATURES

Nominal input voltage	24 VDC SELV
Energy consump. in standby mode	0,5W
Energy consump. in operating mode	0,6W
Control interface	DALI/DALI2
DALI output current	40mA max.
Dimming	0-100%
RF communication interface	Bluetooth 4.0 BLE
RF communication protocol	Casambi
Wireless class	Class 2
Firmware update	OTA (Over the air)
Casing material	PC con trattamento UV
IP - IK	66 - 09
Connectors	ZHAGA Book 18
Dimensions (diameter - height)	986445-00 Ø48mm. H 44mm
	986446-00 Ø80mm. H 50mm

PHOTOCELL
cod. 986450-00



ISCHIA

LIGHTING-MOTION SENSOR
cod. 986451-00



GIOVI

WIRELESS ANTENNAS
cod. 986445-00



GARDA

WIRELESS ANTENNAS
cod. 986446-00



MINI GIOVI

IoT SOLUTION (OUTDOOR)

What is a smart city?

A smart city is a city where there is a better quality of life and where public spaces can help citizens achieve their full potential and move more freely, while saving time and respecting the environment. The intelligence of a «Smart City» is a distributed, shared, horizontal and social intelligence. It is an intelligence that promotes the participation of citizens and the organization of the city towards a greater optimization of resources and results. Energy consumption, public resource use and time are all optimized.



With the Web and the new technologies, access to services is easier and public spaces can be organized to favour mobility, save time and turn our cities smarter. Remote management systems make objects more intelligent and recognizable, so that they can communicate data and provide access to aggregated information. Thanks to a more efficient use of the Web, everything within a city (urban fittings, public buildings, monuments, etc.) can play an active role and become collectors and distributors of information about traffic, energy consumption, services and assistance to citizens, cultural and touristic attractions and much more.



The fixture can be equipped with a **control system which provides lighting managers with the ability to improve the performance of urban and street lighting** installations while saving costs by lowering energy usage, optimizing operation and reducing CO₂ emissions. The system incorporates the latest technologies in power electronics, communications and IoT. This makes possible, among other features, an on/off scheduled switching, a dynamic programming of lighting levels, map-based visualizations, automatic alarm reports, real-time fixture monitoring and maintenance scheduling of every single luminaire of multiple installations at once. The system has a friendly and secure web-based user interface which can be operated anywhere and anytime from any web-connected device such as computers, smartphones and tablets providing real time and accurate control of the lighting infrastructure.

System Highlights

- Flexible solution
 - Valid for new installations as well as for lighting renovation
 - Autonomous system but integrable with other city services platforms
 - Valid worldwide
 - Compatible with most Smart City services platforms
- Values and revenues
 - Better lighting performance
 - Money savings
 - Energy costs reduction
 - Operation costs reduction
- Users
 - Municipalities and County Councils
 - Smart City platforms operators
 - Managers of large infrastructure
- Applications
 - Street and residential lighting (streets, roads)
 - Urban & architectural lighting (monuments, public spaces)
 - Large infrastructure lighting (airports, ports)
 - Large areas and sport lighting (car parks, stadiums)
 - Urban events lighting (celebrations, demonstrations)

System Architecture & Components

- System architecture
 - Smart power electronics: LED drivers
 - Wireless network hardware
 - RF Nodes and GSM Gateways
 - Cloud-based data acquisition and network management
 - Management software suite (Network & data management)
 - Web-based multi-device user friendly interface
- Technical aspects
 - Fully programmable electrical parameters and functionalities
 - Connectivity of sensors
 - Self-diagnosis, notification of alarms
 - Mains voltage and frequency monitoring
 - High efficiency
- Lighting network nodes
 - Multi-hop wireless mesh network
 - IP-based protocol, broad coverage
 - Automatic neighbour discovery, self-organization, ad hoc configuration
 - Extensibility, interoperability, open standards
 - Robust link, reliable and high-performance network
 - Additional sensor data acquisition (optional)
- Gateway
 - Mesh network concentrator
 - 2G/3G/LTE network gateway
 - Time and date precise synchron
- Central host and database
 - Local or cloud hosting available
 - End-to-end secured system
 - Smart City and other horizontal management platforms integrability
 - Multi-level data interchange capabilities, app interfaces
 - Business Intelligence and data analytics
- Management Software Suite
 - Lighting configuration, management and maintenance
 - Easy installation, test capabilities
 - Data network management and configuration
 - Reports, statistics and data visualization tools
- Fast commissioning
 - Ease of installation
 - Assembling outside fitting
 - Remote configuration
 - Reliable, outdoor-proof
- Accuracy
 - GPS accurate location
 - Point-to-point management
 - Real-time operation



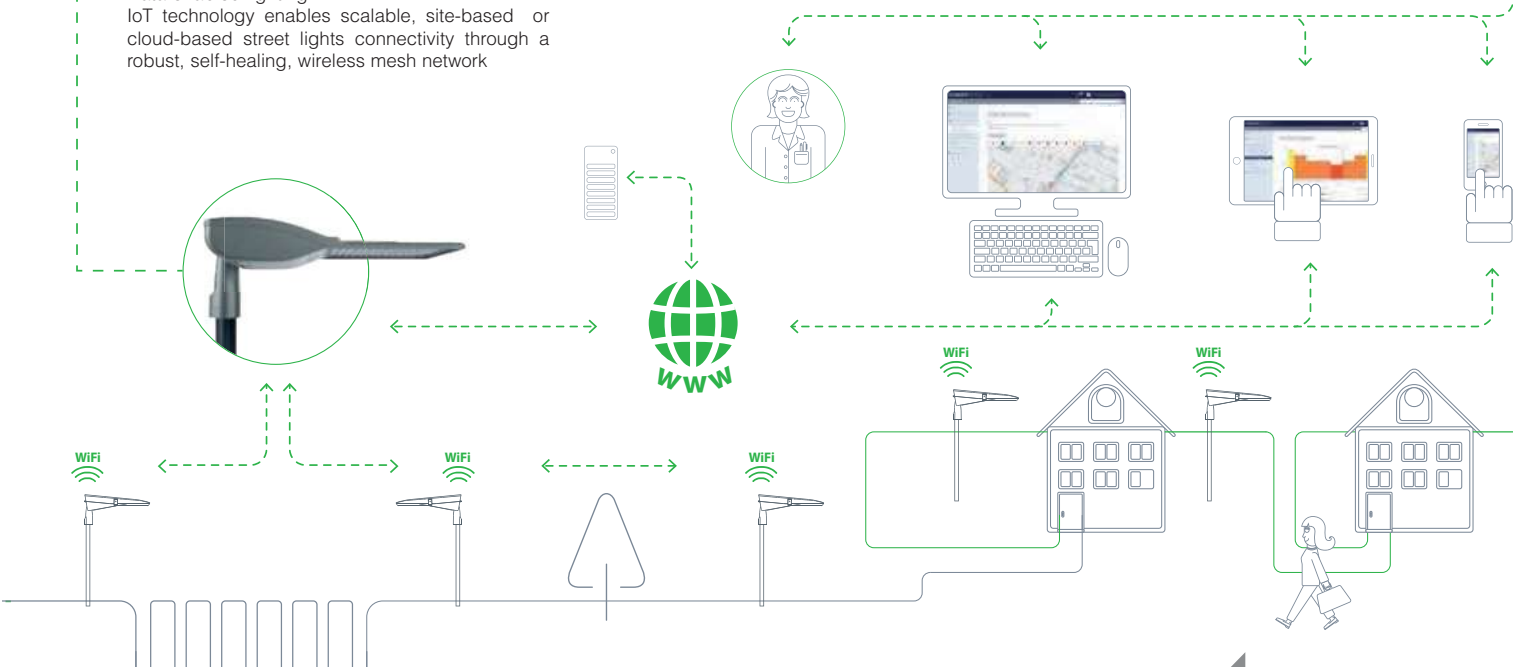
Smart City Lighting

- Flexible and avant-garde lighting
 - Programmable lighting
 - Dynamic lighting
 - Reactive to events
 - Makes possible a human centric lighting
 - Increases citizen satisfaction
 - Helps to improve safety on streets
 - Compatible with most existing Smart City & urban services management platforms and easily adaptable thanks to its open architecture
- Environmental sustainability
 - Energy savings
 - Reduction of CO₂ footprint
 - Lower lighting pollution
- Data-enabled lighting

IoT technology enables scalable, site-based or cloud-based street lights connectivity through a robust, self-healing, wireless mesh network

User Friendly Web-based Interface

- Main functionalities
 - Easy lighting levels & timing configuration
 - Creation of customized lighting schedules
 - Energy consumption monitoring
 - Power supply monitoring
 - Alarms and events reporting
 - Operation time recording
 - Geolocation and mapping of luminaires (multiple map choice)
 - Easy allocation of luminaires by town, street, coordinates, type
 - Maintenance planning
 - Multiple users administration
- Optimum lighting maintenance
 - Possibility of preventive maintenance
 - Optimization of reactive maintenance
- Privacy and security commitment
 - Encrypted communications
 - Safe communications exchange through highest encryption levels
 - Database access security
 - Secure hosting
 - Cloud protection and data confidentiality
 - Safe access with authentication
 - Highest protection against unauthorized access



SPORTING
SOLUTION

BASIC WIRELESS: a wireless lighting control solution conceived for small and medium-sized non-professional sporting centres to adjust lighting levels according to the sporting events held.

This solution applies to the following families of product:

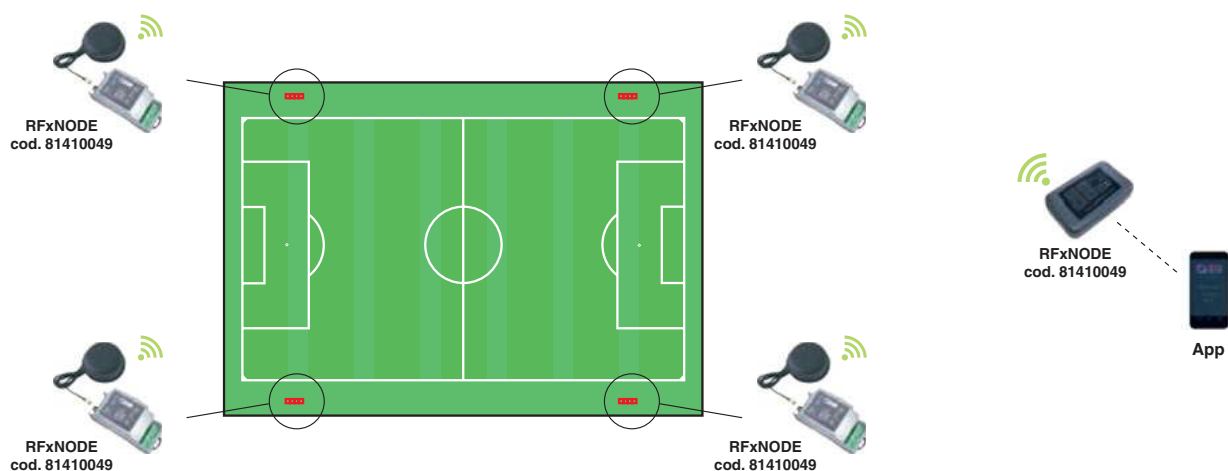
Floodlights: **Rodio, Satuno, Astro and Forum**



Example of use: small and medium-size arenas

System architecture

The system is made up of hardware and software modules. The communication with the lighting fixtures occurs via a **RFxNODE wireless module** (that can control up to 32 DALI drivers) to be installed in an electrical board at the base of the light post and that can be easily configured with the **wireless button panel** or via app.



**SPORTING
SOLUTION**

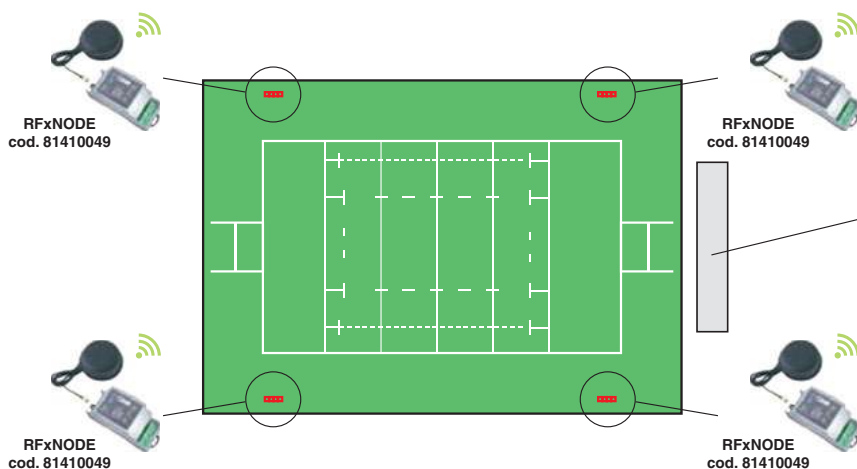
ADVANCE WIRELESS: wireless lighting control solution conceived for small and medium-sized non-professional sporting centres to adjust lighting levels according to the sporting events held.

This solution applies to the following families of product:

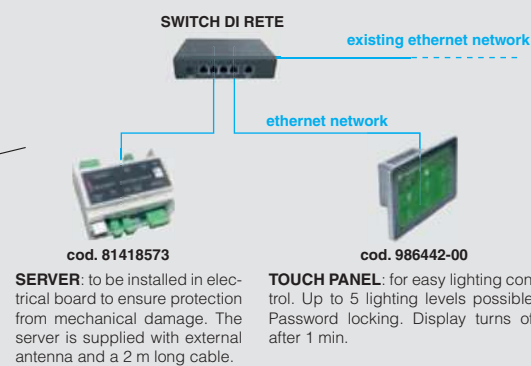
Floodlights: **Rodio, Astro and Forum**

**Example of use: small and medium-size arenas****System architecture**

The system is made up of hardware and software modules. The communication with the lighting fixtures occurs via a **RFxNODE wireless module** (that can control up to 32 DALI drivers) to be installed in an electrical board at the base of the light post and that can be easily configured with a **server** with a wireless interface connected to a **switch** (not included). Lights are managed via a **touch panel**.



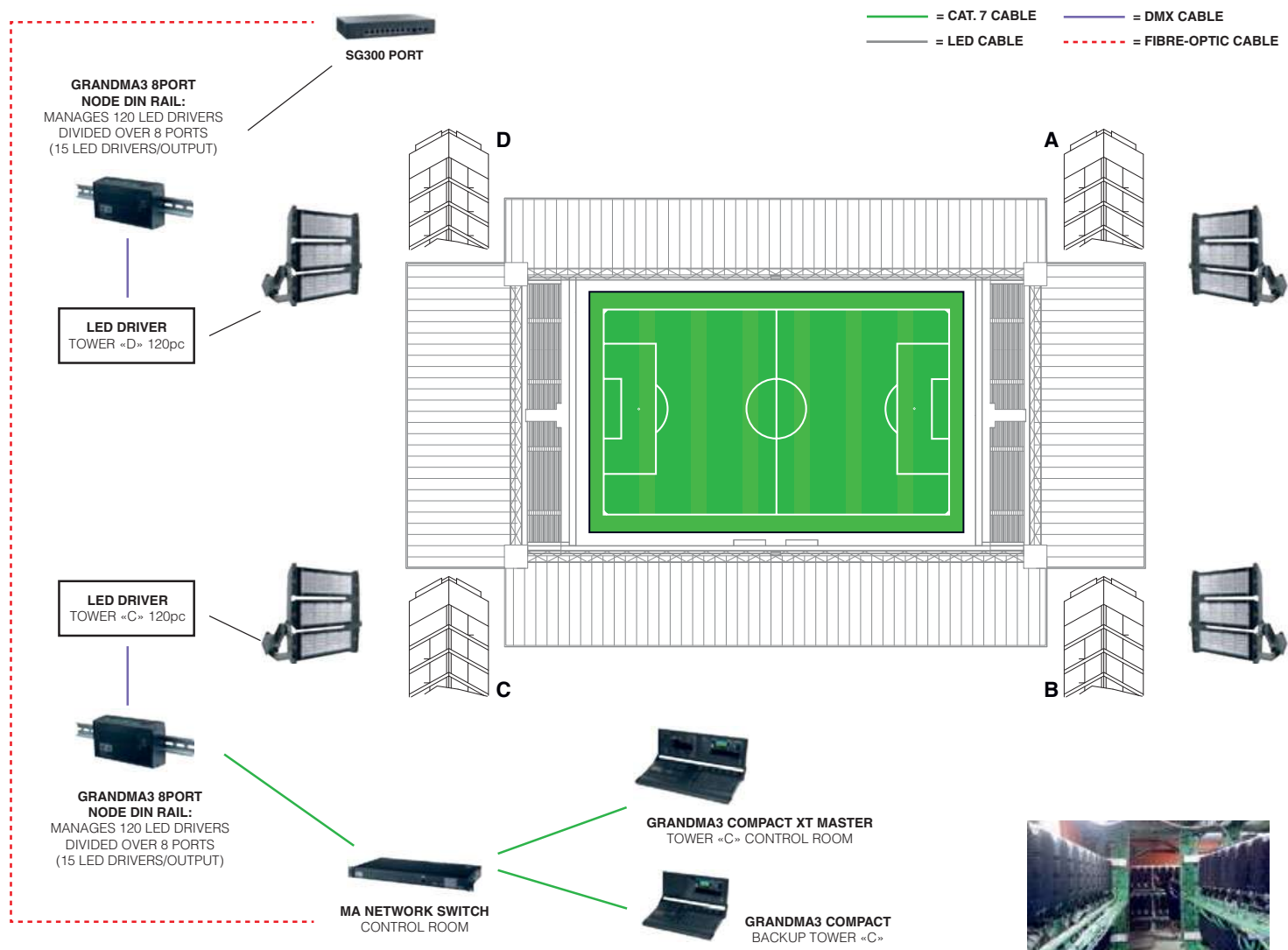
Installation of system components in secondary room:



SPORTING
SOLUTION

DMX TOP SOLUTION: a lighting control system conceived for large professional arenas that require very high and evenly distributed lighting levels to meet HDTV needs. The system allows adjusting the brightness of lights and creating spectacular lighting effects that produce a strong visual impact on viewers.

Forum LED is equipped with **DMX compatible drivers**. DMX protocol is needed for dynamic light thanks to its immediate reaction time and virtually unlimited number of addresses. DMX can also be used in functional dimming using simple lighting controls in high-end sports installations. DMX allows all range of scenic effects, as well as the monitoring of each luminaire and ease of configuration thanks to the self-addressing DMX-RDM functions.





The **Luigi Ferraris stadium in Genoa** is one of the sporting facilities that made the history of Italian football.

The new lighting system features **Forum LED fixtures**, a top quality and environmentally friendly solution thanks to the high energy efficiency of its lighting sources and the construction excellence of its materials. With its modular configuration, Forum allows creating a lighting system which is "tailor-made" to fit all lighting needs.

Moreover, the new lights installed in Genoa are equipped with a **DMX driver and a central lighting control console**. The DMX (Digital multi-plex) protocol is the most common digital system used for controlling lights during shows and sporting events. The whole system is managed from a central console that allows setting different lighting scenarios and creating spectacular light plays. This type of system, which adds a lot of emotion and atmosphere to a game, is becoming more popular in the lighting of major stadiums.



DMX SOLUTION

To create ambience lighting that highlights important architectural structures and gives otherwise anonymous buildings an unimaginable aesthetic value. The possibilities offered by coloured lights can be further enhanced with an additional element: dynamism.

This type of solution applies to the following products:



Disano offers different solutions depending on the complexity of the setting and the number of lighting fixtures to be controlled:

- **DOP CONTROLLER:**

Ideal for less complex settings with luminaires that change colour simultaneously. For users who are unfamiliar with the technology, there is a simple rotary potentiometer that can easily create colour-changing scenes.

- **DMX MINI CONTROLLER:**

Ideal for medium-complexity sets, it comes with 10 pre-set scenes that can be simply recalled using a special button on the controller (e.g. single fixed colour, continuous colour sequence, Italian flag). A computer or smartphone is required for programming customised scenes.

- **BLE DMX CONTROLLER:**

Controller featuring IP66 protection and CASAMBI Bluetooth technology to programme and control a simple DMX installation in broadcast mode via free APP available for mobile devices.

- **DMX/RDM CONTROLLER:**

Ideal for installations with a large number of luminaires and complex set designs. The RDM technology allows creating extremely flexible systems that can be managed with special software and recalled via Apps for smart devices.

RDM type: RDM stands for Remote Device Management and is a communication protocol (based on DMX) whose purpose is to enable two-way communication between a DMX controller and a luminaire. The purpose is to communicate remotely with RDM luminaires without having to open the fixture itself. It is sufficient to simply connect the luminaires to the DMX controller with RDM function to detect them and assign the desired address once the installation is complete.

Disano RGBW DMX/RDM products with built-in driver are equipped with this technology.

DMX controller

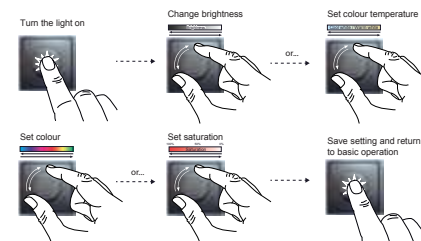
**DOP
controller - IP20**

cod. 986563-00

Recessed rotary DMX controller to set colour, dimming level and rotating programmes for RGB and RGBW luminaires with DMX technology.

FEATURES:

- One rotary button for On-Off/dimming/colour/animation control
- Required power supply: 12 - 32Vdc; min. power 2W (power supplier not included)
- Configuration mode via Dip-Switch
- Device control in broadcast mode
- Suitable for recessed mounting in 502 box

**DMX mini
controller - IP20**

cod. 986460-00

The solution for simple DMX installations where standalone control is sufficient. Equipped with a DIN rail adapter, it can be easily mounted in an electrical control cabinet. It is possible to create your own static or dynamic lighting scenes with the ESA2 software or via a free app from any smart device and upload them to the DMX MINI CONTROLLER via the supplied USB connector.

FEATURES:

- Supplied with 10 pre-set scenes that can be recalled using a front button - 60 channels
- Configuration mode via ESA2 software (free download) and via smartphone with OTG function, with Arcolis APP (free download)
- DIN rail adapter and USB cable included
- Necessary power supply: 5 - 5.5Vdc via micro USB (power supplier not included)
- DMX connection (screw terminals)
- Compact dimensions (52 x 29 x 24 mm)

**BLE DMX
controller**

cod. 81420057

Wireless DMX controller with CASAMBI technology. It programmes and controls a simple DMX installation via APP from any smart device. It can be integrated into existing CASAMBI networks.

FEATURES:

- Programming and scene recall with CASAMBI technology
- Device control via broadcast mode
- Necessary power supply: 230V
- DMX connection screw terminals
- Compact dimensions (115 x 123 x 62 mm)
- Suitable for indoor and outdoor applications (IP67 enclosures)

**DMX/RDM
controller**IP20
cod. 986562-00BOX-IP65
cod. 986557-00

DMX controller with RDM addressing function. Built-in Wi-Fi connection for wireless management. Suitable for highly complex semi-professional DMX installations. Connected via USB cable to a PC, it turns it into a DMX console (with software installed and running). Stand Alone function by uploading the programmes created with dedicated software to the internal memory.

FEATURES:

- Up to 99 settable scenes via front micro-buttons - 512 channels expandable to 1024
- Configuration mode via ESA2 software (free download)
- USB cable included
- Necessary power supply: 5 - 5.5Vdc via micro USB Type C (power supplier not included)
- DMX cannon connector
- Compact dimensions (77 x 87 x 40 mm)



DMX accessories

**DMX/RDM
splitter**IP20
cod. 986461-00BOX-IP65
cod. 986513-00

If the system has more than 32 luminaires and/or the DMX line has an extension of more than 250 m, a splitter must be inserted. This will amplify, regenerate and branch the signal, distributing it to 4 outputs for a maximum of 128 luminaires (32 for each output).

FEATURES:

- Necessary power supply: 12 - 24 - 48Vdc; max. current 500mA (power supplier not included for IP20 version)
- 4 outputs for up to 128 luminaires (32 for each output)
- Adapter for installation on 4 DIN rail modules
- Dimensions (72 x 92 x 71 mm)



GENERAL CHARACTERISTICS

Housing: in die-cast aluminium with cooling fins.

Diffuser: 5mm thick tempered glass, resistant to thermal shocks and impacts.

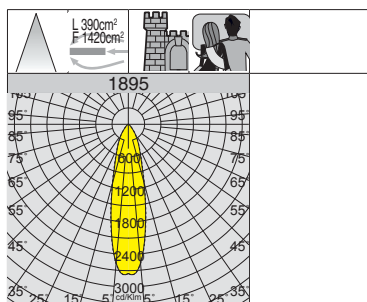
Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.



Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.

Equipment: complete with galvanised and coated bracket. Silicone rubber gasket; external screws and bolts in stainless steel; air recirculation valve. Insulation connector for quick installation with **no need to open the fixture**.

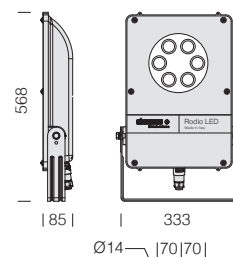
For DMX management of the luminaire, see the section about DMX controllers and accessories.



DMX/RDM
inside



IP66IK08



Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation).

When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

1895 Rodio - LED RGBW DMX/RDM

		CLD		LUMEN OUTPUT (tg= 25 °C)	
wattage	colour	weight	code	W tot	K - olm - degrees
LED RGBW	graphite	6.20	414830-00	max. 50	R= 387lm - G= 604lm - B= 137lm W= 630lm (4000K) - 26°

GENERAL CHARACTERISTICS

Housing: die-cast aluminium with cooling fins.

Diffuser: tempered glass 4 mm thermal shock and impact resistant.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.



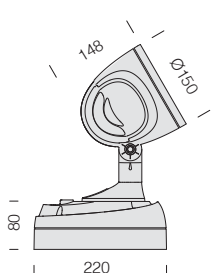
Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Standard Supply: electronic safety device to protect the LED module and the related ballast compliant with EN 61547.



For DMX management of the luminaire, see the section about DMX controllers and accessories.

IP65IK08



Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation).

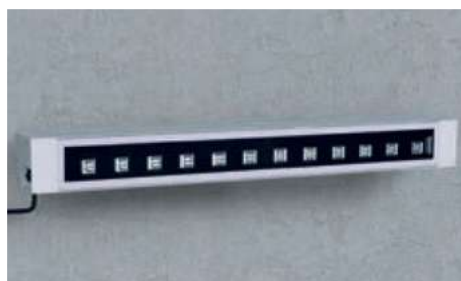
When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

DMX/RDM inside

**1539 Elfo - LED RGBW DMX/RDM**

		CLD		W	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		K - ølm 700mA
LED RGBW	grey 9007	3.60	432834-00	41	R= 325lm - G= 426lm - B= 62lm W= 447lm (4000K)

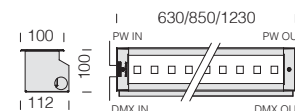
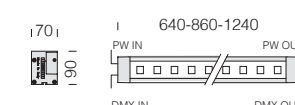

SICURA - RGBW - DMX/RDM (on request)

TW (on request)	2700K - 3000K - 4000K - 5000K
Version	RGBW - TUNABLE WHITE
Standard beam	elliptic - narrow - medium - wide - asymm.

ELECTRICAL DRIVE CHARACTERISTICS

Electrical connect.	loop in-out
Equipment	DMX/RDM or stand-alone

**DMX/RDM
inside**


IP67IK08

IP66IK08

GENERAL CHARACTERISTICS

Housing: complete with graphite aluminium frame with die-cast aluminium end caps; extruded aluminium suitable for continuous row for recessed version.

Diffuser: tempered shock, resistant to impacts, thermal shocks and loads (recessed: max load 2000 kg) 8 mm thick glass.

For DMX management of the luminaire, see the section about DMX controllers and accessories.

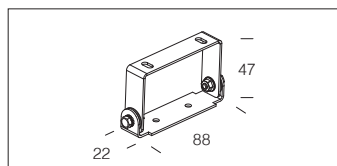
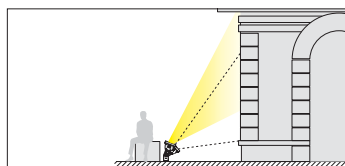
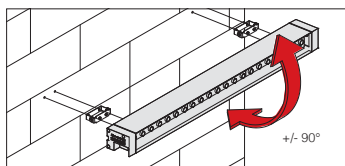
Sicura - LED RGBW DMX/RDM

	WHITE 4000K		RED		GREEN		BLUE		W. tot
	ølm	w	ølm	w	ølm	w	ølm	w	
SICURA RGBW 600	1300lm	13W	260lm	12W	760lm	12W	33lm	13W	50W
SICURA RGBW 800	1740lm	17W	360lm	16W	1010lm	16W	450lm	17W	66W
SICURA RGBW 1200	2600lm	26W	520lm	24W	1520lm	24W	670lm	26W	100W

Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation).

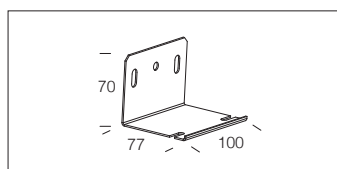
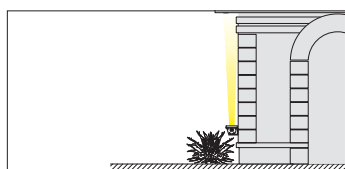
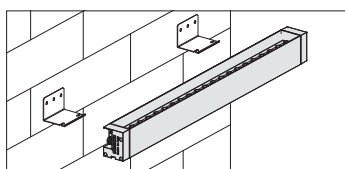
When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

INSTALLATION AND ACCESSORIES

acc. 535 adjustable connection

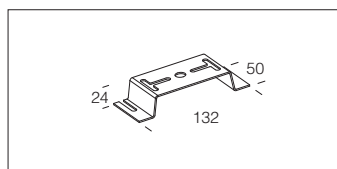
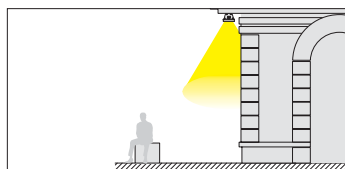
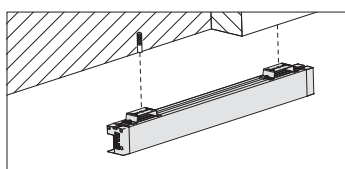
grey 993970-00

For direct ceiling installation. Capacity: 6 Kg. **2 for pack.**


acc. 536 bracket

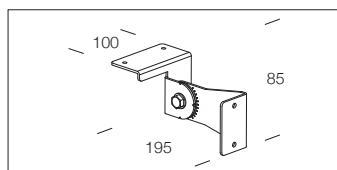
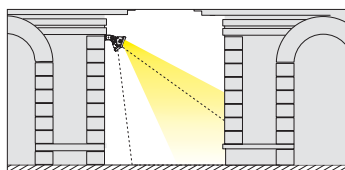
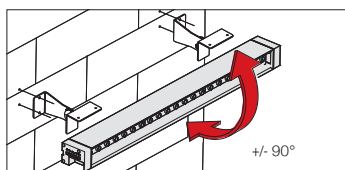
grey 993972-00

To install Sicura permanently on walls. **2 for pack.**


acc. 376 ceiling mount. unit

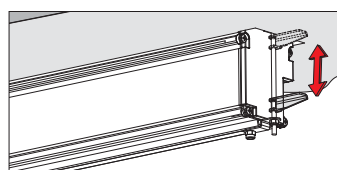
galvanized 145151-00

For direct ceiling installation. Only for equipment with direct light. **2 for pack.**


acc. 537 adjustable connection

galvanized 993974-00

To install Sicura on walls or ceiling. To be used for continuous lines. **2 for pack.**


acc. 905 bracket

s. steel 998013-00

Support for ceiling mounting. Packet containing 2 brackets.

GENERAL CHARACTERISTICS

Housing: complete with graphite aluminium frame with die-cast aluminium end caps.

Diffuser: 8 mm clear and tempered glass, resistant to thermal shock.

Optics: system made in high performance PMMA, resistant to high temperatures and UV radiation. Flux recovery system in polycarbonate.

Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating.

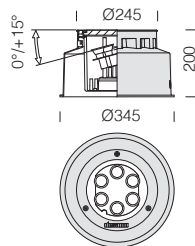
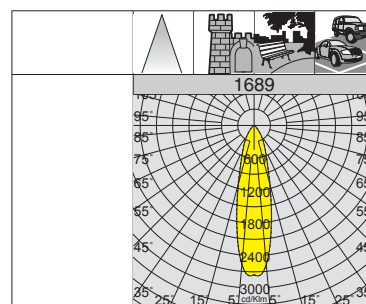
Upon request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments

Equipment: complete with IP68 air-tight connector and electrical cable (1mt) for mains connection.

For DMX management of the luminaire, see the section about DMX controllers and accessories.



IP68IK10

DMX/RDM
insideRG0
E1HrRGBW
DMX
RDM

Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation). When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

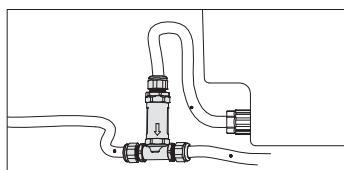
Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

1689 Floor - adjustable - LED RGBW DMX/RDM

		CLD		temperature and load				LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	T. max on glass ta 25°	ta 15°	max load kg	can be walked on	can bear vehicle loads	W tot
LED RGBW	s. steel	4.50	530540-00	40°	30°	4000	OK	OK	max. 50
									ølm - degrees
									R= 387lm - G= 604lm - B= 137lm W= 630lm (4000K) - 26°

acc. 399 - Conn. for continuous line
993837-00

Connector for solid line to be used with acc 369 for continuous lines. For Floor range.

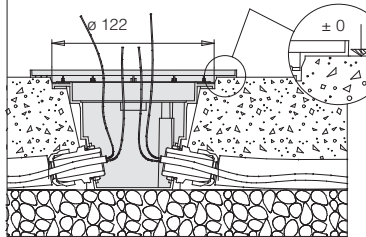




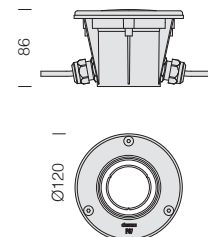
It is advised to install Starled according to the following information.



ø120



IP67IK08



GENERAL CHARACTERISTICS

Housing: fibreglass nylon with stainless steel AISI 316L frame.

Diffuser: tempered shock and heat resistant glass.

1635 Microfloor - adjustable - LED RGB Fullcolor

		S+L		temperature and load				LED (tj= 25 °C)	
wattage (350mA)	colour	peso	code	T. max on glass	max load kg	can be walked on	can bear vehicle loads (+)	W	ølm 350mA
RGB Fullcolor	s. steel	0.40	530800-00	40°	2000	ok	ok	4,5	105lm

Luminaire supplied without power supplier. See the section about RGB control solutions (stand-alone or DMX/RMD) depending on intended use.

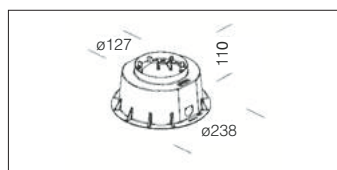
INSTALLATION AND ACCESSORIES



acc. 314 - chassis

993926-00

To install Microfloor on the wall.



acc. 313 - outer shell

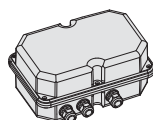
993925-00

To install Microfloor into the ground.

RGB CONTROL SOLUTIONS

1) STAND-ALONE SOLUTION

KIT acc.61 + acc.65: solution for simple installations where a stand-alone control is sufficient. It is managed using a remote control to recall preset dynamic scenes or select a determined colour and intensity.



acc. 61 RGB power supplier - IP67

25W 986512-00

RGB LED driver supplied in IP67 waterproof box with IRE receiver. Suitable for powering up to 5 Microfloor RGB Fullcolor. It is possible to connect up to a maximum of 20 acc.61 in cascade mode with a special synchronisation cable.

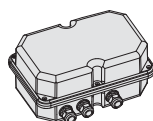
acc. 65 remote control

986507-00

IR remote control to be used in combination with acc. 61 to control the RGB system. It allows switching lights on and off, selecting colour and light intensity and recalling pre-set programmes and rotation speed.

2) DMX/RDM SOLUTION

POWER SUPPLIER acc.63: solution for integrating Microfloor into DMX/RDM controlled installations. For DMX luminaire management see DMX controllers and accessories.



acc. 63 RGB DMX/RDM power supplier - IP67

50W 986511-00

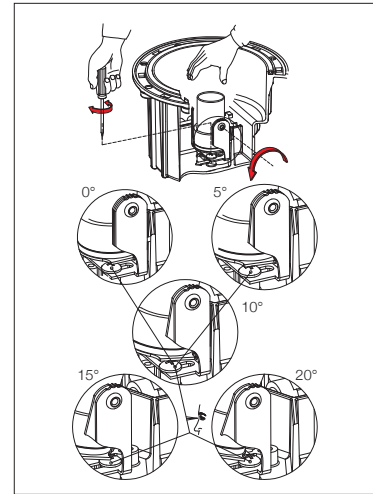
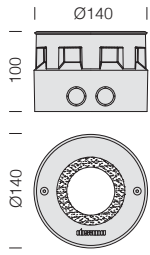
RGB LED driver supplied in IP67 enclosure controllable by DMX signal and addressable with RDM technology. Suitable for powering up to 11 Microfloor RGB Fullcolor fixtures.

Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation).

When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

IP67IK10



(*) drive-over fixture for **restricted traffic areas**.

GENERAL CHARACTERISTICS

Housing: made in die-cast aluminum with stainless steel AISI 316L frame and fibreglass nylon outer shell.

Diffuser: tempered shock and heat resistant glass.

1871 Midifloor - adjustable - LED RGB Fullcolor

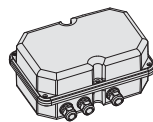
		S+L		temperature and load				LED (tj= 25 °C)	
wattage (350mA)	colour	weight	code	T. max on glass	max load kg	can be walked on	can bear vehicle loads (*)	W	ølm 350mA
RGB Fullcolor	s. steel	0.50	530790-00	40°	3000	ok	ok	4,5	105lm

Luminaire supplied without power supplier. See the section about RGB control solutions (stand-alone or DMX/RMD) depending on intended use.

RGB CONTROL SOLUTIONS

1) STAND-ALONE SOLUTION

KIT acc.61 + acc.65: solution for simple installations where a stand-alone control is sufficient. It is managed using a remote control to recall preset dynamic scenes or select a determined colour and intensity.



acc. 61 RGB power supplier - IP67	
25W	986512-00

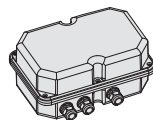
RGB LED driver supplied in IP67 waterproof box with IRE receiver. Suitable for powering up to 5 Midifloor RGB Fullcolor. It is possible to connect up to a maximum of 20 acc.61 in cascade mode with a special synchronisation cable.

acc. 65 remote control	
	986507-00

IR remote control to be used in combination with acc. 61 to control the RGB system. It allows switching lights on and off, selecting colour and light intensity and recalling pre-set programmes and rotation speed.

2) DMX/RDM SOLUTION

POWER SUPPLIER acc.63: solution for integrating Midifloor into DMX/RDM controlled installations. For DMX luminaire management see DMX controllers and accessories.



acc. 63 RGB DMX/RDM power supplier - IP67	
50W	986511-00

RGB LED driver supplied in IP67 enclosure controllable by DMX signal and addressable with RDM technology. Suitable for powering up to 11 Midifloor RGB Fullcolor fixtures.

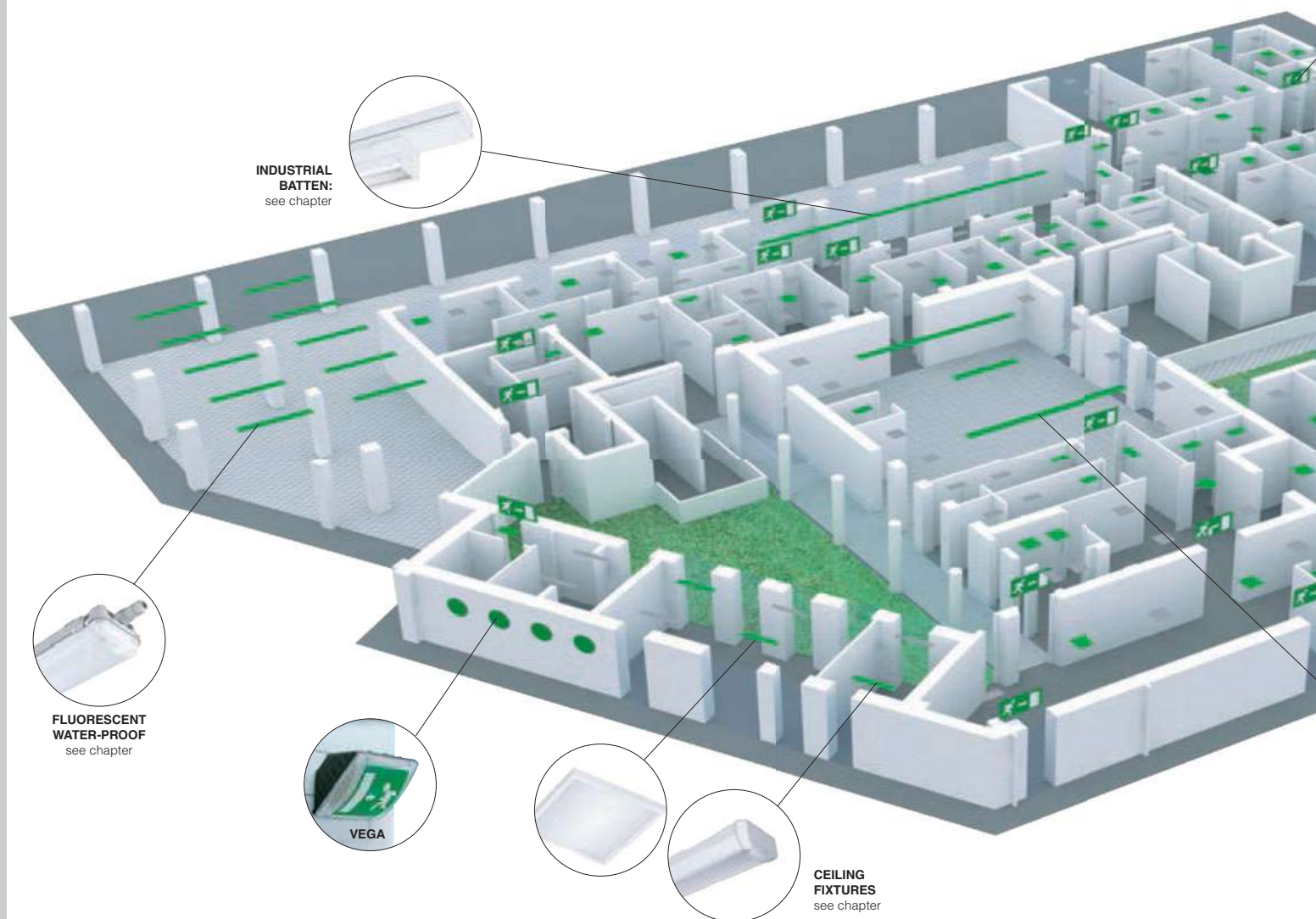
Default settings: powering up the luminaire in the absence of a DMX signal will automatically start a pre-set colour sequence (stand-alone operation). When a signal is present the luminaire automatically switches to the DMX controller (DMX default address: 1).

Upon request: the luminaire can be supplied with stand-alone programming and customized DMX address.

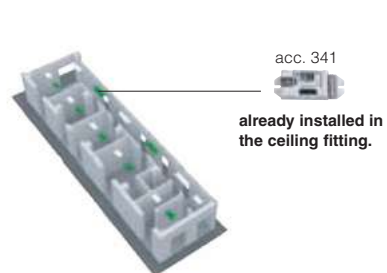
Self-diagnosis systems enable to perform regular tests to check the operation and life of batteries, so that you can fully and effectively meet these needs. Most ceiling fixtures with emergency lighting systems may be equipped with a locale self-diagnosis system that can be obtained by combining the normal produce code with subcode - **0066** during the ordering phase. Use of the centralised control module complies with the need to control the lighting in emergency conditions in environments which are extensive and complex from a structural point of view. The system comprises a main control unit to manage the "emergency lighting" system. The unit has been designed to supply power and manage up to a maximum of 128 units. On-line tests can be performed, as well as tests which can be programmed by the user:

1) testing the correct operation of each single lighting fitting for a few minutes (for example: once a week at 12.30);

2) full battery charge test with the complete discharge cycle to test the charge conditions of the batteries (for example: at 23.30 once a month). The status reports can be accessed thanks to a liquid crystal display. The system can be interfaced with a printer to print out the functionality reports, or interfaced with a PC to manage the system from a normal workstation. The facilitated access system enables the operating data and any malfunctions of the lighting fittings to be displayed.



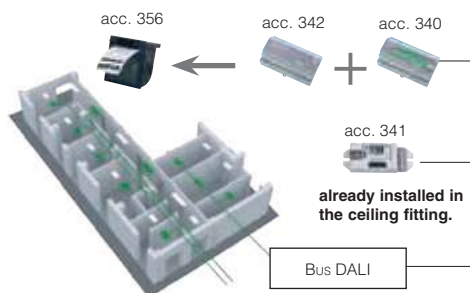
Installation example with Main Control System



Example: Localised Auto Self Test

The localised self-diagnosis test is performed using accessory 341. Testing the operating status of the emergency lighting function on each single ceiling fitting. Use in simple layout and small size environments is recommended. One accessory for each lighting fitting is used for this type of installation.

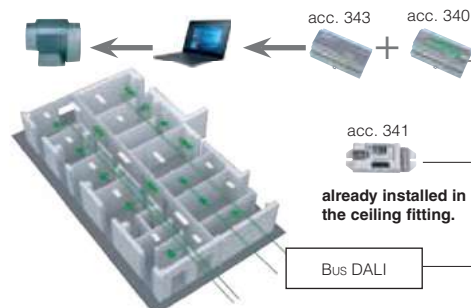
WARNING: use suffix 0066 to order lighting fittings complete with the self-diagnosis function.



Example: Centralised Auto Self Test with printer

Centralised monitoring of the emergency lighting operation via a printed report (acc 356). Use in extensive or structurally complex environments is recommended. One accessory for each lighting fitting is used for this type of installation.

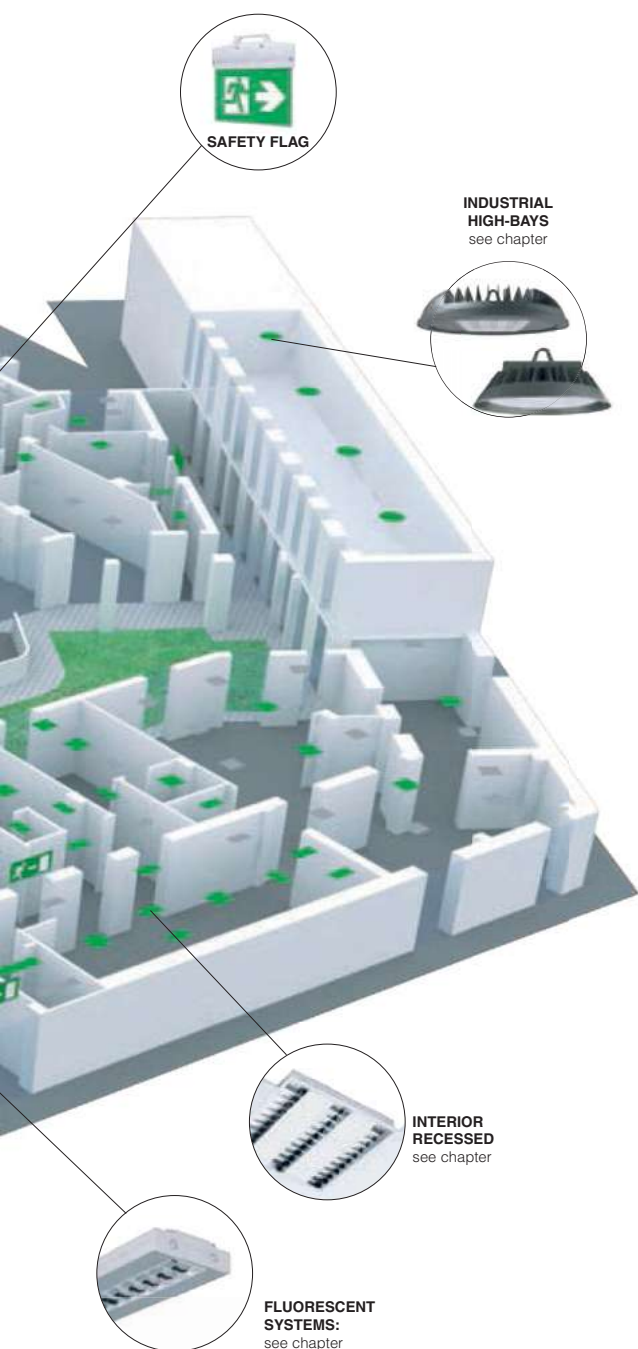
WARNING: use suffix 0066 to order lighting fittings complete with the self-diagnosis function.



Example: Centralised Auto Self Test with PC

Centralised monitoring of the emergency lighting operation via a printed report (acc 356). Use in extensive or structurally complex environments is recommended. One accessory for each lighting fitting is used for this type of installation.

WARNING: use suffix 0066 to order lighting fittings complete with the self-diagnosis function.



acc. 341 AD - auto self-test	
white	For code, please contact our customers service
Device to be installed on each light source during manufacture.	
NOTE: use suffix -0066 to order fixtures complete with Auto Self Test devices.	

(AD) Auto Self Test: control unit to perform local tests. By connecting various AD modules (max 128) to the control unit you can create a centralised system. Max. distance from the control unit: 300 m.

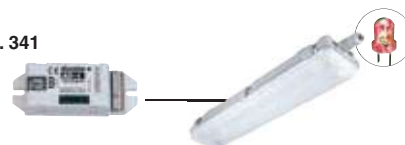
1) in fact, a localised system can be obtained by connecting the **AD module** to the emergency kits and the functionality-related information is assigned to the luminous three colour LED positioned on the lighting fitting.

This **Auto Self Test** module is equipped with a sophisticated microprocessor device which enables it to automatically and independently make periodic diversified checks. The **AD module** makes two types of check at diversified periodic intervals:

1) **functionality test:** a brief test is carried out automatically every 7 days to check the functionality of the fluorescent tube.

2) **run time test:** every 12 weeks it automatically checks the battery runtime. All signals are shown by a single three-colour G-Y-R LED indicating the various operating statuses of the kit. The table below shows the various kinds of signal/behaviour of the LED.

acc. 341

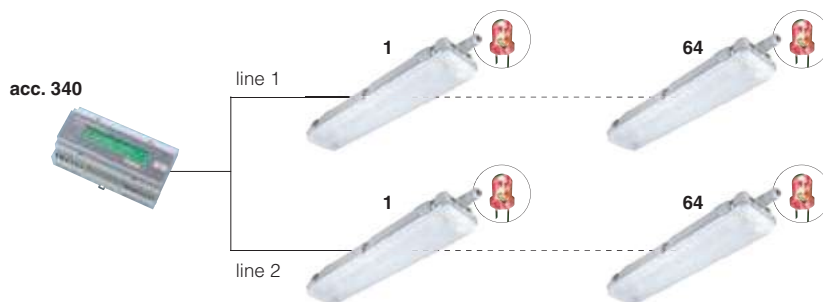


340 main (Control unit)	
white	986550-00

Control unit for the "emergency lighting" system. Designed to control up to 128 fixtures divided into 2 groups. Fitted with LEDs and relays to signal faulty operation. Suitable for mounting in modules directly into the DIN track 230-240Vac 50-60Hz 20W.

2) the complete supervision of the entire system created is achieved by simply connecting all the **AD modules** using a two-wire "DALI BUS" to a "Control unit". The reports on the operating status can be accessed thanks to a display on the "Control unit". The system can be interfaced with a printer to print out the functionality reports, or interfaced with a PC to manage the system from a normal workstation.

acc. 340



Accessories



acc. 342 printer unit	
white	986552-00
Device to be installed locally to print reports on the status of the network.	



acc. 356 printer from panel	
	986555-00
Printing from panel, ultracompact, width paper 58mm, with simple loading system.	

Printer unit: By using a simple duplex cable at any convenient point in the network, you can connect a PC to monitor system operation and if necessary supervise it in parallel to the "Control unit".

Printer module: Complete with frame. Printer report : Disano's logo, date of report, hour of report, number of installed fixtures, total number of fixtures of system, state of fixtures out of order.



acc. 343 computer unit	
white	986553-00
Device to be installed locally to control and monitor the system. It communicates via a serial port. Software not included. To order separately	



acc. 344 RMD	
white	986554-00
Device to be used on one or more fixtures fitted with the EM disablement system.	
NOTE: when ordering fixtures specify whether they should be fitted with RMD (use suffix -0070).	

Computer Unit: the system allows to install up to 5 mains under the same PC/printer module with 200 units. By using a simple duplex cable at any convenient point in the network, you can connect a PC to monitor system operation and if necessary supervise it in parallel to the "Control unit".

Rest-mode (RMD): Permits you to control disablement in fixtures where this is possible and disable the emergency circuit for example during maintenance to the system. The ceiling fittings are switched on when the power supply is interrupted, energising acc. 344 causes the ceiling fittings to be switched off, avoiding the batteries from being discharged and enabling maintenance operations to be performed safely.



The use of LED lights in horticulture will:

- Help you save up to 75% on your energy bills.
- Help you save up to 90% on the water used: less heat means lower evaporation rates, which will help relieve the global water crisis.
- Increase plant growth factor: higher levels of red light will increase crop growth.

Improve nature

To guarantee food supply in the future, choose Disano's horticulture LED lights! This type of fixtures can offer a spectrum of endless possibilities, encouraging photosynthesis and plant growth in height or width at different wavelengths to be able to implement a systematic cultivation.

What is horticulture lighting and how is it used?

Horticulture lighting is used to encourage, increase and enable plant growth using artificial lighting. LED lights represent a very efficient and innovative solution for this type of application!

Supplementary lighting

To provide additional quantity and quality of illumination not achieved with the artificial lighting system in order to improve the photosynthesis and therefore the growth and quality of the plants in greenhouses.

Photoperiod regulation

To control the plant's internal clock. It can be used at the end of the light cycle to trigger plant flowering within short days.

Plant growing in the absence of natural daylight

To fully replace sunlight and control climate conditions.

Glossary (basic terminology)

PAR Region

- Photosynthetic Active Radiation is the bandwidth from 400 nm to 700 nm, which is the light which plants primarily use.
- Different plants require different wavelength combinations within the PAR region.

PPF (Photosynthetic Photon Flux) measured in $\mu\text{mol/s}$

- Total number of photons emitted per second in the PAR region.

PPFD (Photosynthetic Photon Flux Density) measured in $\mu\text{mol/m}^2\text{s}$

- Represents the number of photons that reaches the plant within the PAR region over a given area.
- It declines exponentially as the distance between the light source and the plant surface increases.

DLI (Daily Lighting Integral)

- Plants need a minimum amount of light per day to meet their basic biological needs. It varies based on species.
- For flowering and fruiting, high levels of light can show significant increases in both the quality and quantity.

Applications

Greenhouses: currently used in conventional lighting systems. Plants are illuminated top down with sources that mimic sunlight.

Inter lighting: light is positioned between the tall leafy plants. This reduces the shade on leaves that may be created with top-down lighting.

Multilayer cultivation: suited for growing plants in environments with little or no sunlight exposure; lights can be positioned on the plant because they do not heat up and consume 85% less than fluorescent tubes.

Home farming: ideal for non-industrial settings, such as restaurants, florists and hotels where it is possible to keep the necessary lighting level for the growth and preservation of plants also in the absence of sunlight.

LED characteristics

- *Deep blue (450 nm)* and *hyper red (660 nm)* to guarantee the light required by the photosynthesis
- *Far red (730 nm)* to control the plant from germination to vegetative growth and to flowering
- *Mint White (EQW)* to add green content
- *Mint White (EQW)* to create a human-centric work environment
- High energy efficiency in $\mu\text{mol/J}$
- High drive current up to 1 A
- Low thermal resistance between 3.8 and 6 K/W
- Different angles of radiation – point-source or diffuse lighting (80°-120°- 150°)
- Resistant in wet environments

The influence of colours on plants

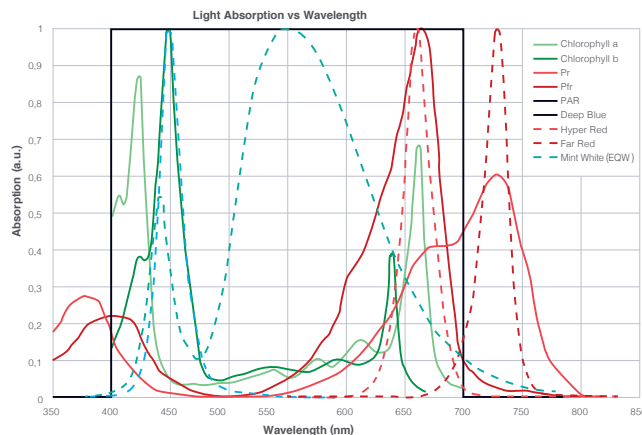
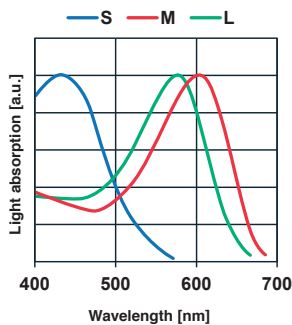
Perfect light for plants does NOT mean perfect light for our eyes!

Numerous research and tests show that the radiations of red and blue light spectra form the most efficient wavelengths for the production of plants' chemical energy. Insufficient illumination or an inappropriate composition of different wavelengths have anomalous consequences or may even be harmful for plant growth. Knowing the behaviour of plants when illuminated by different colours will affect the expected result, and will help monitor and improve the quality of the crops. In other terms, knowing means being able to design a lighting system that can boost each phase of the plant growth.



Lighting initiates photochemical reactions: humans react to light stimulation with photoreceptors which show peaks of light absorption at 555 nm (S,M,L); in plants, instead, photosynthetic efficiency is primarily guided by chlorophyll a and b. Peaks of light absorption of chlorophyll a are 665 nm and 465 nm.

Absorption curves of the human eye



Sunlight intercepted by chlorophyll a and b and actually available as energy for the photosynthesis is **Photosynthetic Active Radiation (PAR)** corresponding to 41% of the total sun radiation, and concentrates within the blue and red wavelengths, with peaks at 430 nm and 680 nm.

This region includes the following sub-regions:

- blue-violet, (400-490 nm), absorbed by pigments used for flowering, protein synthesis, phototropic effects, average effect on the photosynthesis;

- green (490-560 nm), the least photosynthetically active radiation;
- yellow (560-590 nm);
- red-orange (590-700 nm), very photosynthetically active radiation.

Effects of LED lighting and advantages of specific spectrum systems

- **Tailored emission spectrum:** ad hoc composition of wavelengths capable of affecting the photomorphogenesis of plants (growth, shape and flowering); the simulation and full control over the various phases of daylight.
- **Faster on/off time:** lights get instantly to their full light level; adjustment to daylight changes, ensuring higher energy savings.
- **Longer lamp life:** the extremely long service life of the LEDs (>50000 hours) entails lower maintenance costs and, above all, a quick return on the investment.
- **Supplementary lighting:** to provide additional quantity and quality of illumination not achieved with the artificial lighting system in order to improve the photosynthesis and therefore the growth and quality of the plants in greenhouses.
- **Plant growing in the absence of natural sunlight:** to fully replace sunlight and control climate conditions.

Conclusions

- Greenhouses will play an increasingly important role in food supply.
- The globally increasing demand for high-quality food production will lead to a greater demand for greenhouses fit for this purpose.
- Light is the key element to boost plant photosynthesis.
- Light is made up of different wavelengths that help the various phases of plant photosynthesis.
- The light emitted by most traditional light sources (fluorescent or high-pressure sodium lamps) is insufficient and expensive.
- The LED technology allows adjusting the light and the lamps to a specific requirement based on the plants' emission spectrum

Dedicated Disano Products:

Forma	Radon	Saturno	Rodio	Sicura
				



“A new technology to disinfect, sanitize and purify air and surfaces”

UV fixtures are the best way to eliminate airborne microorganisms that may cause certain epidemic infectious diseases

We're live surrounded by microorganisms: bacteria, viruses, moulds, yeasts and protozoa. Shortwave UV radiation is a very effective physical method for eliminating and inactivating these microorganisms. The nuclei in the cells are subjected to a photolytic reaction that prevents their replication. The germicidal effect of light is provided in the shortwave UV band below 320 nm.

UV irradiation is the most **RELIABLE, ECO-FRIENDLY, EASY-TO-USE** and **LOW-COST** method for sanitizing the surfaces in the spaces where we spend most of our time.

Highly frequented places can be sanitized with UV lamps. UV rays trigger a photochemical reaction within the germs damaging their protein structure to alter their DNA/RNA. This makes them harmless and unable to replicate, preventing the spread of contagion, disease or damage.

Ultraviolet germicidal irradiation is a safe, proven and effective technology for the **elimination of microorganisms** like bacteria, viruses, fungi, spores, mites and moulds. It ensures bacteriologically controlled surfaces and can be used in luminaires for the bacteriological sanitization of:

- offices and schools
- waiting rooms
- medical studios
- bars and restaurants
- shopping malls and stores
- gyms
- beauty salons and wellness centres
- hotels



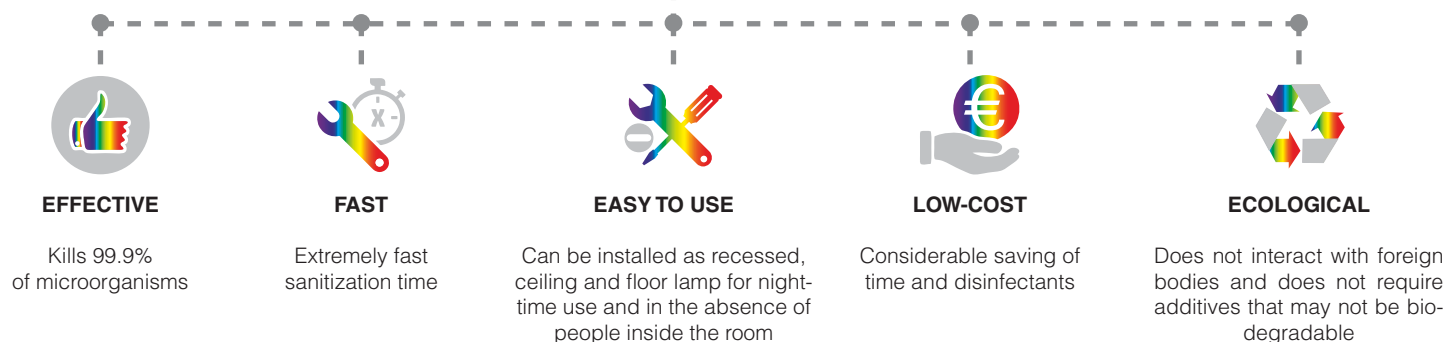
Reliable: scientific research has shown that ultraviolet rays can affect water and air-borne microorganisms, be they bacteria, viruses, fungi, algae, spores, or other (Note: before installing luminaires fitting UV sources, be sure to contact a qualified technician for the design stage).

Ecological: UV radiation is a physical, not a chemical, disinfection system. UV rays act on the nucleus of the cell that, when properly irradiated, is subjected to a reaction that prevents the reproduction process in a completely natural way (without using chemical disinfectants).

Low-cost: disinfection with ultraviolet lamps is currently the most economical option offered by technology.

Design: the Disano group is happy to offer expert advice to designers when planning the space where the lights will be installed.

MAIN ADVANTAGES OF UV



Note: UV does not replace cleaning

Legend



The presence of people is allowed



Versions also including general lighting



The presence of people is not allowed



Versions with UV lighting only

Ultraviolet germicidal irradiation

Ultraviolet radiation (UV) is that portion of the electromagnetic spectrum that goes from the lower wavelength limit of the visible light to the upper wavelength limit of X rays.

Ultraviolet radiation has a wavelength between 100 and 400 nm (1 nm = 10⁻⁹ m) and is not visible to the naked eye.

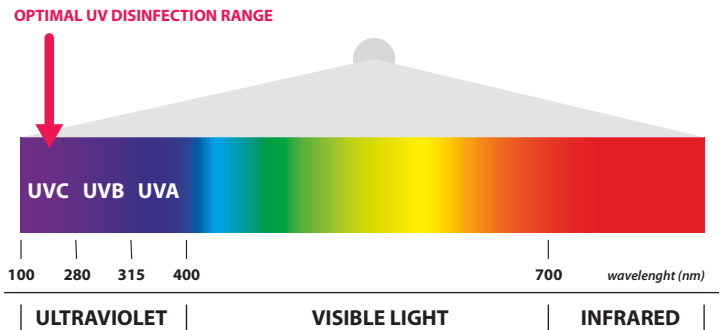
The UV spectrum is divided into three sub-regions:

- UV-A (long wavelength) from 315 to 400 nm (for medical and industrial use)
- UV-B (medium wavelength) from 280 to 315 nm (for curative medical use)
- UV-C (short wavelength) from 100 to 280 nm (for sanitization)

Thanks to the filtering action of the Earth's atmosphere, most UV in nature is UV-A, a very small portion is UV-B, and UV-C rays are practically absent.

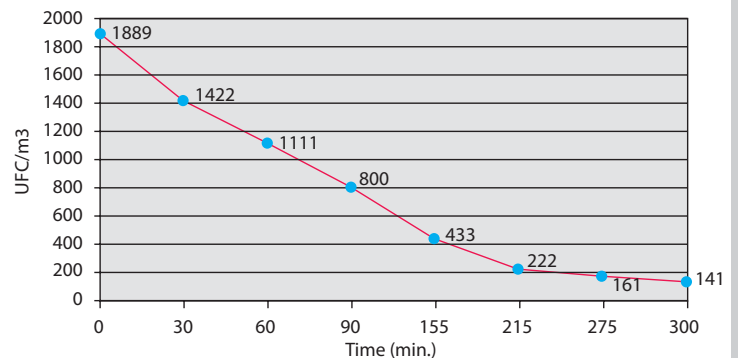
The **UV-A** light modules are less aggressive than the UV-C modules and require longer sanitization time. It is therefore necessary to control ON/OFF times based on the absence/presence of people in the room. For example: sanitization can be carried out at night, on weekends, on holidays, on certain weekdays, when certain areas are closed.

The **UV-C** light modules are more aggressive than UV-A modules and allow shorter sanitization time. We recommend equipping the system with "absence devices" (sensors or smart technology) so that the UV-C modules will activate only when nobody is in the room.



UV band eliminates bacteria, viruses, fungi, spores, moulds and mites, destroying the DNA and inhibiting its replication and proliferation.

UV technology is a physical disinfection method with an excellent cost-benefit ratio, it is ecological and, unlike chemical agents, it works against all microorganisms without creating resistance.



Reduction of microbial load over a period of time after the UV-C luminaire is switched on

APPLICATION TIPS

SECTORS/APPLICATIONS	UV-A: long sanitization time	UV-C: very short sanitization time
	at night, weekends, holidays (in the absence of people)	temporary absence in a room (in the absence of people)
SCHOOLS	<ul style="list-style-type: none"> classrooms corridors gyms laboratories 	<ul style="list-style-type: none"> break when exiting the classroom to move to another classroom
GYMS	<ul style="list-style-type: none"> training areas common areas 	<ul style="list-style-type: none"> when moving from one lesson to the next locker rooms
FACTORIES	<ul style="list-style-type: none"> production storage common areas 	<ul style="list-style-type: none"> assembly chain break lunch break
OFFICES	<ul style="list-style-type: none"> open space common areas restrooms 	<ul style="list-style-type: none"> lunch break in rooms between one conference and the next
STORES	<ul style="list-style-type: none"> sales warehouses 	<ul style="list-style-type: none"> fitting rooms (between one customer and the next)
HOTELS	<ul style="list-style-type: none"> utility rooms kitchens bars and restaurants 	<ul style="list-style-type: none"> reception when changing room when cleaning empty common areas
DENTISTS/BEAUTICIANS	<ul style="list-style-type: none"> all areas 	<ul style="list-style-type: none"> when moving from a room to the next
WAITING ROOMS	<ul style="list-style-type: none"> all areas 	<ul style="list-style-type: none"> during short closures to the public
SHOPPING MALLS	<ul style="list-style-type: none"> all areas 	<ul style="list-style-type: none"> after cleaning bathrooms and transit areas (before re-opening to the public)
HOSPITALS AND HEALTH CENTRES	<ul style="list-style-type: none"> all areas except patient/visitor rooms 	<ul style="list-style-type: none"> when the staff leaves their work station for patient visits or rounds

Before installing UV luminaires, be sure to entrust the lighting design to a professional lighting designer.

* NOTE:

- UV light may cause serious damage to the skin or the eyes, therefore avoid direct exposure on humans, animals and plants.
- Lighting fixtures equipped with UV-C LED sources must be **used only in the absence of people.**

Luminaires must be installed by qualified staff to ensure compliance with safety and radiation protection requirements.

The human eye cannot see ultraviolet light. Exposure to UV-B and UV-C radiation without using skin or eye protection may cause erythema (reddening of the skin) or conjunctivitis (inflammation of the eye).

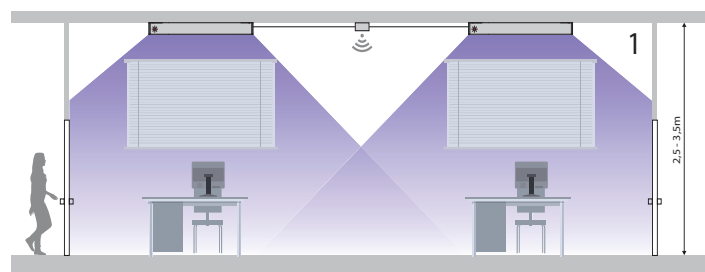
UV luminaires can be installed in a room by simply connecting them to the lighting system. This type of application requires the supervision of a qualified installer who will assess the safety of the system, based on whether or not people* are inside the room.

The use of UV sources, especially those in the UV-C wavelength band, require special attention as they can cause inflammation and damage, sometimes even permanently. This is why it is essential that UV sources are used when there are no people and/or animals in the room.

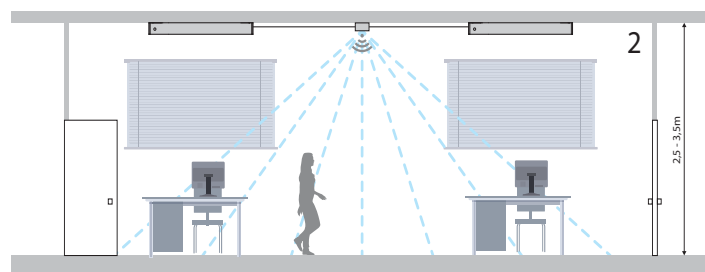
- Use of timers or time switchers (on-off timers).
- Use of "absence" detectors (sensors).
- Use of SMART control devices to control the lighting system.



Example of installation with "absence" sensors:



1) When the power supply is switched on and the sensor doesn't detect any presence in the room for 60 seconds, the UV lamp will turn on and a red LED light will be visible.



2) As soon as the sensor detects movement, the UV lamp will automatically go off (together with the red LED light).



3) If 60 seconds go by and no movement is detected, the lamp will turn on again (in the UV mode) and the red LED light will be visible again.

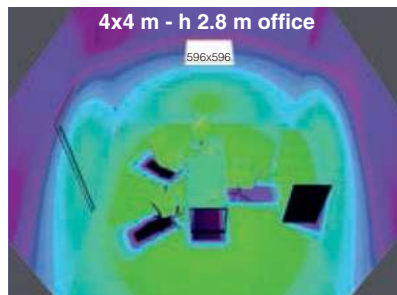


Before installing UV luminaires, **be sure to entrust the lighting design to a professional lighting designer.** The main factors to consider for a proper use of UV sources are:

- radiated power
- exposure time
- distance
- emission spectrum

For a UV lamp to be effective on spores, germs, bacteria and viruses, the lighting system must be designed so that the above parameters are correctly combined in order to achieve the desired results according to scientific/academic studies and literature.

Practical example of surface sanitization:

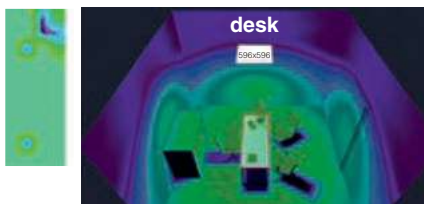


Log Reduction Scale: The number in the log reduction value refers to the number of nines shown in the percentage, which indicates the percentage of microorganisms that are eliminated by a given disinfection procedure

1-Log Reduction = 90% inactivation	Classification
2-Log Reduction = 99.9% inactivation	Detergent
3-Log Reduction = 99.99% inactivation	Detergent/Sanitizing
4-Log Reduction = 99.999% inactivation	Sanitizing
5-Log Reduction = 99.9999% inactivation	Disinfectant
6-Log Reduction = 99.99999% inactivation	Disinfectant
7-Log Reduction = 99.999999% inactivation	Disinfectant
8-Log Reduction = 99.9999999% inactivation	Disinfectant
9-Log Reduction = 99.99999999% inactivation	Sterilant
10-Log Reduction = 99.999999999% inactivation	

Irradiance and Fluence Scale 4x4 m office

E_e	0,00002	0,00003	0,00005	0,00007	0,0001	0,0002	0,0003	0,0005	0,00075	0,001	0,002	0,003	0,005	0,0075	0,01	0,02	0,03	0,05	0,075	0,1	0,2	0,3	0,5	0,75	1	1,5	[mW/cm ²]
30 Min	0,036	0,054	0,09	0,126	0,18	0,36	0,54	0,9	1,35	1,8	3,6	5,4	9	13,5	18	36	54	90	135	180	360	540	900	1350	1800	2700	[mJ/cm ²]



Calculation area= 60x160cm - h from ground= 75cm

Luminaire data:

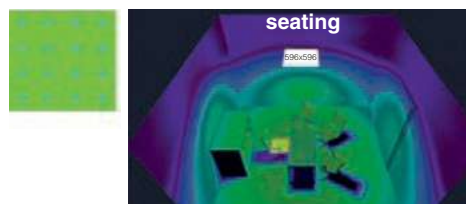
- Luminaire= 596x596mm
- Quantity= 1
- P(UV-C)= 3.95W
- P(Wtot)= 21 W

Results:

- Average irradiance: $E_e = 0,03 \text{ mW/cm}^2$
- Minimum irradiance: $E_{e_{\min}} = 0,01 \text{ mW/cm}^2$
- Uniformity: $U_0 = 70\%$
- UV dose for Covid-19* = 22 mJ/cm²



Log4 (estimated)= 30 min



Calculation area= 40x40cm - h from ground= 45cm

Luminaire data:

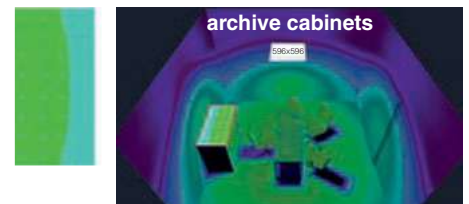
- Luminaire= 596x596mm
- Quantity= 1
- P(UV-C)= 3.95W
- P(Wtot)= 21 W

Results:

- Average irradiance: $E_e = 0,024 \text{ mW/cm}^2$
- Minimum irradiance: $E_{e_{\min}} = 0,023 \text{ mW/cm}^2$
- Uniformity: $U_0 = 90\%$
- UV dose for Covid-19* = 22 mJ/cm²



Log4 (estimated)= 16 min



Calculation area= 60x160cm - h from ground= 75cm

Luminaire data:

- Luminaire= 596x596mm
- Quantity= 1
- P(UV-C)= 3.95W
- P(Wtot)= 21 W

Results:

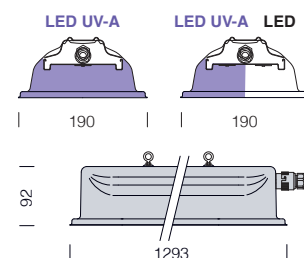
- Average irradiance: $E_e = 0,012 \text{ mW/cm}^2$
- Minimum irradiance: $E_{e_{\min}} = 0,008 \text{ mW/cm}^2$
- Uniformity: $U_0 = 65\%$
- UV dose for Covid-19* = 22 mJ/cm²



Log4 (estimated)= 48 min



IP65IK08

**GENERAL CHARACTERISTICS**

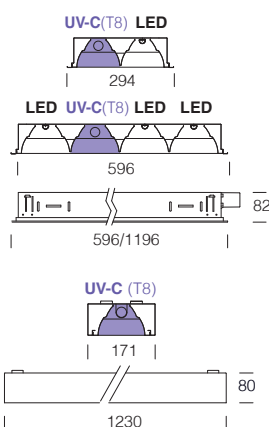
Housing: pressed steel, in a single piece of high mechanical resistance.

Diffuser: in technopolymer plastic specially designed for UV radiation lamps.

- 2-lamps version with separate switches: one for the general lights, the other for UV sanitization.
- complete with built-in UV module operating indicator to ensure the safety of people.

983 Forma				CLD			CELL (T8)		
colour	peso	version	code	LED	W tot	LUMEN OUTPUT (tq= 25 °C)	UV-A	W tot	UV-A (W) RADIATION
s. silver	7.20	1-lamp	162465-65	-	-	-	1x	66	21
s. silver	7.20	2-lamps	162466-65	1x	43	4000K - 5820lm - CRI 80	1x	66	21

IP20IK07



GENERAL CHARACTERISTICS

Housing: galvanized steel sheet.

Optics: in scored matt aluminium with wide light distribution.

- art. 877 with separate switches: one for the general lights, the other for UV sanitization.
- complete with built-in UV module operating indicator to ensure the safety of people.



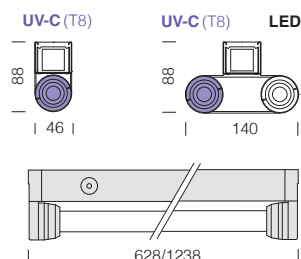
877 Comfort - matt scored optical

				CLD			CELL (T8)		
colour	weight	L	code	LED	W tot	LUMEN OUTPUT (tq= 25 °C)	UV-C	W tot	UV-C (W) RADIATION
white	2.20	294x596	151203-69	1x	10	4000K - 985lm - CRI 80	1x	21	3,95
white	4.10	294x1196	151204-69	1x	19	4000K - 1970lm - CRI 80	1x	38	13
white	3.50	596x596	151208-69	3x	28	4000K - 2985lm - CRI 80	1x	21	3,18

777 Comfort - matt scored optical

				CLD			CELL (T8)		
colour	weight	L	code	LED	W tot	LUMEN OUTPUT (tq= 25 °C)	UV-C	W tot	UV-C (W) RADIATION
white	3.50	171x1230	141201-69	-	-	-	1x	38	10,6

IP40IK07



GENERAL CHARACTERISTICS

Fixture housing: galvanized steel previously stove-enamelled with UV-stabilised white polyester resin; rounded edges to prevent cutting; polycarbonate end caps.

Standard supply: nylon fastening pawl supplied with power terminal block.

- art. 6501 with separate switches: one for the general lights, the other for UV sanitization.
- complete with built-in UV module operating indicator to ensure the safety of people.



6401 Rapid System T8 - with knife switch

















				CLD			CELL (T8)		
colour	weight	L	code	LED	W tot	LUMEN OUTPUT (tq= 25 °C)	UV-C	W tot	UV-C (W) RADIATION
white	0.90	46x628	238040-69	-	-	-	1x	21	4,5
white	1.40	46x1238	237531-69	-	-	-	1x	38	15

6501 Rapid System T8 - with knife switch

				CLD			CELL (T8)		
colour	weight	L	code	LED	W tot	LUMEN OUTPUT (tq= 25 °C)	UV-C	W tot	UV-C (W) RADIATION
white	0.95	140x628	238045-69	1x	8	4000K - 800lm - CRI 80	1x	21	4,5
white	1.90	140x1238	237536-69	1x	15	4000K - 1600lm - CRI 80	1x	38	15

“Recommended values for indoor and outdoor sports lighting”

(refer to Standard UNI EN 12193 for further details)

SPACES / SYSTEMS	Livello attività (a)	OUTDOOR (B)			INDOOR (B)			Note
		Illuminamento medio (lux)	Illuminamento medio (lux)	Illuminamento specifico (lux)	Illuminamento medio (lux)	Illuminamento medio (lux)	Illuminamento specifico (lux)	
 ATHLETICS	3	500	0,7	1000 (1)	500	0,7	1000 (1)	(1) fotofinish
	2	200	0,5		300	0,6		
	1	100	0,5		200	0,5		
 SWIMMING (POOLS)	3	500	0,7		500	0,7		
	2	300	0,7		300	0,7		
	1	200	0,5		200	0,5		
 BASEBALL	3	750 (1)	0,7(1)		750(1)	0,7(1)		(1) infield
	2	500 (1)	0,5(1)					
	1	300 (1)	0,5(1)					
 FOOTBALL	3	500	0,7					
	2	200	0,6					
	1	75	0,5					
 FOOTBALL FIVE	3	500	0,7		750	0,7		
	2	200	0,7		500	0,7		
	1	100	0,5		200	0,5		
 CYCLING	3	500	0,7	1000 (1)	750	0,7	1000 (1)	(1) fotofinish vert. plane
	2	300	0,7		500	0,7		
	1	100	0,5		200	0,5		
 GOLF	3-2	100 (1)	0,8	100 (2)				(1) tee (2) hole
 GYMNASTICS	3				500	0,7		
	2				300	0,6		
	1				200	0,5		
 HOCKEY and ROLLER SKATING	3	500	0,7		750	0,7		
	2	200	0,7		500	0,7		
	2	200	0,7		300	0,7		
 BASKETBALL VOLLEYBALL HANDBALL WRESTLING WEIGHTLIFTING JUDO	3	500	0,7		750	0,7		
	2	200	0,6		500	0,7		
 BOXING	3				2000 (1)	0,8		(1) on the ring
	2				1000 (1)	0,8		
	1				500 (1)	0,5		
 RUGBY	3	500	0,7					
	2	200	0,6					
	1	75	0,5					
 EQUESTRIAN SPORTS	3	500	0,7		500	0,7		
	2	300	0,6		200	0,5		
	1	200	0,5		100	0,5		
 MOTORSPORTS	3	200	0,6	1000 (1)	200	0,6	1000 (1)	(1) fotofinish
	2	200	0,6		200	0,6		
	1	80	0,5		80	0,5		
 ICE RINKS	3	750	0,7		750	0,7		
	2	500	0,7		500	0,7		
	1	200	0,5		300	0,7		
 TENNIS/SQUASH	3	500	0,7		750	0,7		
	2	300	0,7		500	0,7		
	1	200	0,6		300	0,5		

N.B.: Level: (a) 1. Non professional level - 2. Local professional level - 3. National and international professional level

(b) All luminance values, except otherwise stated, refer to the horizontal plane that matches the surfaces where the activity takes place (water surface for swimming activities).

Overview of illuminance levels for UEFA competitions

Type of match	UEFA illuminance level
<ul style="list-style-type: none"> • UEFA EURO • UEFA Champions League final • UEFA Europa League final 	Elite level A
<ul style="list-style-type: none"> • UEFA Champions League: group stage to semi-finals • UEFA Super Cup final 	Level A
<ul style="list-style-type: none"> • UEFA Women's EURO • UEFA European Under-21 Championship: Final tournament • UEFA Champions League: Play-offs • UEFA Europa League: group stage to semi-finals • UEFA European Football Championship: qualifying matches 	Level B
<ul style="list-style-type: none"> • UEFA Champions League: third qualifying round • UEFA Europa League: third qualifying round and play-offs • UEFA Champions League: second qualifying round • UEFA European Under-21 Championship: qualifying matches 	Level C
<ul style="list-style-type: none"> • UEFA Champions League: first and second qualifying rounds • UEFA Europa League: First and second qualifying rounds • Youth and Women's Competitions: Qualifying rounds, group-stage and knock-out rounds (excluding final(s)) 	Level D
• Non-broadcast matches	> 350 lux

UEFA illuminance requirements: Elite level A

Eh ave (average horizontal illuminance)		> 2,000 lux	
Uniformity U1h	Uniformity U2h	> 0.50	> 0.70
Ev ave-0° (vertical illuminance on 0° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-0°	Uniformity U2v-0°	> 0.40	> 0.50
Ev ave-90° (vertical illuminance on 90° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-90°	Uniformity U2v-90°	> 0.40	> 0.50
Ev ave-180° (vertical illuminance on 180° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-180°	Uniformity U2v-180°	> 0.40	> 0.50
Ev ave-270° (vertical illuminance on 270° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-270°	Uniformity U2v-270°	> 0.40	> 0.50
Match continuity mode (MCM)		Eh ave > 1,000 lux Ev4 ave > 600 lux	
Flicker factor (FF)		average < 5%	
Minimum adjacent uniformity ratio (MAUR)		> 0.60	
Colour temperature (Tk)		5,000–6,200K	
Colour rendering		≥ 80 Ra	
Maintenance factor (MF)		0.85	
Power supply		Elite level A	

CHEMICAL COMPOUND	METHACRYLATE	POLYCARBONATE	POLYAMIDE	PVC	ALUMINIUM	STEEL
Acetone	▲	●	●	●	■	■
Arsenic acid 20%	■	■	●	■	▲	●
Citric acid 20%	■	■	■	■	●	●
Hydrochloric acid 10%	■	■	▲	■	▲	●
Chloric acid	■	■	▲	■	▲	▲
Chromic acid	●	●	●	■	●	●
Formic acid up to 30%	●	●	■	■	▲	●
Nitric acid 20%	●	●	▲	■	▲	▲
Sulphuric acid up to 30%	■	■	▲	■	▲	▲
Salt water	■	■	●	●	●	■
Ethyl alcohol	▲	■	■	■	■	■
Isopropyl alcohol	●	▲	■	■	●	■
Aniline	▲	▲	●	▲	■	■
Ammonia	■	▲	■	●	■	●
Benzene	■	■	■	■	■	■
High grade fuel	■	▲	▲	●	■	■
Benzol	▲	▲	●	▲	●	■
Alcoholic drinks	■	■	■	■	■	■
Bromine	▲	●	▲	▲	●	■
White lime	●	●	▲	▲	▲	■
Diesel fuel	●	●	●	■	■	■
Marine climate	■	■	■	■	●	●
Chloroform	▲	▲	●	●	■	■
Liquid chlorine (vapours)	▲	▲	●	▲	■	▲
Calcium chloride	■	■	■	■	■	●
Ferric chloride	■	●	■	■	●	●
Hexane	■	●	■	■	■	■
Ethylether	■	▲	■	▲	■	■
Phenols	▲	▲	▲	●	●	■
Glycerol	■	●	■	■	■	■
Hydrocarbons	●	▲	■	●	■	■
Methanol	▲	▲	●	■	●	■
Mineral oils	■	▲	■	■	■	■
Silicone oil	●	■	■	■	■	■
Diesel oil	■	●	■	■	■	■
Oil and food fats	■	●	■	■	■	■
Ozone	■	●	▲	●	■	●
Potassium permanganate	■	■	■	■	●	■
PVC with plasticizers	▲				■	■
Soda	■	▲	■	■	▲	▲
Watery zinc sulphate	■	■	■	■	■	■
Aluminium sulphate	■	■	■	■	■	■
Copper sulphate	■	■	■	■	■	●
Carbon tetrachloride	▲	▲	■	▲	■	■
Toluene	▲	●	●	▲	■	■
Trichloroethylene	▲	▲	■	●	■	■

The chemical products in the table are only a part of the existing ones. Please, check the compatibility between the component product materials and the installation environment. There may be some variations in compatibility between the material and chemical product according to the concentration and temperature. Clean them with soapy water or with a very dilute solution of neutral and non-aggressive detergents. All of trichlorethylene type products, pericloroethylene or solvents are to be avoided. Don't use abrasive or highly alkaline cleaners. Never scrape the surfaces with squeegees, razor blades or other sharp instruments. Don't clean products when hot or with an high ambient temperature.

Symbols used

- ▲ = non resistant
- = partially resistant
- = resistant

LED general chemical compatibility list

This chemical compatibility list includes materials that are used and found in LED luminaire assembly and are known by us as critical regarding certain of their effects on LED packages, if used in the proximity of LEDs since interaction with the LED package may negatively impact the performance of the LEDs. This list only contains certain materials and certain compatibilities known to us and is not intended to provide a listing of all possible substances and their effects. Therefore, the absence of a substance from this list can neither be seen as a recommendation nor as any evaluation of such substance. Likewise, the concerns and applications in the list cannot be seen as conclusive, but other applications and/or concerns are possible. This list is subject to change without notice. **The list is provided for information only and is not a warranty or a specification.**

Material	Examples of applications	Effect on the LED packages		Examples for concerns regarding effects on the LED packages
		Critical	Non Critical	
Acetates	Can be found in the outgassing of adhesive or conformal coating materials.	X		Corrosion risk for LED.
Acetic acid	Can be found in RTV silicones, cutting fluids, degreasers or adhesives.	X		Corrosion risk for LED. May interact with silicones.
Acetone	Solvent	X		May cause swelling of silicone encapsulation.
Acrylates	Can be found in the outgassing of adhesive or conformal coating materials	X		Corrosion risk for LED if the adhesive or conformal coating material is not properly cured.
Acrylic adhesives (Two component type)	Sealants and adhesives	X		Corrosion risk for LED.
Acrylic latex caulk	Sealing materials	X		Corrosion risk for LED.
Acrylic rubber	Rubber/plastic seals	X		Corrosion risk for LED.
Acrylonitrile-Butadiene-Styrene, ABS	Structural plastic (widely used in mobile phones)	X		Discoloration of encapsulant, housing material and lead frame may occur.
Aldehydes	Can be found in the outgassing of adhesive or conformal coating materials.	X		Discoloration of encapsulant, housing material and lead frame may occur.
Amines	Base material. Can be found in detergents or cleaners.	X		Discoloration of encapsulant, housing material and lead frame may occur.
Ammonia	Base material. Can be found in detergents or cleaners.	X		Discoloration of encapsulant, housing material and lead frame may occur.
Benzene	Solvent	X		May interact with silicones.
Bleach solution (mainly the component of hypochlorous acid)	Cleaning agents	X		Outgassing from bleach solutions may cause silicone encapsulation/lens/housing tarnishing; direct contact may cause encapsulation swelling and detachment.
Butadiene-containing adhesive	Adhesive	X		May cause material yellowing.
Butadiene rubber	Rubber/plastic seals	X		May cause silicone and lead frame yellowing.
Castor oil	Oil/lubricant	X		If the lubricant is made from natural sources, it may contain sulfur and cause silver-containing lead frame corrosion. May interact with silicones.
Chlorinated polyethylene	Rubber/plastic seals	X		May contain trace amount of HCl and result in lead frame corrosion.
Chlorosulphonated material	Rubber/plastic seals	X		Corrosion risk for LED.
Cutting fluids (oil & water based)	Manufacturing materials	X		May cause silicone encapsulation delamination, mechanical strength change or even crack.
Cyanoacrylates (could be found in adhesive materials)	Sealants and adhesives	X		Discoloration of encapsulant, housing material and lead frame; corrosion risk.
Dichloromethane	Solvent	X		May soften and/or tarnish silicone encapsulant/housing/lens.
Dienes	Can be found in the outgassing of adhesive or conformal coating materials.	X		Discoloration risk for silicone encapsulant/housing/lens.
Epichlorohydrin	Rubber/plastic seals	X		Corrosion risk for LED.
Epoxy adhesive (amine types)	Adhesive	X		Risky conditions due to amino compound outgassing, which can cause LED discoloration.
Ethanolamine	Can be found in detergents, emulsifiers, polishes	X		May cause pH change and material yellowing issues.
Ethylene propylene (EPDM) rubber	Rubber/plastic seals	X		Corrosion risk for LED.
Formaldehyde	Can be found in cleaners, mineral spirits, petroleum, paint or gasoline.	X		May cause material yellowing.
Gaskets (containing sulfur compounds)		X		Corrosion risk for LED.
Gasoline	Solvent	X		May soften and/or tarnish the silicone encapsulant/housing/lens.
General lubricants	Manufacturing materials	X		Delamination risk for the silicone encapsulant/housing/lens.
General surfactantse	Manufacturing materials	X		Delamination risk for the silicone encapsulant/housing/lens.
Glycol ethers	Solvent. Can be found in cleaners, mineral spirits, petroleum, paint or gasoline.	X		May cause silicone to become turbid and affect the light output. May cause encapsulation swelling/softening.
Halogenated hydrocarbons (containing F, Cl, Br elements)	Can be found in machine oil, lubricants, solder fluxes/pastes or flame retardants.	X		Corrosion risk for LED. May interact with silicones.
Hydrochloric acid	Can be found in cleaners and cutting fluids.	X		Corrosion risk for LED. May interact with silicones and phosphors.
Isophorone di-isocyanate	Can be found in coating/potting/casting materials, polyurethane.	X		Discoloration of encapsulant, housing material and lead frame as well as silicone degradation.
Lard/Oil	Oil/lubricant	X		May weaken adhesion. May cause encapsulation swelling. May interact with silicones.
Linseed oil/Oil	Oil/lubricant	X		May weaken adhesion. May cause encapsulation swelling. May interact with silicones.
Methyl ethyl ketone (MEK) solvent	Solvent. Can be found in cleaners, mineral spirits, petroleum, paint or gasoline.	X		May interact with silicones.
Methylated Spirits/Mineral spirits	Manufacturing materials	X		May weaken adhesion. May cause encapsulation swelling. May interact with silicones.

Material	Examples of applications	Effect on the LED packages		Examples for concerns regarding effects on the LED packages
		Critical	Non Critical	
Methyl isobutyl ketone (MIBK) solvent	Solvent. Can be found in cleaners, mineral spirits, petroleum, paint or gasoline.	X		May degrade the encapsulant and the housing material.
Mineral Oil Lubricants	Manufacturing materials	X		May weaken adhesion. May cause encapsulation swelling. May interact with silicones.
Mineral splits	Solvent	X		May interact with silicones. May cause encapsulation swelling
Neodecanoic acid glycidyl ester	Surface coating, Paint drier	X		May cause silicone and housing material yellowing and silicone softening.
Nitric acid	Can be found in cleaners and cutting fluids	X		Corrosion risk for LED. May cause encapsulant and housing yellowing and phosphor degradation. May interact with silicones.
Outgassing aromatic hydrocarbons (e.g. toluene, benzene, xylene, etc.)	Solvent	X		May interact with silicone encapsulant.
Paints (containing sulfur compounds)		X		May cause silver-containing lead frame corrosion.
Perfluoro elastomers	Rubber/plastic seals	X		May interact with silicone encapsulant.
Petroleum oil	Petroleum oil	X		May cause material swelling and thus weaken the adhesion. May cause material yellowing and decrease the overall light output. May interact with silicones. May cause silver-containing lead frame corrosion.
Petroleum byproducts (containing sulfur compounds)	Can be found in exhaust	X		May cause silver-containing lead frame corrosion.
Phenyl mercuric neodecanoate	Can be found in coatings, adhesives, sealants or elastomers	X		May cause material swelling and thus weaken the adhesion. May cause material yellowing, lead frame staining and decrease the overall light output.
Phosphoric acid	Can be found in cleaners and cutting fluids.	X		Depending on concentration, temperature and exposure time to the housing material, silicone, phosphor or lead frame, degradation may occur.
Polynorbornene rubber	Rubber/plastic seals	X		Discoloration of the silicone and lead frame staining.
Polystyrene (GPPS)	Structural plastic	X		Discoloration of the silicone and lead frame staining.
Polysulphide rubber	Rubber/plastic seals	X		Lead frame discoloration/degradation
Polyurethane material	Adhesive, tape, plastic rubber, sealant, potting material	X		Improper curing of polyurethane may result in outgassing and silicone degradation issues. Properly cured polyurethane should not be critical.
Potassium hydroxide	Alkaline/Alkali. Can be found in detergents or cleaners.	X		Depending on concentration, temperature and exposure time to housing material, silicone, phosphor or lead frame, degradation may occur.
Release Agents (Oil, Wax, Solvent and Water based)	Manufacturing materials	X		Delamination risk for the silicone encapsulant/housing/lens.
Sealants (containing sulfur compounds)		X		May cause silver-containing lead frame corrosion.
Silicone	Sealants, adhesives, encapsulant, potting and coating resins	X	X	Depending on the silicone source, grade and curing condition, may cause package failure. Curing byproducts during silicone curing may cause package contamination. Electronics material grade with low ionic and impurity content is highly recommended.
Silicone oil	Oil/lubricant	X		May interact with silicones.
Sodium hydroxide	Alkaline/Alkali. Can be found in detergents or cleaners.	X		Depending on concentration, temperature and exposure time to housing material, silicone, phosphor and lead frame, degradation may occur.
Solder Flux Resin	PCB manufacturing	X	X	Excess solder flux resin could cause lead frame staining and corrosion risk for LED.
Styrene butadiene rubber	Rubber/plastic seals	X		May cause silicone and lead frame yellowing.
Sulfuric acid	Can be found in cleaners or cutting fluids.	X		Depending on concentration, temperature and exposure time to housing material, silicone, phosphor and lead frame, degradation may occur; potential corrosion risk.
Tetrachloromethane	Solvent	X		May soften and/or tarnish the silicone encapsulant/housing/lens.
Tetradecylamine	Can be found in detergents.	X		May soften and/or tarnish the silicone encapsulant/housing/lens.
Toluene	Solvent. Can be found in cleaners.	X		May interact with silicones.
Trimethylhexamethylenediamine	Hardener in coating/potting/casting/adhesive epoxy materials	X		Discoloration of encapsulant, housing material and lead frame may occur.
UV acrylic adhesives	Sealants and adhesives	X		Corrosion risk for LED.
Xylene	Solvent. Can be found in cleaners.	X		May interact with silicones.

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Acc.5	991903-00	6	288	439
Acc.5	991904-00	6	288	439
Acc.5	991905-00	6		439
Acc.5	991906-00	6		439
Acc.5	991907-00	6		439
Acc.24	995771-00	5		201
Acc.24	995773-00	5		201
Acc.24	995776-00	5		201
Acc.25	997930-00	5		215
Acc.26	995697-00	5		198
Acc.26	995698-00	5		198
Acc.26	997931-00	5		215
Acc.41	995506-00	2	20	161, 173
Acc.41	995508-00	2	20	161, 173
Acc.41	995509-00	2	20	173
Acc.48	997706-00	1	20	465
Acc.49	997802-00	1	20	465
Acc.50	991216-00	1		438
Acc.55	998098-00	10		362
Acc.56	995727-00	10		365
Acc.59	997900-00	1	25	454
Acc.60	997901-00	1	15	454
Acc.61	986512-00	1		522, 523
Acc.63	986511-00	1		522, 523
Acc.65	986507-00	1		522, 523
Acc.72	997910-00	1	102	465
Acc.74	997911-00	1	20	465
Acc.96	991217-00	4		264
Acc.96	991218-00	4		264
Acc.109	991309-00	1		312
Acc.109	991312-00	1		320
Acc.114	991330-00	1		268
Acc.115	991331-00	20		438
Acc.116	991332-00	10	268, 277, 278	
Acc.118	991334-00	10	268, 278	
Acc.119	991335-00	20	268, 272, 277	
Acc.120	991336-00	20	268, 277, 278	
Acc.129	991321-00	1	463, 464	
Acc.129	991329-00	1	463, 464	
Acc.151	991310-00	1		464
Acc.151	991365-00	1		464
Acc.153	991359-00	1		464
Acc.164	998097-00	1		454
Acc.179	997661-00	1		286
Acc.179	997663-00	1	280, 284	
Acc.179	997665-00	1	281, 285	
Acc.179	997666-00	1		286
Acc.188	995748-00	10		277
Acc.189	995749-00	1		277
Acc.189	995750-00	1		277
Acc.189	995751-00	1		277
Acc.189	995752-00	1		277
Acc.198	995789-00	1		229
Acc.200	998011-00	20		32
Acc.205	426941-00	1	428, 465	
Acc.205	426948-00	1	428, 465	
Acc.210	426950-00	1		460
Acc.210	426951-00	1		460
Acc.211	426952-00	1		460
Acc.211	426953-00	1		460
Acc.212	426954-00	1		461
Acc.212	426955-00	1		461
Acc.213	426956-00	1		461
Acc.213	426957-00	1		461
Acc.214	426958-00	1		461
Acc.214	426959-00	1		461
Acc.215	426960-00	1		461

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Acc.222	991315-00	1		448
Acc.222	991378-00	1		442, 454
Acc.222	991381-00	1		442, 454
Acc.223	991320-00	1		450, 452
Acc.223	991333-00	1		450, 452
Acc.224	998014-00	20		32
Acc.235	997927-00	1		198
Acc.236	997926-00	1		198
Acc.248	997708-00	1	20	428, 465
Acc.249	997803-00	1	20	465
Acc.286	991445-00	1		335, 432
Acc.290	991438-00	1		331
Acc.290	991439-00	1		331
Acc.297	426448-00	1		349, 457
Acc.299	991314-00	1	444, 448, 450, 452, 454	
Acc.299	991396-00	1	336, 345, 347, 367, 440, 442, 444, 446, 448, 454, 458	
Acc.300	426970-00	1		461
Acc.300	426971-00	1		461
Acc.301	426972-00	1		460
Acc.301	426973-00	1		460
Acc.303	426976-00	1		460
Acc.303	426977-00	1		460
Acc.304	426978-00	1		460
Acc.305	426979-00	1		461
Acc.305	426980-00	1		461
Acc.306	145515-00	5		161
Acc.306	145516-00	5		161
Acc.306	145517-00	5		161
Acc.313	993925-00	1		283, 522
Acc.314	993926-00	1		283, 522
Acc.320	998004-00	100	5, 11, 12, 16, 19, 26, 28, 30, 39	
Acc.321	995210-00	12		56
Acc.323	995220-00	1		56
Acc.323	995221-00	1		56
Acc.323	995222-00	1		56
Acc.323	995223-00	6		56
Acc.323	995224-00	1		56
Acc.325	995225-00	10		56
Acc.326	998059-00	20		5
Acc.327	426942-00	1		460
Acc.327	426943-00	1		460
Acc.328	426944-00	1		460
Acc.328	426945-00	1		460
Acc.329	998003-00	10		340
Acc.333	997915-00	1	173, 181, 194	
Acc.334	997916-00	1	173, 181, 194	
Acc.338	995226-00	10		56
Acc.339	993836-00	10		165, 236
Acc.339	993854-00	10		163, 175
Acc.340	986550-00	1		525
Acc.342	986552-00	1		525
Acc.343	986553-00	1		525
Acc.344	986554-00	1		525
Acc.345	995772-00	1		215
Acc.350	997925-00	5		181
Acc.356	986555-00	1		525
Acc.364	998020-00	1		262
Acc.365	998022-00	1		262
Acc.366	998024-00	1		262
Acc.367	426997-00	4		440
Acc.367	426998-00	4		440
Acc.368	427002-00	1		452, 454
Acc.368	427003-00	1		452, 454

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Acc.369	993838-00	10		287
Acc.370	998040-00	10		73, 83
Acc.371	998041-00	10		73, 83
Acc.372	998042-00	10		73, 83
Acc.376	145151-00	10		47, 236, 520
Acc.381	326503-00	1		460
Acc.384	995794-00			209
Acc.384	995795-00			209
Acc.387	991391-00	1		367
Acc.388	991392-00	1		367
Acc.389	991393-00	1		367
Acc.395	145081-00	1	44	47
Acc.395	145082-00	1	44	47
Acc.395	145090-00	1	44	47
Acc.395	145091-00	1	44	47
Acc.397	145098-00	1		47
Acc.397	145099-00	1		47
Acc.399	993837-00	10		287, 521
Acc.401	420450-00	1		264
Acc.405	991385-00	1		434, 465
Acc.405	991407-00	1		428
Art.420	214565-00	1		55
Art.420	214565-54	1		55
Art.420	214565-92	1		55
Art.420	214566-00	1	168	55
Art.420	214566-54	1		55
Art.420	214566-92	1		55
Art.420	214567-00	1	120	55
Art.420	214567-54	1		55
Art.420	214567-92	1		55
Acc.451	991250-00	8		267
Acc.451	991251-00	8		267
Acc.452	991252-00	4		267
Acc.452	991253-00	4		267
Acc.453	991254-00	4		267
Acc.453	991255-00	4		267
Acc.462	997933-00	5		194
Acc.463	997934-00	1		194
Acc.470	995133-00	1		57, 117
Acc.470	995134-00	1		57, 117
Acc.470	995135-00	1		57, 117
Acc.470	995136-00	1		57, 117
Acc.471	991461-00	4		442
Acc.471	991462-00	4		442
Acc.482	995785-00	1		215
Acc.482	995786-00	1		229
Acc.482	995788-00	1		215
Acc.502	991260-00	4		267
Acc.503	991261-00	4		267
Acc.504	991262-00	1	394, 398, 420	
Acc.504	991263-00	1	372, 384, 398	
Acc.504	991264-00	1		406, 414
Acc.508	991265-00	1		406, 414
Acc.508	991266-00	1	394, 398, 420	
Acc.508	991267-00	1	372, 384, 394, 398	
Acc.513	991290-00	1		336
Acc.513	991291-00	1		336
Acc.514	991280-00	1		346
Acc.515	991281-00	1		346
Acc.516	991282-00	1		346
Acc.517	991283-00	1		346
Acc.518	991284-00	1		340
Acc.519	991285-00	1		340
Acc.528	991288-00	1		346
Acc.528	991463-00	1		448, 450
Acc.530	998099-00	1		238
Acc.531	998100-00	10		238

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Acc.532	991292-00	1		336	Art.716	114024-00	1	30	29	Art.840	150208-39	5	50	14
Acc.532	991293-00	1		336	Art.716	114024-39	1		29	Art.840	150208-0041	5		14
Acc.533	993975-00	10		139	Art.716	114024-0041	1		29	Art.840	150209-00	5	40	14
Acc.535	993970-00	5		236, 520	Art.716	114024-3941	1		29	Art.840	150209-39	5	40	14
Acc.536	993972-00	5		236, 520	Art.731	143533-00	1	45	8	Art.840	150209-0041	5		14
Acc.537	993974-00	1		236, 520	Art.731	143533 -0041	1		8	Art.840	150211-00	5	50	14
Acc.539	993990-00	5	40	132	Art.731	143534-00	1	38	9	Art.841	153533-00	1	45	6
Acc.539	993991-00	5	40	132	Art.731	143534-0041	1		9	Art.841	153533-0041	1		6
Acc.539	993992-00	5		132	Art.731	143535-00	1	38	9	Art.841	153534-00	1	38	7
Acc.539	993993-00	5		132	Art.731	143535-0041	1		9	Art.841	153534-0041	1		7
Acc.539	993994-00	5		132	Art.731	143536-00	1	38	8	Art.841	153535-00	1	38	7
Acc.540	993978-00	5	40	132	Art.731	143536-0041	1		8	Art.841	153535-0041	1		7
Acc.540	993979-00	5	40	132	Art.731	143538-00	1	38	9	Art.841	153536-00	1	38	6
Acc.540	993985-00	5		132	Art.731	143538-0041	1		9	Art.841	153536-0041	1		6
Acc.540	993986-00	5		132	Art.731	143539-00	1	38	9	Art.841	153537-00	1	19	6
Acc.540	993987-00	5		132	Art.731	143539-0041	1		9	Art.841	153537-0041	1		6
Acc.541	993980-00	5		288	Art.754	140212-00	1	30	31	Art.841	153538-00	1	38	7
Acc.542	993981-00	5		288	Art.754	140213-00	1	30	31	Art.841	153538-0041	1		7
Acc.543	993982-00	5		288	Art.773	141070-00	1	33	10	Art.841	153539-00	1	38	7
Acc.544	993983-00	5		288	Art.773	141071-00	1	33	10	Art.841	153539-0041	1		7
Acc.545	993984-00	5		288	Art.773	141072-00	1	30	10	Art.842	150205-00	5	50	15
Acc.578	997709-00	1		414	Art.777	141201-69	1		533	Art.842	150205-39	5	50	15
Acc.588	993971-00	5		44	Art.781	156301-00	1	75	53	Art.842	150205-0041	5		15
Acc.590	998115-00	1		37	Art.781	156301-19	1		53	Art.842	150206-00	5	40	15
Acc.592	998192-00	10		99	Art.781	156301-0024	1		53	Art.842	150206-39	5	40	15
Acc.595	998031-00	1		12	Art.781	156301-0096	1		53	Art.842	150206-0041	5		15
Acc.595	998032-00	1		12	Art.808	153025-00	1	22	33	Art.843	152080-00	1	22	40
Acc.595	998035-00	1	16, 19, 26, 60, 61		Art.810	150340-00	1	44	27	Art.843	152081-00	1	18	40
Acc.595	998036-00	1		19	Art.810	150340-19	1		27	Art.844	150225-00	5	50	13
			13, 14, 15, 16, 20, 21, 23, 27, 28, 30		Art.810	150340-39	1		27	Art.844	150225-0041	5		13
Acc.600	986604-00	1			Art.810	150340-0041	1		27	Art.845	150220-00	1	30	39
			13, 14, 15, 16, 20, 21, 23, 27, 28, 30		Art.810	150340-1928			27	Art.845	150220-07	1	26	39
Acc.600	986604-31	1			Art.810	150340-3941	1		27	Art.845	150220-19	1		39
			13, 14, 15, 16, 20, 21, 23, 27, 28, 30		Art.810	150341-00	1	44	27	Art.845	150221-00	1	14	39
Art.601	115594-00	1	155	45	Art.810	150341-19	1		27	Art.845	150221-0041	1		39
Art.601	115594-07	1	155	45	Art.810	150341-39			27	Art.845	150223-0024	1		62
Art.601	115595-00	1	86	45	Art.810	150341-0041	1		27	Art.845	150223-89	1		63
Art.601	115595-07	1		45	Art.810	150341-1928			27	Art.848	153436-00	1	72	32
Art.601	115596-00	1	70	45	Art.810	150341-3941			27	Art.848	153437-00	1	72	32
Art.601	115596-07	1	70	45	Art.811	150350-00	1	44	27	Art.848	153438-00	1	72	32
Art.602	115597-00	1	140	45	Art.811	150350-19	1		27	Art.854	150212-00	2	20	31
Art.602	115597-07	1	140	45	Art.811	150350-39			27	Art.854	150213-00	2	20	31
Art.602	115598-00	1	70	45	Art.811	150350-0041	1		27	Art.861	150459-00	1	28	11
Art.602	115598-07	1	70	45	Art.811	150350-1928			27	Art.864	150460-00	1	28	11
Art.603	115520-00	1	144	43	Art.811	150350-3941			27	Art.873	151050-00	1	33	10
Art.603	115520-19	1		43	Art.811	150351-00	1	44	27	Art.873	151050-07	1		10
Art.603	115520-0041	1	144	43	Art.811	150351-19	1		27	Art.873	151052-00	1	30	10
Art.603	115521-00	1	72	43	Art.811	150351-39			27	Art.873	151052-07	1		10
Art.603	115521-19	1		43	Art.811	150351-0041	1		27	Art.877	151203-69			533
Art.603	115521-0041	1	72	43	Art.811	150351-1928			27	Art.877	151204-69	1		533
Art.603	115522-00	1	72	43	Art.811	150351-3941			27	Art.877	151208-69	1		533
Art.603	115522-19	1		43	Art.812	150330-1924	1		60	Art.882	156405-00	1		37
Art.603	115522-0041	1	72	43	Art.813	150331-1989	1		61	Art.882	156405-39	1		37
Art.604	115532-00	1	144	43	Art.830	150242-00	5	50	20	Art.883	156415-00	1		37
Art.604	115534-00	1	72	43	Art.830	150242-39	5	50	20	Art.883	156415-39	1		37
Art.604	115535-00	1	72	43	Art.830	150242-0041	5		20	Art.883	156416-00	1		37
Art.616	112535-00	10	200	56	Art.830	150243-00	5	30	20	Art.883	156416-39	1		37
Art.616	112535-0066	10		56	Art.830	150243-39	5	30	20	Art.884	156424-00	1		37
Art.617	112545-00	10	200	56	Art.830	150243-0041	5		20	Art.884	156424-39	1		37
Art.617	112545-0066	10		56	Art.830	150244-00	5	15	20	Art.884	156425-00	1		37
Art.618	112565-00	10	200	56	Art.831	150232-00002264	5		23	Art.884	156425-39	1		37
Art.618	112565-0066	10		56	Art.831	150237-00	5	30	23	Art.884	156427-00	1		37
Art.619	112575-00	10	200	56	Art.832	150232-00	5	50	21	Art.884	156427-39	1		37
Art.619	112575-0066	10		56	Art.832	150233-00	5	30	21	Art.885	156450-00	1	220	35
Art.620	112581-00	1	120	57	Art.832	150234-00	1	15	21	Art.885	156450-07	1		35
Art.620	112582-00	1	120	57	Art.833	150240-00	5		17	Art.885	156451-00	1	220	35
Art.708	143025-00	1	22	33	Art.840	150208-00	5	50	14	Art.885	156451-07	1		35
										Art.885	156451-0024	1		64

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Art.885	156451-89	1		65
Art.885	156460-00	1	220	35
Art.885	156460-07	1		35
Art.885	156461-00	1	220	35
Art.885	156461-07	1		35
Art.885	156462-00	1	220	35
Art.885	156462-07	1		35
Acc.898	998025-00	20		32
Acc.899	998027-00	20		32
Acc.900	998010-00	20		33
Acc.901	998026-00	20		10
Acc.905	998013-00	5		298, 520
Acc.907	998038-00	20	13, 14, 15, 20, 21, 23, 26	
Art.910	156470-00	1		41
Art.910	156470-39	1		41
Art.910	156471-00	1		41
Art.910	156471-39	1		41
Art.916	114014-00	1	26	29
Art.916	114014-15	1	26	29
Art.916	114014-39	1	26	29
Art.916	114014-0041	1		29
Art.916	114014-3941	1		29
Art.921	164530-03	1	200	91
Art.921	164531-03	1	123	91
Art.921	164532-03	1	123	91
Art.921	164533-03	1		91
Art.921	164534-03	1	83	91
Art.921	164535-03	1	83	91
Art.927	164700-00	1	180	84
Art.927	164700-39	1	180	85
Art.927	164700-0083	1	180	85
Art.927	164701-00	1	72	84
Art.927	164701-07	1	72	84
Art.927	164701-19	1		89
Art.927	164701-39	1	72	85
Art.927	164701-0083	1	72	85
Art.927	164701-0783	1	72	85
Art.927	164702-00	1	72	84
Art.927	164702-07	1	72	84
Art.927	164702-19	1		89
Art.927	164702-39	1	72	85
Art.927	164702-0083	1	72	85
Art.927	164702-0783	1	72	85
Art.927	164703-00	1	108	84
Art.927	164703-07	1	108	84
Art.927	164703-19	1		89
Art.927	164703-39	1	108	85
Art.927	164703-0083	1	108	85
Art.927	164703-0783	1	108	85
Art.927	164704-00	1	60	84
Art.927	164704-07	1	60	84
Art.927	164704-19	1		89
Art.927	164704-22	1		87
Art.927	164704-39	1	60	85
Art.927	164704-0083	1	60	85
Art.927	164704-0783	1	60	85
Art.927	164705-00	1	60	84
Art.927	164705-07	1	60	84
Art.927	164705-19	1		89
Art.927	164705-22	1		87
Art.927	164705-39	1	60	85
Art.927	164705-0083	1	60	85
Art.927	164705-0783	1	60	85
Acc.938	998073-00	50		72, 82
Acc.951	998190-00	1		99
Acc.951	998191-00	1		99
Art.957	164711-00	1	72	86

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Art.957	164711-07	1	72	86
Art.957	164712-00	1	72	86
Art.957	164712-07	1	72	86
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Art.957	164714-07	1	60	86
Art.957	164714-22	1		87
Art.957	164715-00	1	60	86
Art.957	164715-07	1	60	86
Art.957	164715-22	1		87
Art.957	164717-00	1	60	86
Art.957	164717-07	1	60	86
Art.957	164730-00	1	72	90
Art.957	164730-07	1	72	90
Art.957	164730-0041	1		90
Art.957	164736-00	1	72	90
Art.957	164736-07	1	72	90
Art.957	164736-0041	1		90
Art.960	164751-00	1	70	77
Art.960	164751-07	1	70	77
Art.960	164752-00	1	70	77
Art.960	164752-07	1	70	77
Art.960	164754-00	1	70	77
Art.960	164754-07	1	70	77
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Art.960	164755-07	1	70	77
Art.963	164762-00	1	70	74
Art.963	164762-07	1	70	74
Art.963	164763-00	1	70	74
Art.963	164763-07	1	70	74
Art.963	164764-00	1	70	74
Art.963	164764-07	1	70	74
Art.963	164764-22	1		75
Art.963	164764-0041	1		74
Art.963	164765-00	1	70	74
Art.963	164765-07	1	70	74
Art.963	164765-22	1		75
Art.963	164765-0041	1		74
Art.963	164766-00	1	70	74
Art.963	164766-07	1		74
Art.963	164766-0041	1		74
Art.965	164780-00	1	70	79
Art.965	164781-00	1	70	79
Art.970	164731-00	1	70	81
Art.970	164731-07	1	70	81
Art.970	164732-00	1	70	81
Art.970	164732-07	1	70	81
Art.970	164734-00	1	70	81
Art.970	164734-07	1	70	81
Art.970	164735-00	1	70	81
Art.970	164735-07	1	70	81
Art.971	164770-00	1	99	71
Art.971	164770-07	1	99	71
Art.971	164770-0041	1		71
Art.971	164771-00	1	99	71
Art.971	164771-07	1	99	71
Art.971	164771-0041	1		71
Art.971	164772-00	1	99	71
Art.971	164772-07	1	99	71
Art.971	164772-0041	1		71
Art.971	164773-00	1	99	71
Art.971	164773-07	1	99	71
Art.971	164773-0041	1		71
Art.971	164774-00	1	99	71
Art.971	164774-07	1	99	71
Art.971	164774-0041	1		71
Art.971	164775-00	1	99	71
Art.971	164775-07	1	99	71
Art.971	164775-0041	1		71

Art. / Acc.	Code disano	px n° pack	px n° pallet	pag.
Art.971	164776-00	1	99	71
Art.971	164776-07	1	99	71
Art.971	164776-0041	1		71
Art.971	164777-00	1	99	71
Art.971	164777-07	1	99	71
Art.971	164777-0041	1		71
Art.972	164790-00	1	70	78
Art.972	164791-00	1	70	78
Art.974	164785-00	1	99	71
Art.974	164785-07			71
Art.974	164785-0041			71
Art.974	164787-00	1	99	71
Art.974	164787-07			71
Art.974	164787-0041			71
Acc.975	165564-00	1	50	72
Acc.975	165565-00	1	50	69, 82
Acc.975	165566-00	1	50	92
Acc.975	165567-00	1	50	92
Art.976	162430-00	1	45	95
Art.976	162431-00	1	45	95
Art.976	162432-00	1	45	95
Art.976	162433-00	1	45	95
Art.977	162470-00	1	45	95
Art.977	162471-00	1	45	95
Art.977	162472-00	1	45	95
Art.977	162473-00	1	45	95
Acc.978	998078-00	10	500	69, 72, 82
Art.983	162465-00	1	45	94
Art.983	162465-65			532
Art.983	162466-00	1	45	94
Art.983	162466-65	1		532
Art.983	162467-00	1	45	94
Art.983	162468-00	1	45	94
Art.988	162485-00	1	45	97
Art.988	162486-00	1	45	97
Art.993	162447-00	1	45	93
Art.993	162447-07	1		93
Art.993	162448-00	1	45	93
Art.993	162448-07	1		93
Art.993	162457-00	1	45	93
Art.993	162457-07	1		93
Art.993	162458-00	1	45	93
Art.993	162458-07	1		93
Art.993	162495-00	1	45	96
Art.993	162496-00	1	45	96
Art.995	162445-00	1	45	93
Acc.995	162445-16	1		92
Art.995	162446-00	1	45	93
Acc.995	162446-16	1		92
Art.995	162455-00	1	45	93
Art.995	162456-00	1	45	93
Acc.996	166670-00	1		93
Art.997	162400-00	1	45	94
Art.997	162401-00	1	45	94
Art.997	162402-00	1	45	94
Art.997	162403-00	1	45	94
Acc.1122	321012-00	2	44	156
Art.1172	322652-00	1	6	156
Art.1172	322653-00	1	6	156
Acc.1175	997651-00	1		131, 139
Acc.1175	997654-00	1		131
Art.1205	422140-00	1	12	358
Art.1205	422141-00	1	12	358
Art.1206	431001-00	1	200	296
Art.1207	431501-00	1	200	297
Art.1208	431601-00	1	200	297
Art.1209	431002-00	1		296
Art.1210	431502-00	1		297

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Art.1211	431602-00	1		297	Acc.1408	426324-00	1		441	Acc.1480	425052-00	1		445
Art.1212	431603-00	1		297	Acc.1408	426325-00	1		441	Acc.1480	425053-00	1		445
Art.1220	431801-00	10	240	277	Acc.1408	426326-00	1		441	Acc.1480	425054-00	1		445
Art.1224	411000-00	1	18	195	Acc.1408	426337-00	1		441	Acc.1480	425055-00	1		445
Art.1224	411001-00	1	18	195	Acc.1408	426338-00	1		441	Acc.1480	425056-00	1		445
Art.1225	411010-00	1	18	195	Acc.1408	426339-00	1		441	Acc.1480	425057-00	1		445
Art.1225	411011-00	1	18	195	Acc.1409	426327-00	1		441	Acc.1480	425058-00	1		445
Art.1226	411020-00	1	18	196	Acc.1409	426328-00	1		441	Acc.1480	425059-00	1		445
Art.1226	411021-00	1	18	196	Acc.1409	426329-00	1		441	Acc.1480	425067-00	1		445
Art.1227	411030-00	1	18	196	Acc.1409	426334-00	1		441	Acc.1480	425068-00	1		445
Art.1227	411031-00	1	18	196	Acc.1409	426335-00	1		441	Acc.1480	425072-00	1		445
Art.1228	411050-00	1	18	197	Acc.1409	426336-00	1		441	Acc.1480	425073-00	1		445
Art.1228	411051-00	1	18	197	Acc.1410	425220-00	1		345	Acc.1480	425086-00	1		445
Art.1229	411060-00	1	18	197	Acc.1411	425230-00	1		345	Acc.1480	425087-00	1		445
Art.1229	411061-00	1	18	197	Acc.1415	426740-00	1		453	Acc.1480	425088-00	1		445
Art.1238	510600-00	1	32	253	Acc.1415	426741-00	1		453	Acc.1480	425089-00	1		445
Art.1238	510600-39	1	32	253	Acc.1415	426742-00	1		453	Acc.1481	425150-00	1		445
Art.1239	510610-00	1	16	253	Acc.1415	426743-00	1		453	Acc.1481	425151-00	1		445
Art.1239	510610-39	1	16	253	Acc.1416	426750-00	1		453	Acc.1481	425152-00	1		445
Art.1264	420665-00	1	96	265	Acc.1416	426751-00	1		453	Acc.1481	425153-00	1		445
Art.1264	420665-07	1		265	Acc.1416	426752-00	1		453	Acc.1481	425154-00	1		445
Art.1264	420666-00	1	96	265	Acc.1416	426753-00	1		453	Acc.1481	425155-00	1		445
Art.1264	420666-07	1		265	Acc.1417	426760-00	1		451	Acc.1481	425156-00	1		445
Art.1264	420669-00	1	96	265	Acc.1417	426761-00	1		451	Acc.1481	425157-00	1		445
Acc.1266	420915-00	10		265	Acc.1417	426762-00	1		451	Acc.1481	425158-00	1		445
Acc.1266	420916-00	10		265	Acc.1417	426763-00	1		451	Acc.1481	425159-00	1		445
Acc.1266	420917-00	10		266	Acc.1417	426764-00	1		451	Acc.1481	425160-00	1		445
Art.1275	428605-00	1	95	267	Acc.1417	426765-00	1		451	Acc.1481	425161-00	1		445
Acc.1278	428617-00	1		439	Acc.1418	426770-00	1		451	Acc.1481	425162-00	1		445
Acc.1278	428618-00	1		439	Acc.1418	426771-00	1		451	Acc.1481	425163-00	1		445
Acc.1278	428619-00	1		439	Acc.1418	426772-00	1		451	Acc.1481	425164-00	1		445
Art.1279	420322-00	1	75	265	Acc.1418	426773-00	1		451	Acc.1481	425165-00	1		445
Art.1279	420324-00	1	75	265	Acc.1418	426774-00	1		451	Acc.1481	425167-00	1		445
Art.1279	420325-00	1	75	265	Acc.1418	426775-00	1		451	Acc.1481	425168-00	1		445
Art.1280	420845-00	1	84	267	Acc.1420	425320-00	1		347	Acc.1485	425070-00	1		367
Art.1280	420846-00	1	84	267	Acc.1420	425321-00	1		347	Acc.1485	425074-00	1		449
Art.1282	423095-00	1	36	264	Acc.1421	425330-00	1		347	Acc.1485	425075-00	1		449
Art.1282	423096-00	1	36	264	Acc.1421	425331-00	1		347	Acc.1487	425060-00	1		367
Art.1290	420690-00	1	120	265	Acc.1440	425276-00	1		336	Acc.1487	425064-00	1		449
Art.1290	420690-19			266	Acc.1440	425277-00	1		336	Acc.1487	425065-00	1		449
Art.1290	420691-00	1	120	266	Acc.1441	425266-00	1		336	Acc.1490	425080-00	1		459
Art.1290	420691-07	1	120	266	Acc.1441	425267-00	1		336	Acc.1490	425081-00	1		459
Art.1290	420691-19			266	Acc.1461	426992-00	1		463	Acc.1490	425082-00	1		459
Art.1293	420410-00	1	54	264, 366	Acc.1461	427012-00	1		463	Acc.1491	426149-00	1		455
Art.1293	420410-73	1		264	Acc.1462	426908-00	1		463	Acc.1491	426153-00	1		455
Art.1293	420427-00	1	54	264, 366	Acc.1462	426909-00	1		463	Acc.1491	426159-00	1		455
Art.1335	425600-00	1	12	257	Acc.1462	426966-00	1		463	Acc.1491	426177-00	1		455
Art.1335	425600-39	1	12	257	Acc.1462	426967-00	1		463	Acc.1491	426178-00	1		455
Art.1335	425601-00	1	12	257	Acc.1463	426918-00	1		463	Acc.1491	426179-00	1		455
Art.1335	425601-39	1	12	257	Acc.1463	426919-00	1		463	Acc.1493	426187-00	1		455
Acc.1361	426961-00	1		462	Acc.1463	427016-00	1		463	Acc.1493	426188-00	1		455
Acc.1361	426987-00	1		257, 462	Acc.1463	427017-00	1		463	Acc.1493	426189-00	1		455
Acc.1362	426906-00	1		257, 462	Acc.1464	426990-00	1		463	Acc.1493	426197-00	1		455
Acc.1362	426907-00	1		257, 462	Acc.1464	427000-00	1		463	Acc.1493	426198-00	1		455
Acc.1362	426946-00	1		462	Acc.1465	426991-00	1		463	Acc.1493	426199-00	1		455
Acc.1362	426947-00	1		462	Acc.1465	427001-00	1		463	Acc.1498	425200-00	1		457
Acc.1363	426916-00	1		462	Acc.1473	426921-00	1		463	Acc.1498	425202-00	1		457
Acc.1363	426917-00	1		462	Acc.1473	427013-00	1		463	Acc.1498	425203-00	1		349
Acc.1363	427008-00	1		462	Acc.1477	425360-00	1		447	Acc.1498	425204-00	1		349
Acc.1363	427009-00	1		462	Acc.1477	425361-00	1		447	Acc.1508	426362-00	1		443
Acc.1364	426926-00	1		462	Acc.1477	425363-00	1		447	Acc.1508	426363-00	1		443
Acc.1364	426988-00	1		462	Acc.1477	425364-00	1		447	Acc.1508	426364-00	1		443
Acc.1365	426989-00	1		462	Acc.1478	425370-00	1		447	Acc.1508	426377-00	1		443
Acc.1365	426999-00	1		462	Acc.1478	425371-00	1		447	Acc.1508	426378-00	1		443
Acc.1373	426920-00	1		462	Acc.1478	425373-00	1		447	Acc.1508	426379-00	1		443
Acc.1373	427014-00	1		462	Acc.1478	425374-00	1		447	Acc.1509	426366-00	1		443
Art.1392	420435-00	1	60	55	Acc.1480	425050-00	1		445	Acc.1509	426367-00	1		443
Art.1395	420436-00	1	60	55	Acc.1480	425051-00	1		445	Acc.1509	426368-00	1		443

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Acc.1509	426369-00	1		443
Acc.1509	426373-00	1		443
Acc.1509	426374-00	1		443
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Acc.1509	426376-00	1		443
Acc.1510	426359-00	1		356
Acc.1510	426360-00	1		356
Art.1513	423250-00	1	6	360
Art.1513	423250-0016	1	6	360
Art.1513	423250-39	1	6	360
Art.1513	423251-00	1	6	360
Art.1513	423251-0016	1	6	360
Art.1513	423251-39	1	6	360
Art.1515	422390-00	1	48	277
Art.1515	422390-73	1		277
Art.1515	422391-00	1	48	277
Art.1515	422391-73	1		277
Art.1515	422392-00	1	48	277
Art.1515	422392-73	1		277
Art.1515	422393-00	1	48	277
Art.1515	422393-73	1		277
Art.1515	432836-00	1	48	277
Art.1515	432836-73	1		277
Art.1515	432837-00	1	48	277
Art.1515	432837-73	1		277
Art.1517	422370-00	1	12	359
Art.1517	422370-39	1	12	359
Art.1517	422371-00	1	12	359
Art.1517	422371-39	1	12	359
Art.1517	422372-00	1	12	359
Art.1517	422372-39	1	12	359
Art.1517	422373-00	1	12	359
Art.1517	422373-39	1	12	359
Art.1518	422380-00	1	12	359
Art.1518	422381-00	1	12	359
Art.1523	432835-00	1	28	276
Art.1531	510060-00	1	35	252
Art.1533	510260-00	1	57	252
Art.1535	510460-00	1	100	252
Art.1537	431802-00	1	200	269
Art.1537	431803-00	1	200	269
Art.1537	431815-00	10	200	269
Art.1537	431824-00	10	200	269
Art.1537	431828-00	1		269
Art.1537	431829-00	1		269
Art.1538	431837-00	1	200	269
Art.1538	431838-00	1	200	269
Art.1538	431839-00	1	200	269
Art.1538	431840-00	1	200	269
Art.1539	432834-00	1		519
Art.1547	420561-00	1	100	263
Art.1547	420562-00	1	100	263
Art.1550	420583-00	1	50	263
Art.1550	420584-00	1	50	263
Art.1550	420590-00	1	50	263
Art.1550	420592-00	1	50	263
Art.1554	420588-00	1	50	263
Art.1554	420589-00	1	50	263
Art.1554	420598-00	1	50	263
Art.1554	420599-00	1	50	263
Art.1556	420600-00	1	152	260
Art.1556	420601-00	1	152	260
Art.1556	420602-00	1	152	260
Art.1557	420610-00	1	152	261
Art.1557	420611-00	1	152	261
Art.1557	420612-00	1	152	261
Art.1558	420620-00	1	152	261
Art.1558	420621-00	1	152	261

Art. / Acc.	Code disano	px n° pack	px n° pallet	pag.
Art.1558	420622-00	1	152	261
Art.1561	422398-00	1	48	366
Art.1564	422394-00	1	48	277
Art.1564	422394-73	1		277
Art.1564	422395-00	1	48	277
Art.1564	422395-73	1		277
Art.1564	422396-00	1	48	277
Art.1564	422396-73	1		277
Art.1564	422397-00	1	48	277
Art.1564	422397-73	1		277
Art.1564	432838-00	1	48	277
Art.1564	432838-73	1		277
Art.1564	432839-00	1	48	277
Art.1564	432839-73	1		277
Art.1570	422400-00	1	12	359
Art.1570	422400-0016	1	12	359
Art.1570	422400-56	1		359
Art.1570	422401-00	1	12	359
Art.1570	422401-0016	1	12	359
Art.1570	422401-56	1		359
Art.1570	422403-00	1	12	359
Art.1570	422403-39	1	12	359
Art.1570	422404-00	1	12	359
Art.1570	422404-39	1	12	359
Art.1574	420631-00	1	108	258
Art.1574	420631-73	1		258
Art.1574	420632-00	1	108	258
Art.1574	420632-73	1		258
Art.1574	420634-00	1	108	258
Art.1574	420635-00	1	108	258
Art.1576	420641-00	1	108	259
Art.1576	420642-00	1	108	259
Art.1576	420644-00	1	108	259
Art.1576	420645-00	1	108	259
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Art.1576	420649-00	1	108	259
Art.1577	420651-00	1	108	259
Art.1577	420652-00	1	108	259
Art.1577	420654-00	1	108	259
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Art.1577	420656-00	1	108	259
Art.1577	420657-00	1	108	259
Art.1577	420658-00	1	108	259
Art.1577	420659-00	1	108	259
Art.1583	422212-00	1	2	357
Art.1583	422212-0016	1		357
Art.1583	422213-00	1	2	357
Art.1583	422213-0016	1		357
Art.1583	422304-00	1	2	357
Art.1583	422304-39	1	2	357
Art.1593	422212-73	1		357
Art.1593	422213-73	1		357
Art.1606	431635-00	1		295
Art.1607	431735-00	1		295
Art.1609	431770-00	1		294
Art.1611	530622-00	1	72	291
Art.1616	530680-00	1	72	291
Art.1619	530675-00	10		292
Art.1622	530690-00	6		280
Art.1622	530691-00	6		280
Art.1624	431745-00	1	75	294
Art.1626	431640-00	1	120	295
Art.1629	431752-00	1		294
Art.1634	530815-00	1		285
Art.1634	530817-00	1		285
Art.1635	530800-00	1		522

Art. / Acc.	Code disano	px n° pack	px n° pallet	pag.
Art.1637	530770-00	6		281
Art.1637	530771-00	6		281
Art.1638	530870-00	6		281
Art.1638	530871-00	6		281
Art.1650	530810-00	1		284
Art.1661	530816-00	1		283
Art.1670	530710-00	1		283
Art.1673	530696-00	6		292
Art.1673	530697-00	6		292
Art.1675	530672-00	1		293
Art.1676	530683-00	1		293
Art.1685	530407-73	1		289
Art.1685	530407-00			289
Art.1686	530417-73	1		289
Art.1686	530417-00			289
Art.1687	530427-73	1		289
Art.1687	530427-00			289
Art.1688	530437-00			289
Art.1688	530437-73			289
Art.1689	530540-00	1		521
Art.1700	412960-00	1	350	162
Art.1700	412960-39	1		162
Art.1700	412962-00	1	350	162
Art.1700	412962-19	1	350	162
Art.1700	412962-39	1		162
Art.1700	412963-00	1	350	162
Art.1700	412963-39	1	350	162
Art.1700	412964-00	1	350	162
Art.1700	412964-19	1	350	162
Art.1700	412964-39	1	350	162
Art.1701	412970-00	1	350	163
Art.1701	412971-00	1	350	163
Art.1702	412975-00	1	350	163
Art.1702	412976-00	1	350	163
Art.1703	412980-00	1	350	163
Art.1703	412981-00	1	350	163
Art.1707	423252-00	1	6	361
Art.1707	423252-39	1	6	361
Art.1707	423253-00	1	6	361
Art.1707	423253-39	1	6	361
Art.1708	423255-00	1	6	361
Art.1708	423256-00	1	6	361
Art.1710	413000-00	1	114	164
Art.1710	413000-73	1		164
Art.1710	413001-00	1	114	164
Art.1710	413001-73	1		164
Art.1710	413002-00	1	114	164
Art.1710	413002-73	1		164
Art.1710	413003-00	1	114	164
Art.1710	413003-73	1		164
Art.1710	413050-00	1	114	164
Art.1710	413050-73	1		164
Art.1710	413051-00	1	114	164
Art.1710	413051-73	1		164
Art.1710	413052-00	1	114	164
Art.1710	413053-00	1	114	164
Art.1710	413054-00	1	114	164
Art.1710	413054-73	1		164
Art.1710	413055-00	1	114	164
Art.1710	413056-00	1	114	164
Art.1710	413056-73	1		164
Art.1710	413057-00	1	114	164
Art.1711	413010-00	1	114	165
Art.1711	413011-00	1	114	165
Art.1711	413012-00	1	114	165
Art.1712	413020-00	1	114	165
Art.1712	413021-00	1	114	165
Art.1712	413022-00	1	114	165

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Art.1713	413030-00	1	93	167	Art.1779	423555-00	1	60	262	Art.1788	330082-00	1	36	146
Art.1713	413031-00	1	93	167	Art.1781	423280-00	1	8	337	Art.1788	330082-07	1		146
Art.1714	413040-00	1	93	167	Art.1781	423280-39	1	8	337	Art.1788	330082-0041	1		146
Art.1714	413041-00	1	93	167	Art.1781	423281-00	1	8	337	Art.1788	330083-00	1	40	146
Art.1715	413060-00	1	93	166	Art.1781	423281-39	1	8	337	Art.1788	330083-07	1		146
Art.1715	413060-73	1		166	Art.1782	320000-00	1	28	202	Art.1788	330083-0041	1		146
Art.1715	413061-00	1	93	166	Art.1782	320001-00	1	28	202	Art.1788	330084-00	1	40	146
Art.1715	413061-73	1		166	Art.1782	320002-00	1	28	202	Art.1788	330084-07	1		146
Art.1715	413062-00	1	93	166	Art.1782	320003-00	1	20	202	Art.1788	330084-0041	1		146
Art.1715	413063-00	1	93	166	Art.1782	320004-00	1	20	202	Art.1788	330085-00	1	36	146
Art.1715	413064-00	1	93	166	Art.1782	320005-00	1	20	202	Art.1788	330085-07	1		146
Art.1715	413065-00	1	93	166	Art.1783	320010-00	1	28	202	Art.1788	330085-0041	1		146
Art.1723	413070-00	1	56	168	Art.1783	320011-00	1	28	202	Art.1788	330086-00	1	40	146
Art.1723	413071-00	1	56	168	Art.1783	320012-00	1	20	202	Art.1788	330086-07	1		146
Art.1723	413074-00	1	56	168	Art.1783	320014-00	1	20	202	Art.1788	330086-0041	1		146
Art.1723	413075-00	1	56	168	Art.1783	320015-00	1	20	202	Art.1788	330087-00	1	40	146
Art.1724	413080-00	1	56	168	Art.1784	330060-00	1	40	363	Art.1788	330087-07	1		146
Art.1724	413081-00	1	56	168	Art.1784	330062-00	1	40	363	Art.1788	330087-0041	1		146
Art.1724	413084-00	1	56	168	Art.1784	330064-00	1	40	363	Art.1789	330088-00	1	40	145
Art.1724	413085-00	1	56	168	Art.1784	330065-00	1	40	363	Art.1789	330088-07	1		145
Art.1725	413090-00	1	56	169	Art.1784	330066-00	1	40	363	Art.1789	330089-00	1	40	145
Art.1725	413091-00	1	56	169	Art.1784	330067-00	1	40	363	Art.1789	330089-07	1		145
Art.1725	413094-00	1	56	169	Art.1785	330050-00	1	28	203	Art.1789	330090-00	1	40	145
Art.1725	413095-00	1	56	169	Art.1785	330051-00	1	20	203	Art.1789	330090-07	1		145
Art.1727	413150-00	1	56	170	Art.1785	330052-00	1	28	203	Art.1789	330090-0041	1		145
Art.1727	413150-73	1		170	Art.1785	330053-00	1	20	203	Art.1789	330091-00	1	40	145
Art.1727	413152-00	1	56	170	Art.1785	330054-00	1	28	203	Art.1789	330091-07	1		145
Art.1727	413152-73	1		170	Art.1785	330055-00	1	28	203	Art.1789	330091-0041	1		145
Art.1728	413160-00	1	56	170	Art.1785	330056-00	1	18	203	Art.1789	330092-00	1	36	145
Art.1728	413160-73	1		170	Art.1785	330057-00	1	18	203	Art.1789	330092-07	1		145
Art.1728	413162-00	1	56	170	Art.1785	330058-00	1	28	203	Art.1789	330092-0041	1		145
Art.1728	413162-73	1		170	Art.1785	330059-00	1	28	203	Art.1789	330093-00	1	40	145
Art.1729	413170-00	1	56	169	Art.1786	423270-00	1	8	337	Art.1789	330093-07	1		145
Art.1729	413171-00	1	56	169	Art.1786	423270-39	1		337	Art.1789	330093-0041	1		145
Art.1729	413174-00	1	56	169	Art.1786	423271-00	1	8	337	Art.1789	330094-00	1	40	145
Art.1729	413175-00	1	56	169	Art.1786	423271-39	1	8	337	Art.1789	330094-07	1		145
Art.1736	511120-00	1	75	243	Art.1786	423274-00	1	8	337	Art.1789	330094-0041	1		145
Art.1736	511121-00	1	75	243	Art.1786	423274-39	1	8	337	Art.1789	330095-00	1	36	145
Art.1737	511123-00	1	50	243	Art.1786	423277-00	1	8	337	Art.1789	330095-07	1		145
Art.1737	511124-00	1	50	243	Art.1786	423277-39	1	8	337	Art.1789	330095-0041	1		145
Art.1738	413180-00	1	56	171	Art.1786	423278-00	1	8	337	Art.1789	330096-00	1	40	145
Art.1738	413181-00	1	56	171	Art.1786	423278-39	1	8	337	Art.1789	330096-07	1		145
Art.1739	413190-00	1	56	171	Art.1786	423279-00	1	8	337	Art.1789	330096-0041	1		145
Art.1739	413191-00	1	56	171	Art.1786	423279-39	1	8	337	Art.1789	330097-00	1	40	145
Art.1739	413192-00	1	56	171	Art.1787	330070-00	1	28	204	Art.1789	330097-07	1		145
Art.1739	413193-00	1	56	171	Art.1787	330071-00	1	20	204	Art.1789	330097-0041	1		145
Art.1748	414252-00	1	112	299	Art.1787	330072-00	1	28	204	Art.1789	330290-00	1		151
Art.1748	414254-00	1	112	299	Art.1787	330073-00	1	20	204	Art.1789	330291-00	1		151
Art.1748	414258-00	1	56	299	Art.1787	330074-00	1	28	204	Art.1789	330293-00	1		151
Art.1748	414259-00	1	56	299	Art.1787	330075-00	1	28	204	Art.1789	330294-00	1		151
Art.1756	423065-00	1	30	435	Art.1787	330076-00	1	20	204	Art.1789	330296-00	1		151
Art.1756	423065-39	1	30	435	Art.1787	330077-00	1	20	204	Art.1789	330297-00	1		151
Art.1756	423066-00	1	30	435	Art.1787	330078-00	1	28	204	Art.1794	330120-00	1	28	205
Art.1756	423066-39	1	30	435	Art.1787	330079-00	1	28	204	Art.1794	330121-00	1	20	205
Art.1768	414242-00	1	160	237	Art.1787	330181-00	1		207	Art.1794	330122-00	1	28	205
Art.1768	414243-00	1	80	237	Art.1787	330182-00	1		207	Art.1794	330123-00	1	20	205
Art.1768	414244-00	1	80	237	Art.1787	330183-00	1		207	Art.1794	330124-00	1	28	205
Art.1769	414262-00	1	160	237	Art.1787	330184-00	1		207	Art.1794	330125-00	1	28	205
Art.1769	414263-00	1	80	237	Art.1787	330185-00	1		207	Art.1794	330126-00	1	14	205
Art.1769	414264-00	1	80	237	Art.1787	330186-00	1		207	Art.1794	330127-00	1	14	205
Art.1774	424241-00	1	84	256	Art.1787	330188-00	1		207	Art.1794	330128-00	1	28	205
Art.1774	424241-39	1	84	256	Art.1787	330189-00	1		207	Art.1794	330129-00	1	28	205
Art.1774	424242-00	1	84	256	Art.1788	330080-00	1	40	146	Art.1796	510620-00	1	60	252
Art.1774	424242-39	1	84	256	Art.1788	330080-07	1		146	Art.1796	510620-39	1	60	252
Art.1775	414236-00	1	160	237	Art.1788	330080-0041	1		146	Art.1797	510630-00	1	30	252
Art.1775	414237-00	1	80	237	Art.1788	330081-00	1	40	146	Art.1797	510630-39	1	30	252
Art.1775	414238-00	1	80	237	Art.1788	330081-07	1		146	Art.1797	510631-00	1	30	252
Art.1777	423547-00	1	60	262	Art.1788	330081-0041	1		146	Art.1797	510631-39	1	30	252

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Art.1798	511025-00	1	16	253
Art.1798	511025-39	1	16	253
Art.1799	511015-00	1	32	253
Art.1799	511015-39	1	32	253
Art.1822	530420-00	1		301
Art.1823	530425-00	1		301
Art.1836	414260-00	1	112	299
Art.1836	414261-00	1	56	299
Art.1836	414268-00	1	56	299
Art.1836	414280-00	1	112	299
Art.1836	414281-00	1	56	299
Art.1836	414282-00	1	56	299
Art.1840	511430-00	1	12	255
Art.1840	511432-00	1	12	255
Art.1840	511433-00	1	12	255
Art.1840	511435-00	1	4	255
Art.1840	511436-00	1	4	255
Art.1840	511437-00	1	4	255
Art.1841	511440-00	1	27	255
Art.1841	511441-00	1	27	255
Art.1841	511442-00	1	27	255
Art.1844	427249-00	1	96	52
Art.1844	427249-19	1		52
Art.1844	427249-39	1	96	52
Art.1845	427445-00	1	80	54
Art.1845	427445-07	1		54
Art.1847	427542-00	1		54
Art.1848	427552-00	1		54
Art.1848	427552-09	1		54
Art.1849	511443-00	1	4	255
Art.1849	511444-00	1	4	255
Art.1849	511445-00	1	4	255
Art.1866	511142-00	1	168	246
Art.1866	511142-39	1	168	246
Art.1867	511152-00	1	84	246
Art.1867	511152-39	1	84	246
Art.1868	511182-00	1	168	248
Art.1868	511182-39	1	168	248
Art.1869	511192-00	1	84	248
Art.1869	511192-39	1	84	248
Art.1871	511165-00	1	147	246
Art.1871	511165-39	1	147	246
Art.1871	511166-00	1	147	246
Art.1871	511166-39	1	147	246
Art.1871	530790-00	1		523
Art.1872	530791-00	1		286
Art.1872	530792-00	1		286
Art.1872	530793-00	1		286
Art.1873	511160-00	1	294	246
Art.1873	511160-39	1	294	246
Art.1873	511161-00	1	294	246
Art.1873	511161-39	1	294	246
Art.1874	511140-00	1	168	247
Art.1874	511140-39	1	168	247
Art.1875	511150-00	1	84	247
Art.1875	511150-39	1	84	247
Art.1876	511155-00	1	42	247
Art.1876	511155-39	1	42	247
Art.1877	511170-00	1	294	248
Art.1877	511170-39	1	294	248
Art.1877	511171-00	1	294	248
Art.1877	511171-39	1	294	248
Art.1878	511180-00	1	168	249
Art.1878	511180-39	1	168	249
Art.1879	511190-00	1	84	249
Art.1879	511190-39	1	84	249
Art.1880	511195-00	1	42	249

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Art.1880	511195-39	1	42	249
Art.1881	511141-00	1	168	247
Art.1881	511141-39	1	168	247
Art.1882	511175-00	1	147	248
Art.1882	511175-39	1	147	248
Art.1882	511176-00	1	147	248
Art.1882	511176-39	1	147	248
Art.1883	530785-00	1	24	287
Art.1883	530785-73	1		287
Art.1883	530786-00	1	24	287
Art.1885	414750-00	1	36	190
Art.1886	414760-00	1	36	191
Art.1887	414752-00	1	36	187
Art.1887	414753-00	1	36	187
Art.1887	414754-00	1	36	187
Art.1887	414755-00	1	36	187
Art.1887	414756-00	1	36	187
Art.1887	414757-00	1	36	187
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Art.1887	414759-00	1	36	187
Art.1887	414761-00	1	36	187
Art.1887	414762-00	1	36	187
Art.1888	414764-00	1	36	188
Art.1888	414765-00	1	36	188
Art.1888	414766-00	1	36	188
Art.1888	414767-00	1	36	188
Art.1888	414768-00	1	36	188
Art.1888	414769-00	1	36	188
Art.1889	414780-00	1	36	191
Art.1890	414790-00	1	36	183
Art.1890	414791-00	1	36	183
Art.1890	414794-00	1	36	183
Art.1890	414795-00	1	36	183
Art.1891	414784-00	1	36	189
Art.1891	414785-00	1	36	189
Art.1891	414786-00	1	36	189
Art.1891	414787-00	1	36	189
Art.1891	414788-00	1	36	189
Art.1891	414789-00	1	36	189
Art.1892	414770-00	1	36	192
Art.1892	414770-30	1		192
Art.1893	414772-00	1	36	193
Art.1893	414772-30	1		193
Art.1894	414773-00	1	36	193
Art.1894	414773-30	1		193
Art.1895	414830-00	1	36	518
Art.1897	414820-00	1	36	184
Art.1897	414820-39	1	36	184
Art.1897	414821-00	1	36	184
Art.1897	414821-39	1	36	184
Art.1897	414822-00	1	36	184
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Art.1897	414823-00	1	36	184
Art.1897	414825-00	1	36	184
Art.1897	414825-39	1	36	184
Art.1897	414826-00	1	36	184
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Art.1898	414920-39	1	36	185
Art.1898	414921-00	1	36	185
Art.1898	414921-39	1	36	185
Art.1898	414922-00	1	36	185
Art.1898	414922-39	1	36	185
Art.1898	414923-00	1	36	185
Art.1898	414925-00	1	36	185
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Art.1898	414927-00	1	36	185
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Art.1904	124340-39	1	28	129
Art.1904	124341-00	1	32	129
Art.1904	124342-00	1	32	129
Acc.1911	994641-00	4		128
Acc.1914	994637-00	20		128
Acc.1916	994646-00	10		128
Acc.1919	994638-00	12		128
Acc.1924	994636-00	20		128
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Art.1980	414860-39	1	308	174
Art.1980	414861-00	1	308	174
Art.1980	414861-39	1	308	174
Art.1980	414862-00	1	308	174
Art.1980	414862-39	1	308	174
Art.1980	414863-19	1		174
Art.1980	414864-19	1		174
Art.1980	414865-00	1	308	174
Art.1980	414865-39	1	308	174
Art.1980	414866-00	1	308	174
Art.1980	414866-39	1	308	174
Art.1980	414867-00	1	308	174
Art.1980	414867-19	1		174
Art.1980	414867-39	1	308	174
Art.1982	414870-00	1	308	175
Art.1982	414871-00	1	308	175
Art.1982	414872-00	1	308	175
Art.1983	414880-00	1	308	175
Art.1983	414881-00	1	308	175
Art.1983	414882-00	1	308	175
Art.1984	414890-00	1	308	175
Art.1984	414891-00	1	308	175
Art.1984	414892-00	1	308	175
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Art.1987	414911-00	1	90	179
Art.1988	414930-00	1	90	178
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Art.1998	414851-00	1	90	177
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Art.1999	414840-00	1	90	177
Art.1999	414840-39	1	90	177
Art.1999	414841-00	1	90	177
Art.1999	414841-39	1	90	177
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Art.2152	413320-00	1	32	211
Art.2152	413321-00	1	32	211
Art.2152	413322-00	1	32	211
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Art.2153	413330-00	1	16	211	Art.2167	413463-00	1	88	102	Art.2193	412682-00	1		227
Art.2153	413331-00	1	16	211	Art.2177	412698-00	1	20	217	Art.2194	412766-00	1		224
Art.2153	413332-00	1	16	211	Art.2178	412900-00	1	20	155	Art.2194	412766-0034			224
Art.2153	413333-00	1	16	211	Art.2178	412901-00	1	20	155	Art.2194	412766-0035			224
Art.2153	413334-00	1	16	211	Art.2178	412902-00	1	20	155	Art.2194	412766-60			224
Art.2153	413335-00	1	16	211	Art.2179	412910-00	1	20	155	Art.2194	412767-00	1		224
Art.2155	413390-00	1	32	212	Art.2179	412911-00	1	20	155	Art.2194	412767-0034			224
Art.2155	413391-00	1	25	212	Art.2179	412912-00	1	20	155	Art.2194	412767-0035			224
Art.2156	413360-00	1	10	212	Art.2180	412600-00	1	20	220	Art.2194	412767-60			224
Art.2157	413370-00	1	32	213	Art.2180	412601-00	1	20	220	Art.2194	412768-00	1		224
Art.2157	413371-00	1	32	213	Art.2180	412602-00	1	20	220	Art.2195	412760-00	1		224
Art.2157	413372-00	1	32	213	Art.2181	412610-00	1	20	220	Art.2195	412760-0034	1		224
Art.2157	413373-00	1	25	213	Art.2181	412611-00	1	20	220	Art.2195	412760-0035			224
Art.2157	413374-00	1	25	213	Art.2181	412612-00	1	20	220	Art.2195	412760-60			224
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Art.2158	413480-00	1	10	213	Art.2182	412621-00	1	20	221	Art.2195	412763-0034	1		224
Art.2158	413481-00	1	10	213	Art.2182	412622-00	1	20	221	Art.2195	412763-0035	1		224
Art.2158	413482-00	1	10	213	Art.2183	412630-00	1	20	221	Art.2195	412763-60	1		224
Art.2161	413400-00	1	110	101	Art.2183	412631-00	1	20	221	Art.2195	412765-00	1		224
Art.2161	413400-07	1		101	Art.2183	412632-00	1	20	221	Art.2196	412770-00	1		225
Art.2161	413401-00	1	110	101	Art.2184	412653-00	1	20	218	Art.2196	412770-0034	1		225
Art.2161	413401-07	1		101	Art.2184	412654-00	1	20	218	Art.2196	412770-0035			225
Art.2161	413402-00	1	88	101	Art.2184	412655-00	1	20	218	Art.2196	412770-60			225
Art.2161	413402-07	1		101	Art.2185	412650-00	1	20	218	Art.2196	412771-00	1		225
Art.2161	413403-00	1	88	101	Art.2185	412651-00	1	20	218	Art.2196	412771-0034			225
Art.2161	413403-07	1		101	Art.2185	412652-00	1	20	218	Art.2196	412771-0035			225
Art.2162	413410-00	1	110	100	Art.2186	412661-00	1	20	219	Art.2196	412771-60			225
Art.2162	413410-07	1		100	Art.2186	412662-00	1	20	219	Art.2196	412772-00	1		225
Art.2162	413411-00	1	110	100	Art.2187	412671-00	1	20	219	Art.2197	412780-00	1		225
Art.2162	413411-07	1		100	Art.2187	412672-00	1	20	219	Art.2197	412780-0034			225
Art.2162	413412-00	1	88	100	Art.2188	412690-00	1	20	216	Art.2197	412780-0035			225
Art.2162	413412-07	1		100	Art.2189	412695-00	1	20	217	Art.2197	412780-60			225
Art.2162	413413-00	1	88	100	Art.2191	412750-00	1		226	Art.2197	412781-00	1		225
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Art.2163	413420-00	1	110	103	Art.2191	412750-0035			226	Art.2197	412781-0035	1		225
Art.2163	413420-07	1		103	Art.2191	412750-60			226	Art.2197	412781-60			225
Art.2163	413421-00	1	110	103	Art.2191	412751-00	1		226	Art.2197	412782-00	1		225
Art.2163	413421-07	1		103	Art.2191	412751-0034			226	Art.2198	412691-00	1		222
Art.2163	413422-00	1	88	103	Art.2191	412751-0035			226	Art.2199	412696-00	1		223
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Art.2163	413423-07	1		103	Art.2192	412790-00	1		227	Acc.2291	143998-00	5		47
Art.2164	413430-00	1	110	103	Art.2192	412790-0034			227	Acc.2292	143999-00	10		47
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Art.2164	413431-00	1	110	103	Art.2192	412790-60			227	Acc.2514	993919-00	10		47
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Art.2165	413440-00	1	110	101	Art.2192	412890-00	1		226	Art.2537	431880-0041	1		268
Art.2165	413440-07	1		101	Art.2192	412890-0034			226	Art.2537	431882-00	1	150	268
Art.2165	413441-00	1	110	101	Art.2192	412890-0035	1		226	Art.2537	431882-0041	1		268
Art.2165	413441-07	1		101	Art.2192	412890-60			226	Art.2537	431883-00	1	150	268
Art.2165	413442-00	1	88	101	Art.2192	412891-00	1		226	Art.2537	431883-0041	1		268
Art.2165	413442-07	1		101	Art.2192	412891-0034			226	Art.2537	431884-00	1	150	268
Art.2165	413443-00	1	88	101	Art.2192	412891-0035	1		226	Art.2537	431884-0041	1		268
Art.2165	413443-07	1		101	Art.2192	412891-60			226	Art.2537	431885-00	1	150	268
Art.2166	413450-00	1	110	100	Art.2192	412892-00	1		226	Art.2537	431885-0041	1		268
Art.2166	413450-07	1		100	Art.2193	412680-00	1		227	Art.2537	431886-00	1	150	268
Art.2166	413451-00	1	110	100	Art.2193	412680-0034			227	Art.2537	431886-0041	1		268
Art.2166	413451-07	1		100	Art.2193	412680-0035			227	Art.2564	422500-00	1	108	272
Art.2166	413452-00	1	88	100	Art.2193	412680-60			227	Art.2564	422501-00	1	108	272
Art.2166	413452-07	1		100	Art.2193	412681-00	1		227	Art.2564	422502-00	1	108	272
Art.2166	413453-00	1	88	100	Art.2193	412681-0034			227	Art.2564	422503-00	1	108	272
Art.2166	413453-07	1		100	Art.2193	412681-0035			227	Art.2564	422504-00	1	108	272

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Art.2567	422549-00	1	108	273
Art.2567	422549-0041			273
Art.2567	422550-00	1	108	273
Art.2567	422550-0041	1		273
Art.2567	422551-00	1	108	273
Art.2567	422551-0041	1		273
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Art.2569	422573-00	1	108	275
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Art. 2785	330151-00	1	40	145
Art. 2785	330151-07	1		145
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Art.2785	330152-00	1	36	145
Art.2785	330152-07	1		145
Art. 2785	330152-0041	1		145
Art. 2785	330153-00	1	40	145
Art. 2785	330153-07	1		145
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Art. 2785	330154-00	1	40	145
Art. 2785	330154-07	1		145
Art. 2785	330154-0041	1		145
Art.2785	330155-00	1	36	145
Art.2785	330155-07	1		145
Art. 2785	330155-0041	1		145
Art. 2785	330156-00	1	40	145
Art. 2785	330156-07	1		145
Art. 2785	330156-0041	1		145
Art. 2785	330157-00	1	40	145
Art. 2785	330157-07	1		145
Art. 2785	330157-0041	1		145
Art.2786	330160-00	1	40	144
Art.2786	330160-07	1		144
Art.2786	330160-0041	1		144
Art.2786	330161-00	1	40	144
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Art.2789	330145-0041	1		146
Art.2789	330146-00	1	36	146
Art.2789	330146-07	1		146
Art.2789	330146-0041	1		146
Art.2789	330147-00	1	40	146
Art.2789	330147-07	1		146
Art.2789	330147-0041	1		146
Art.2790	330137-00	1	40	141
Art.2790	330137-07	1		141
Art.2790	330138-00	1	40	141
Art.2790	330138-07	1		141
Art.2790	330139-00	1	36	141
Art.2790	330139-07	1		141
Art.2790	330149-00	1	36	141
Art.2790	330149-07	1		141
Art.2791	330280-00	1	40	149
Art.2791	330281-00	1	40	149
Art.2791	330282-00	1	40	149
Art.2792	330266-00	1	40	140
Art.2792	330266-07	1	40	140

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Art.2792	330267-07	1	40	140	Art.3146	326791-00	1	6	364	Art.3262	330324-00	1	24	239
Art.2792	330268-00	1	36	140	Art.3146	326791-39	1	6	364	Art.3263	330326-00	1	24	239
Art.2792	330268-07	1	36	140	Art.3192	412830-00	1		235	Art.3263	330327-00	1	24	239
Art.2793	330190-00	1	40	149	Art.3192	412830-0034	1		235	Art.3264	330333-00	1	24	239
Art.2793	330191-00	1	40	149	Art.3192	412831-00	1		235	Art.3264	330334-00	1	24	239
Art.2793	330192-00	1	40	149	Art.3192	412831-0034			235	Art.3269	330460-00	1	30	409
Art.2882	330730-00	1	36	133	Art.3192	412832-00	1		235	Art.3269	330460-39	1	30	409
Art.2882	330730-07	1		133	Art.3192	412832-0034			235	Art.3269	330461-00	1	30	409
Art.2882	330731-00	1	36	133	Art.3194	412822-00	1		232	Art.3269	330461-39	1	30	409
Art.2882	330731-07	1		133	Art.3194	412822-0034			232	Art.3269	330463-00	1	30	409
Art.2882	330732-00	1	36	133	Art.3194	412824-00	1		232	Art.3269	330463-39	1	30	409
Art.2882	330732-07	1		133	Art.3194	412824-0034			232	Art.3270	330342-00	1	15	417
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Art.2883	330740-07	1		133	Art.3195	412820-0034	1		232	Art.3270	330342-39	1	15	417
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Art.2884	330760-07	1		136	Art.3196	412801-0034			233	Art.3270	330348-39	1	15	417
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Art.2885	330754-07	1		135	Art.3202	326923-3028			342	Art.3276	330371-00	1	30	411
Art.2885	330755-00	1	72	135	Art.3202	326923-3073			342	Art.3276	330372-00	1	30	411
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Art.2885	330757-00	1	36	134	Art.3209	327220-39	1	6	343	Art.3277	330381-39	1	30	408
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Art.2885	330758-07	1		135	Art.3214	326985-00	1	6	344	Art.3278	330390-00	1	30	409
Art.2885	330759-00	1	36	135	Art.3216	327210-00	1	6	340	Art.3278	330390-39	1	30	409
Art.2885	330759-07	1		135	Art.3216	327210-39	1	6	340	Art.3278	330391-00	1	30	409
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Art.2888	330743-07	1		133	Art.3222	326922-39	1	6	343	Art.3278	330393-00	1	30	409
Art.2888	330744-00	1	36	133	Art.3230	412840-00	1		234	Art.3278	330393-39	1	30	409
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Art.2888	330745-00	1	36	133	Art.3230	412841-00	1		234	Art.3279	330450-39	1	30	411
Art.2888	330745-07	1		133	Art.3230	412841-0034			234	Art.3279	330451-00	1	30	411
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Art.2889	330871-00	1	30	199	Art.3230	412842-0034	1		234	Art.3279	330453-00	1	30	411
Art.2889	330872-00	1	30	199	Art.3231	412870-00	1		234	Art.3279	330453-39	1	30	411
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Art.3116	322928-00	1	21	157	Art.3232	412880-00	1		235	Art.3281	330412-00	1	42	425
Art.3116	322929-00	1	21	157	Art.3232	412880-0034			235	Art.3281	330412-39	1	42	425
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Art.3117	323129-00	1	21	157	Art.3232	412881-0034			235	Art.3282	330401-00	1	42	425
Art.3142	326785-00	1	6	365	Art.3232	412882-00	1		235	Art.3282	330401-39	1	42	425
Art.3143	326786-00	1	6	365	Art.3232	412882-0034			235	Art.3282	330402-00	1	42	425
Art.3143	326786-73	1		365	Art.3260	330303-00	1	24	239	Art.3282	330402-39	1	42	425
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Art.3283	330431-00	1	42	423
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Art.3285	340102-00	1	42	421
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Art.3285	340103-00	1	42	421
Art.3285	340103-39	1	42	421
Art.3286	340110-00	1	42	421
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Art.3290	330600-39	1	22	395
Art.3290	330601-00	1	22	395
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Art.3292	330666-00	1	22	396

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Art.3296	330906-00	1	22	394
Art.3296	330907-00	1	22	394
Art.3297	330910-00	1	22	394
Art.3297	330911-00	1	22	394
Art.3298	330915-00	1	22	394
Art.3298	330916-00	1	22	394
Art.3302	326923-39	1	6	342
Art.3326	327202-00	1	6	341
Art.3326	327202-39	1	6	341
Art.3331	330040-00	1	12	331
Art.3331	330041-00	1	12	331
Art.3331	330042-00	1	12	331
Art.3331	330043-00	1	12	331
Art.3331	330044-00	1	12	331
Art.3331	330045-00	1	12	331
Art.3333	330030-00	1	12	153
Art.3333	330031-00	1	12	153
Art.3333	330032-00	1	12	153
Art.3334	330110-00	1	9	331
Art.3334	330111-00	1	9	331
Art.3334	330112-00	1	9	331
Art.3334	330113-00	1	9	331
Art.3334	330114-00	1	9	331
Art.3334	330115-00	1	9	331
Art.3335	330033-00	1	12	153
Art.3335	330034-00	1	12	153
Art.3335	330035-00	1	12	153
Art.3336	328200-00	1	12	334
Art.3336	328200-39	1	12	334

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Art.3336	328201-39	1	12	334
Art.3337	328210-00	1	18	335, 433
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Art.3337	328211-00	1	18	335, 433
Art.3337	328211-39	1	18	335, 433
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Art.3340	330211-00	1	2	327
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Art.3345	330264-39	1	2	326
Art.3345	330264-73	1		326
Art.3345	330264-3028			326
Art.3345	330264-3073			326
Art.3345	330265-00	1	2	326
Art.3345	330265-30			326
Art.3345	330265-39	1	2	326
Art.3345	330265-73	1		326
Art.3345	330265-3028	1		326
Art.3345	330265-3073			326
Art.3350	330510-00	1	12	323
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Art.3350	330512-00	1	12	323
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Art.3350	330513-39	1	12	323
Art.3350	330517-00	1	12	323
Art.3350	330517-39	1	12	323
Art.3350	330518-00	1	12	323
Art.3350	330518-39	1	12	323
Art.3350	330519-00	1	12	323
Art.3350	330519-39	1	12	323

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Art.3351	330521-00	1	12	320	Art.3381	340514-00	1		429	Art.3392	330866-00	1	15	401
Art.3351	330521-39	1	12	320	Art.3381	340514-39	1		429	Art.3392	330866-39	1	15	401
Art.3352	330530-00	1	12	321	Art.3381	340515-00	1		429	Art.3393	330880-00	1	15	401
Art.3352	330530-39	1	12	321	Art.3381	340515-39	1		429	Art.3393	330880-39	1	15	401
Art.3352	330531-00	1	12	321	Art.3382	340520-00	1		429	Art.3393	330881-00	1	15	401
Art.3352	330531-39	1	12	321	Art.3382	340520-39	1		429	Art.3393	330881-39	1	15	401
Art.3353	330540-00	1	12	321	Art.3382	340521-00	1		429	Art.3393	330882-00	1	15	401
Art.3353	330540-39	1	12	321	Art.3382	340521-39	1		429	Art.3393	330882-39	1	15	401
Art.3353	330541-00	1	12	321	Art.3382	340522-00	1		429	Art.3393	330884-00	1	15	401
Art.3353	330541-39	1	12	321	Art.3382	340522-39	1		429	Art.3393	330884-39	1	15	401
Art.3355	330550-00	1	12	322	Art.3382	340523-00	1		429	Art.3393	330885-00	1	15	401
Art.3355	330550-39	1	12	322	Art.3382	340523-39	1		429	Art.3393	330885-39	1	15	401
Art.3355	330551-00	1	12	322	Art.3382	340524-00	1		429	Art.3393	330886-00	1	15	401
Art.3355	330551-39	1	12	322	Art.3382	340524-39	1		429	Art.3393	330886-39	1	15	401
Art.3360	330560-00	1	12	313	Art.3382	340525-00	1		429	Art.3395	330820-00	1	15	400
Art.3360	330560-39	1	12	313	Art.3382	340525-39	1		429	Art.3395	330820-39	1	15	400
Art.3361	330570-00	1	12	312	Art.3383	340552-00	1	12	316	Art.3395	330821-00	1	15	400
Art.3361	330570-39	1	12	312	Art.3383	340552-39	1	12	316	Art.3395	330821-39	1	15	400
Art.3361	330571-00	1	12	312	Art.3383	340553-00	1	12	316	Art.3395	330822-00	1	15	400
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Art.3370	340250-00	1	15	415	Art.3385	340570-00	1	12	317	Art.3395	330826-00	1	15	400
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Art.3370	340251-39	1	15	415	Art.3385	340571-39	1	12	317	Art.3396	330831-00	1	15	398
Art.3370	340252-00	1	15	415	Art.3385	340572-00	1	12	317	Art.3396	330832-00	1	15	398
Art.3370	340252-39	1	15	415	Art.3385	340572-39	1	12	317	Art.3396	330833-00	1	15	398
Art.3374	340260-00	1	15	415	Art.3386	340580-00	1	12	317	Art.3396	330834-00	1	15	398
Art.3374	340260-39	1	15	415	Art.3386	340580-39	1	12	317	Art.3396	330835-00	1	15	398
Art.3374	340261-00	1	15	415	Art.3386	340581-00	1	12	317	Art.3472	341020-00	1	18	387
Art.3374	340261-39	1	15	415	Art.3386	340581-39	1	12	317	Art.3472	341020-39			387
Art.3374	340262-00	1	15	415	Art.3390	330800-00	1	15	399	Art.3472	341021-00	1	18	387
Art.3374	340262-39	1	15	415	Art.3390	330800-39	1	15	399	Art.3472	341021-39			387
Art.3375	340200-00	1	30	407	Art.3390	330801-00	1	15	399	Art.3472	341022-00	1	18	387
Art.3375	340200-39	1	30	407	Art.3390	330801-39	1	15	399	Art.3472	341022-39			387
Art.3375	340201-00	1	30	407	Art.3390	330802-00	1	15	399	Art.3472	341023-00	1	18	387
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Art.3375	340202-39	1	30	407	Art.3390	330803-39	1	15	399	Art.3473	341030-39			386
Art.3376	340210-00	1	30	407	Art.3390	330804-00	1	15	399	Art.3473	341031-00	1	18	386
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Art.3376	340211-00	1	30	407	Art.3390	330805-00	1	15	399	Art.3473	341032-00	1	18	386
Art.3376	340211-39	1	30	407	Art.3390	330805-39	1	15	399	Art.3473	341032-39			386
Art.3376	340212-00	1	30	407	Art.3391	330810-00	1	15	399	Art.3473	341033-00	1	18	386
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Art.3380	340500-00	1		428	Art.3391	330811-00	1	15	399	Art.3474	341110-00	1	18	387
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Art.3380	340501-00	1		428	Art.3391	330812-00	1	15	399	Art.3474	341111-00	1	18	387
Art.3380	340501-39	1		428	Art.3391	330812-39	1	15	399	Art.3474	341111-39			387
Art.3380	340502-00	1		428	Art.3391	330813-00	1	15	399	Art.3474	341112-00	1	18	387
Art.3380	340502-39	1		428	Art.3391	330813-39	1	15	399	Art.3474	341112-39			387
Art.3380	340503-00	1		428	Art.3391	330814-00	1	15	399	Art.3474	341113-00	1	18	387
Art.3380	340503-39	1		428	Art.3391	330814-39	1	15	399	Art.3474	341113-39			387
Art.3380	340504-00	1		428	Art.3391	330815-00	1	15	399	Art.3475	331000-00	1	30	373
Art.3380	340504-39	1		428	Art.3391	330815-39	1	15	399	Art.3475	331000-39	1		373
Art.3380	340505-00	1		428	Art.3392	330860-00	1	15	401	Art.3475	331001-00	1	30	373
Art.3380	340505-39	1		428	Art.3392	330860-39	1	15	401	Art.3475	331001-39	1		373
Art.3381	340510-00	1		429	Art.3392	330861-00	1	15	401	Art.3475	331002-00	1	30	373
Art.3381	340510-39	1		429	Art.3392	330861-39	1	15	401	Art.3475	331002-39	1		373
Art.3381	340511-00	1		429	Art.3392	330862-00	1	15	401	Art.3476	331010-00	1	30	373
Art.3381	340511-39	1		429	Art.3392	330862-39	1	15	401	Art.3476	331010-39			373
Art.3381	340512-00	1		429	Art.3392	330864-00	1	15	401	Art.3476	331011-00	1	30	373
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Art.3476	331012-00	1	30	373
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Art.3477	331020-00	1	30	376
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Art.3477	331021-00	1	30	376
Art.3477	331021-39			376
Art.3477	331022-00	1	30	376
Art.3477	331022-39			376
Art.3478	331030-00	1	30	377
Art.3478	331030-39			377
Art.3478	331031-00	1	30	377
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Art.3479	331040-00	1	30	377
Art.3479	331040-39			377
Art.3479	331041-00	1	30	377
Art.3479	331041-39			377
Art.3479	331042-00	1	30	377
Art.3479	331042-39	1		377
Art.3480	331050-00	1	30	374
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Art.3480	331051-00	1	30	374
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Art.3480	331052-00	1	30	374
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Art.3481	331062-39	1		375
Art.3482	331070-00	1	30	375
Art.3482	331070-39			375
Art.3482	331071-00	1	30	375
Art.3482	331071-39	1		375
Art.3482	331072-00	1	30	375
Art.3482	331072-39			375
Art.3483	331050-44	1	30	380
Art.3483	331051-44	1	30	380
Art.3483	331052-44	1	30	380
Art.3484	331060-44	1	30	381
Art.3484	331061-44	1	30	381
Art.3484	331062-44	1	30	381
Art.3485	331070-44	1	30	381
Art.3485	331071-44	1	30	381
Art.3485	331072-44	1	30	381
Art.3486	331080-00	1	30	379
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Art.3486	331081-00	1	30	379
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Art.3487	331090-00	1	30	379
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Art.3487	331091-00	1	30	379
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Art.3487	331092-00	1	30	379
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Art.3490	341043-00	1	18	385
Art.3490	341043-39			385

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Art.3491	341053-39			385
Art.3492	341060-44	1	18	391
Art.3492	341061-44	1	18	391
Art.3492	341062-44	1	18	391
Art.3492	341063-44	1	18	391
Art.3493	341070-44	1	18	391
Art.3493	341071-44	1	18	391
Art.3493	341072-44	1	18	391
Art.3493	341073-44	1	18	391
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Art.3494	341003-00	1	18	390
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Art.3495	341011-39			386
Art.3495	341012-00	1	18	386
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Art.3495	341013-00	1	18	386
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Art.3496	341080-00	1	18	389
Art.3496	341080-39			389
Art.3497	341090-00	1	18	389
Art.3497	341090-39			389
Art.3580	424600-2168	1		352
Art.3580	424600-3968	1		352
Art.3580	424602-2168	1		352
Art.3580	424602-3968	1		352
Art.3581	424610-2168	1		352
Art.3581	424610-3968	1		352
Art.3581	424612-2168	1		352
Art.3581	424612-3968	1		352
Art.3582	424620-2168	1		353
Art.3582	424620-3968	1		353
Art.3582	424622-2168	1		353
Art.3582	424622-3968	1		353
Art.3583	424630-2168	1		353
Art.3583	424630-3968	1		353
Art.3583	424632-2168	1		353
Art.3583	424632-3968	1		353
Art.3584	424640-00	1	15	355
Art.3584	424640-39	1	15	355
Art.3584	424641-00	1	15	355
Art.3584	424641-39	1	15	355
Art.3585	424650-00	1	15	355
Art.3585	424650-39	1	15	355
Art.3585	424651-00	1	15	355
Art.3585	424651-39	1	15	355
Art.3590	424660-00	1	18	306
Art.3590	424660-30	1	18	308
Art.3590	424660-39	1	18	306
Art.3590	424660-3028			308
Art.3590	424661-00	1	18	306
Art.3590	424661-30	1	18	308
Art.3590	424661-39	1	18	306

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Art.3590	424661-3028			308
Art.3591	424670-00	1	18	307
Art.3591	424670-30	1	18	309
Art.3591	424670-39			307
Art.3591	424670-73	1	18	307
Art.3591	424670-3028			309
Art.3591	424670-7330			309
Art.3592	424680-00	1	18	307
Art.3592	424680-30	1	18	309
Art.3592	424680-39	1	18	307
Art.3592	424680-3028			309
Art.3592	424681-00	1	18	307
Art.3592	424681-30	1	18	309
Art.3592	424681-39	1	18	307
Art.3592	424681-3028			309
Acc.3875	145106-00	1		47
Acc.3875	145107-00	1		47
Art.3877	145170-00	1	52	47
Art.3877	145171-00	1	52	47
Art.3877	145172-00	1	52	47
Art.3877	145173-00	1	52	47
Art.3878	145180-00	1	52	47
Art.3878	145181-00	1	52	47
Art.3878	145182-00	1	52	47
Art.3878	145183-00	1	52	47
Acc.6000	132900-00	2	300	126
Acc.6000	132923-00	2	300	126
Art.6001	132960-00	2	150	120
Art.6001	132961-00	2	150	120
Art.6001	13296146011138	2		120
Art.6001	132965-00	2	150	120
Art.6001	132966-00	2	150	120
Art.6001	13296600010923	2		120
Art.6002	13296046000200	2		120
Art.6002	13296046002265	2		120
Art.6002	13296100002021	2		120
Art.6002	13296100002265	2		120
Art.6002	13296100002266	2		120
Art.6002	13296100002267	2		120
Art.6002	13296546000199	2		120
Art.6002	13296546002265	2		120
Art.6002	13296600002022	2		120
Art.6002	13296600002023	2		120
Art.6002	13296600002025	2		120
Art.6002	13296600002268	2		120
Art.6003	132970-00	2	150	120
Art.6003	132971-00	2	150	120
Art.6003	132972-00	2	150	120
Art.6003	132975-00	2	150	120
Art.6003	132976-00	2	150	120
Art.6003	132977-00	2	150	120
Acc.6005	132901-00	6	108	125
Acc.6010	132902-00	50	200	125
Acc.6011	132907-00	32		125
Acc.6015	132903-00	50		125
Acc.6020	132904-00	10		125
Acc.6025	132905-00	10		125
Acc.6036	132987-00	100	500	69, 72, 82
Acc.6045	132909-00	50		125
Acc.6050	132911-00	10		125
Acc.6051	132927-00	50		124
Acc.6052	132928-00	10		124
Acc.6053	132929-00	10		124
Acc.6070	132914-00	10		125
Art.6401	237531-69	1	180	533
Art.6401	238040-69	1	180	533
Art.6402	237521-00	2	96	127

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Art.6402	237522-00	2	48	127
Art.6402	237522-07	2		127
Art.6402	237523-00	2	48	127
Art.6402	237523-07	2		127
Acc.6405	237603-46	20		126
Acc.6405	237613-00	20	180	126
Acc.6405	237617-00	20	180	126
Acc.6405	237624-00	20	180	126
Acc.6405	237625-00	20	180	126
Acc.6411	237619-00	4		126
Acc.6411	237622-00	4		126
Acc.6411	237623-00	4		126
Acc.6412	237729-00	6	288	126
Acc.6412	237730-00	6	144	126
Acc.6412	237731-00	6	144	126
Acc.6413	237732-00	4		126
Acc.6413	237733-00	4		126
Acc.6413	237736-00	4		126
Acc.6414	237764-00	6		126
Acc.6414	237765-00	6		126
Acc.6414	237766-00	12		126
Art.6501	237536-69	1	180	533
Art.6501	238045-69	1	180	533
Art.6502	237541-00	2	96	127
Art.6502	237542-00	2	48	127
Art.6502	237542-07	2		127
Art.6502	237543-00	2	48	127
Art.6502	237543-07	2		127
Acc.6510	993914-00	50		124
Acc.6512	132930-00	1		124
Art.6600	133002-00	2	140	114
Art.6600	133002-07	2	140	114
Art.6600	133002-0041	2		114
Art.6600	133003-00	2	140	114
Art.6600	133003-07	2	140	114
Art.6600	133003-0041	2		114
Art.6601	133012-00	2	140	116
Art.6601	133012-07	2	140	116
Art.6601	133012-0041	2		116
Art.6601	133013-00	2	140	116
Art.6601	133013-07	2	140	116
Art.6601	133013-0041	2		116
Art.6602	133022-00	2	140	116
Art.6602	133022-07	2	140	116
Art.6602	133022-0041	2		116
Art.6602	133023-00	2	140	116
Art.6602	133023-07	2	140	116
Art.6602	133023-0041	2		116
Art.6603	133032-00	2	140	115
Art.6603	133032-07	2	140	115
Art.6603	133032-0041	2		115
Art.6603	133033-00	2	140	115
Art.6603	133033-07	2	140	115
Art.6603	133033-0041	2		115
Art.6604	133042-00	2	140	115
Art.6604	133042-07	2	140	115
Art.6604	133042-0041	2		115
Art.6604	133043-00	2	140	115
Art.6604	133043-07	2	140	115
Art.6604	133043-0041	2		115
Art.6605	133052-00	2	120	114
Art.6605	133052-07	2	120	114
Art.6605	133052-0041	2		114
Art.6605	133053-00	2	120	114
Art.6605	133053-07	2	120	114
Art.6605	133053-0041	2		114
Art.6606	133062-60	2		113

Art. / Acc.	Code disano	px n° pack	px n° pallet	pag.
Art.6606	133062-6007	2		113
Art.6606	133062-6041	2		113
Art.6606	133063-60	2	140	113
Art.6606	133063-6007	2		113
Art.6606	133063-6041	2		113
Art.6610	133100-00	1		117
Art.6610	133101-00	1		117
Art.6611	133005-00	2	140	111
Art.6611	133006-00	2	140	111
Art.6612	133014-00	2	140	112
Art.6612	133015-00	2	140	112
Art.6613	133024-00	2	140	112
Art.6613	133025-00	2	140	112
Art.6614	133034-00	2	140	113
Art.6614	133035-00	2	140	113
Art.6615	133044-00	2	140	110
Art.6615	133045-00	2	140	110
Art.6616	133054-00	2	120	110
Art.6616	133055-00	2	120	110
Art.6617	133074-00	2	140	111
Art.6617	133075-00	2	140	111
Acc.6620	994030-00	10		121
Acc.6620	994031-00	10		121
Acc.6620	994031-00001185	10		121
Acc.6621	994032-00	1		121
Acc.6621	994033-00	1		121
Acc.6621	994033-46001135	1		121
Acc.6622	994034-00	1		121
Acc.6622	994035-00	1		121
Acc.6622	994042-00	1		121
Acc.6623	994036-00	1		121
Acc.6623	994037-00	1		121
Acc.6623	994037-46001136	1		121
Acc.6625	994046-00			121
Acc. PS3	986440-00		60, 62, 64	
Acc. ANT WIFI DALI2	986445-00			509
Acc. ANT WIFI DALI2	986446-00			509
Acc.Basic- Dim Wireless	81420072	12		486
Acc.Basic- Dim Wireless connection	81420085	12		486
Acc.Basic- Dim Wireless Radio Sensor	81420082	12		486
Acc.Basic- Dim Wireless Timer	81420086	12		486
Acc.Basic- Dim Wireless user interface	81420083	12		486
Acc.Basic- Dim Wireless user interface	81420084	12		486
Acc. BLE DMX CON- TROLLER	81420057	12		517
Acc.BOX 140	986447-00			486
Acc.BOX IP65 DMX/ RDM	986557-00	1		517
Acc.BOX IP66	997649-00	1		486
Acc.Dismart gateway	81420077	12		490
Acc.DMX	986562-00	1		517
Acc. DMX MINI CON- TROLLER	986460-00			517

Art. / Acc.	Code disano	px n° pack	px n° pallet	pag.
Acc. DMX/ RDM SPLIT- TER IP20	986461-00			517
Acc.62 DMX/ RDM SPLIT- TER IP65	986513-00	1		517
Acc.DOP CONTROL- LER	986563-00	1		517
Driver Type 1	cod. 99767300001042	1		230
Driver Type 1	cod. 997673000011042	1		230
Driver Type 2	cod. 997673000411041	1		230
Driver Type 2	cod. 99767308411041	1		230
Driver Type 3	cod. 99767300001041	1		230
Driver Type 3	cod. 99767300301041	1		230
Acc.IR DIM DALI	986421-00	1	480, 482	
Acc.IR DIM DALI mini	986422-00	1		480
Acc.MASTER DALI	986417-00	1		480
Acc.MASTER DALI	986418-00	1		480
Acc.MASTER DALI	986426-00	1		482
Acc.PC DALI2	986450-00			508
Acc.PGuard ø200x90	81400047		480, 482	
PICTO	995111-00	1		265
PICTO	995112-00	1		265
PICTO	995113-00	1		265
PICTO	995114-00	1		265
PICTO	995115-00	1		265
PICTO	995116-00	1		265
PICTO	995117-00	1		265
PICTO	995118-00	1		265
Acc.PM BLE	986441-00		60, 62, 64, 486	
Acc. PS3	986440-00			486
Acc. RFX NODE	81410049	1		512
Acc.RMD	81420019	12	137, 147, 473, 475	
Acc.RMD	81420022	12	137, 147, 476	
Acc.Sensor IP66	986448-00			486
Acc.SENSOR M/L DALI2	986451-00			508
Acc. SERVER	81418573	90		513
Acc.Sincro DALI	81420033	12		478
Acc.SLAVE DALI	986419-00	1		480
Acc.SLAVE DALI	986423-00	1		480
Acc.SLAVE DALI	986427-00	1		482
Acc. TOUCH- PANEL	986442-00			513
Acc.TRAS	997660-00	1		284



EUROPEAN CONSUMER SAFETY LABEL

ENEC is a European Mark that demonstrates that an electrical product is compliant with applicable European safety standards and was manufactured by a company that applies a Quality System according to ISO 9000. The ENEC mark is recognized as being equivalent to the individual national marks of the countries that adhere to the agreement and provides a guarantee of product quality.

* ENEC European Certificate of Conformity:
PENDING APPROVAL



The ENEC Plus mark certifies that the LED luminaires are compliant and reliable in terms of safety and declared performance.

Please note that the purpose of the EC labelling is to indicate a product's compliance with all applicable standards and to guarantee the right of this product to be marketed directly in all member states of the European Community. The standards to be complied with by lighting fixtures are as follows: EC 89/336/EEC "electromagnetic compatibility" - EC 73/23/EEC "low voltage electrical materials". Therefore they comply with EMC regulations (electronic compatibility). For more detailed information, please contact our lighting design support centre.

Registered Design
DM/100271

The International Bureau of the World Intellectual Property Organization (WIPO) hereby certifies that the particulars given below correspond to the recording made in the International Register of Industrial Designs, at the date of the international registration, under the Hague Agreement Concerning the International Registration of Industrial Designs.



CSQ/IQNET marking is valid all over the world. It shows that the company has obtained the Company's Quality System certification as regards the design, production and marketing of lighting fixtures and accessories. The reference standard is UNI EN ISO 90001/IQNET and UNI EN ISO 9002/ IQNET. Environmental Management System compliant with the requirements of UNI EN ISO 14001.



I.M.Q. approval for wired fixture. All fixtures comply with CEI Italian safety standards corresponding to EN60598 European standards.

IK

Protected against impact energy

PROTECTION RATING AGAINST MECHANICAL IMPACT

classification according to standard: **EN 50102** o **NF C 20-015**

Impact force	NF C 20-010	Third figure in our catalogue
IK	J	IP
00	0	0
01	0,15	-
02	0,20	1
03	0,35	-
04	0,50	3
05	0,70	-
06	1	-
07	2	5
08	5	-
-	6	7
09	10	-
10	20	9

In the DISANO catalogue, there are some items, generally the more recent ones, that have two numbers (a subcode) at the end of the classical 6-digit code. These subcodes indicate the product type of wiring. Therefore, it is very important when making an order to write the complete DISANO code, including the subcode, which carries the following meaning:

- 03 = article designed to fit LED TUBLES
- 07 = article supplied with EMergency unit (1h)
- 09 = article supplied with electronic+EMergency gear (1h)
- 12 = article supplied with DIMM 1-10V wiring
- 14 = article supplied with double insulation class
- 19 = article supplied with integrated presence and light sensor
- 22 = narrow beam version (FS)
- 23 = article supplied with integrated wireless technology
- 24 = article supplied with integrated DISMART light controller
- 25 = article supplied with integrated ActiveAhead system
- 30 = article with Virtual Midnight
- 31 = article supplied with 3-hour emergency unit
- 38 = special version article (with *conformal coating* treatment)
- 39 = article with 3000K LED
- 40 = article supplied with Nema Socket
- 42 = Techno System fixtures equipped with a special upper cover for the direct mounting to the ceiling
- 44 = article with 1750K LED
- 54 = article supplied with ON/OFF switch
- 56 = fixture powered at 350mA
- 65 = article with UV-A LED
- 68 = article with 4000K LED
- 69 = article with UV-C LED
- 73 = article with AMBER LED
- 89 = article supplied with HCL-WIRELESS system
- 92 = article with on/off switch and electric socket
- 94 = article supplied with DIMM 1-10V + emergency unit (EM) (1h)
- 0016 = non-polluting luminous article, the products are manufactured in compliance with regional Italian laws
- 0024 = article supplied with TW-BASIC system
- 0034 = article with 5700K-CRI 90 LED
- 0035 = article with 5700K-CRI 70 LED
- 0041 = article with DALI digital dimmable electronic control gear
- 0045 = article with PUSH DALI digital dimmable electronic control gear
- 0050 = article with emergency wiring with centralized power supply
- 0054 = article supplied with Zhaga Socket
- 0059 = Techno System fixtures are designed to directly replace Rapid System FL ceiling lamps. The special mounting clip will make relamping quick and easy
- 0061 = article supplied with integrated DIMM DALI presence and light sensor
- 0072 = special version for continuous line applications
- 0078 = article supplied with PLC remote control system
- 0083 = article with 6500K LED
- 0092 = article with built-in multi-sensor
- 0093 = version with IP68 protection with gel watertight system at the bottom of the fixture
- 1219 = article supplied with integrated DIMM 1/10V presence and light sensor
- 2191 = fixture in corten colour

Versions with special LEDs for the **FOOD** industry (*Red Meat, Marbled Meat, Fish, Bread & Pastries e Produce*).

-00000034 = BREAD/CHEESE -00000036 = MEAT
-00000035 = FRUIT/VEGETABLE -00000037 = FISH

Pictographs



NEW PRODUCT

PERFORMANCE
Techniques - Lighting
Photometric

WATERPROOF FIXTURES Fixture enclosures are in polycarbonate and keep their IP65/66 water-proof rating if installed, used and maintained in compliance with technical specifications (particularly operating voltage and temperature), as well as with the supplied instructions and applicable standards. Exposure to direct sunlight may heat up the fixture to 45°C compromising the degree of protection. It is advisable to use fixtures properly without altering mechanical properties and protection rating (IP65/IP66); **do not install on surfaces subjected to heavy vibrations or externally from cables and poles.** Otherwise, use watertight fixtures in steel.

IP...

International Protection: The IP prefix followed by two figures indicates the level of resistance of the fixture to penetration by solids and liquids. Protection rating (published in EN60529) parts

IP43

Protection against solid bodies Ø > 1 mm and rain

IP44

Protection against solid bodies Ø > 1 mm and water sprays

IP20

Protection against solid bodies Ø > 12 mm only

IP54

Protection against dust and water sprays

IP23

Protection against solid bodies Ø > 12 mm and rain

IP65

Protection against dust and water sprays

IP55

Protection against dust and water jets

IP66

Dust and water tight

IP40

Protection against solid bodies Ø > 1 mm only

IP67

Dust and waterwave tight



Class II fixture (double insulation). No grounding needed.



V0: the test piece extinguishes within 5 sec. without dropping
V2: the test piece extinguishes within 25 sec. (dropping allowed)



Fixture surface area exposed to the wind.






















































































Size of hole for recessed installation



Minimum and maximum operating temperature. Ask for specific product temperature to our technical offices.



Fixture equipped with 0-90° protractor scale for aiming. Security dowels or rack with screw.

	Zone1: high protection, limited lighting (e.g.: internationally prominent astronomy or astrophysics observatories). Radius (3.3) from the observation centre, $r = 5$ Km.		AMENITY LIGHTING: gardens, tree-lined alleys, green areas, parks, promenades.		Ceiling light fixture fitted with lamps and baffle film protection		Built with materials that are highly resistant to acid and toxic gas corrosion.
	Zone2: protection around Zone 1 or around nationally and/or educationally prominent observatories. Radius (3.3) from the observation centre, $r = 5$ Km, 10 Km, 15 Km, or 25 Km, depending on the observatory importance.		RESIDENTIAL AREAS: private areas, residences; external walls, pedestrian paths, service stations - UNI 10439		The unit is supplied without power supply + LED.		On request: ideal version for spaces with a high concentration of particular volatile chemicals around the luminaires (see chemical compatibility table).
	HEALTHCARE ENVIRONMENTS: nursing rooms, operating rooms, clinics, first aids, wards, aseptic rooms UNI EN 12464.		SWIMMING POOLS: for difficult maintenance situations.		Electronic power supply with 230/240V - 50/60Hz + LED.		Fixtures wired with dimming electronic power supply.
	SCHOOLS: classrooms, lecture rooms, laboratories, meeting rooms. UNI EN 12464.		CLASSIC LIGHTING: Ideal for application in city centers.		Electronic dimmable power supply with 230/240V - 50/60Hz (1/10V) + LED.		Fixtures wired with 1-10V dimming electronic power supply.
	OPEN SPACES: offices, large areas, public areas, waiting rooms. UNI EN 12464.		BICYCLE PATHWAYS: also for pedestrian areas.		Electronic digital dimmable power supply with 230/240V - 50/60Hz (DALI) + LED..		Fixtures wired with DALI digital dimmable electronic power supply.
	OFFICES: single office, meeting rooms, telephone exchange rooms, offices with VDU terminals (time spent in front of the screen: less than 3 hours totally) - UNI EN 12464		TUNNELS: highway, railway, underground and subway, tunnels.		Electronic digital dimmable power supply with 230/240V - 50/60Hz (PUSH DALI) + LED		Fixtures wired with PUSH DALI digital dimmable electronic power supply.
	OFFICES WITH VDU TERMINALS: drafting and designing rooms, meeting rooms, banks, offices with VDU terminals (time spent in front of the screen: 3 to 6 hours) - UNI EN 12464		PEDESTRIAN ROUTES: near crossroads, pedestrian crossings, and traffic light intersections.		Electronic power supply with 230/240V - 50/60Hz+ emergency kit + LED.		E1= permanent (illumination + emergency) emergency circuit.
	OFFICES WITH VDU TERMINALS: time spent in front of the screen: more than 6 hours continually - UNI EN 12464.		STREETS: Secondary roads, shop-lined streets, low-traffic streets, industrial areas. UNI 10819 - UNI 10439.		Electronic dimmable power supply with 230/240V - 50/60Hz (1/10V) + emergency lighting + LED.		permanently mounted fixture, operating in AC/DC mode, with centralized emergency device, not incorporated into the fixture.
	ART AND CULTURE: cinemas, theatres, museums, galleries, churches, libraries, auditoriums, monuments UNI EN 12464		These products are compliant with all applicable tests (third-party certification) pursuant to standard ANSI C136.31: Street Lighting – Luminaire Vibration . - Test level: 3.0G Level 2 for bridge/overpass applications.		The unit is supplied with emergency wiring with centralized power supply.		
	COMMON AREAS: corridors, stairs, lifts. UNI EN 12464.		Products compliant with ball impact resistance test standard DIN 18032-3: 2018.		The unit is supplied with ADVANCED PROG wiring.		Electronic safety device to protect the LED module and the related ballast. - Class 2: protection up to 10KV (on request).
	COMMERCIAL CENTRES: shops, show rooms, shop windows, supermarkets, airports. UNI EN 12464.		The lighting fittings can be trodden on and also bear vehicle loads		The unit is supplied with BASIC PROG wiring.		Fixtures are equipped with a device to reduce flux in 4 steps based on the calculation of the virtual midnight (For more information see page XVI-XX).
	LARGE-SCALE DISTRIBUTION: shopping centres, supermarkets, hypermarkets.		Narrow beam.		The fixture can be mast-top installed. Tilt angle as indicated.		ADVANCED PROG (CLD PROG): the products are supplied with programmable drivers as standard. All these functions are already present on standard products and need only to be enabled on request (For more information see page XVI-XX).
	MALLS: General shops, goods displays, shop windows, supermarkets, airports, shop facades UNI EN 12464.		Medium beam.		The fixture can be mast-arm installed. Tilt angle as indicated.		BASIC PROG (CLD BASIC): luminaires developed to grant great flexibility of use thanks to the possibility to vary luminous flux intensity by changing the LED drive current (For more information see page XVI-XX).
	FOOD INDUSTRY: UNI EN 12464.		Wide beam.		Mast top connection diameter.		Installation of photocell switch device as an optional feature.
	WORKSHOPS: mechanical workshops, bodyshops, garages - UNI EN 12464.		Extra-wide beam.		Risk Group 0 (RG0): luminaires are exempt from photobiological risks in compliance with standard EN 62471.		Possibility of centralized lighting point control or via external presence/lighting sensors (see chapter <i>Lighting management systems and recommendations</i>).
	STORES: Goods sheds, warehouses, depots, production areas, hangars. UNI EN 12464.		Asymmetric beam.		Risk Group 0 (RG0 Ethr): luminaires are exempt from photobiological risks in compliance with standard EN 62471. If necessary, contact our customer service for the observation distance.		Built-in RADAR SENSOR (sub-code -19 at an extra price): is an automatic sensor that immediately sense the presence of people's movements and anyone walking past.
	Fixture available in the ATEX version.		Both direct and indirect light.		Risk Group 1 (low risk group): luminaires do not pose any risks due to normal behavioural limitations of a person when exposed to a light source.		Possibility of lighting point management with Casambi technology, an advanced automation lighting control system based on the bluetooth low energy (BLE).
	Fixture available in the HORTICULTURE version.		Produced with vandal resistant materials.		Low Flicker: product with a very low flicker; uniform light for greater eye protection.		Fixture ideal for HD TV broadcasts.
	Fixture available in the Tunable White and HCL version (see chapter <i>Interiors - HCL</i>).		Material supplied with vandal resistant system.		UV-stabilised coating, anti-yellowing. Fixture built with stabilised materials.		Fixture available in the RGBW - DMX/RDM version (see chapter <i>Lighting management systems - DMX solution for LED RGBW</i>).
	INDOOR SPORTS FACILITIES: ice-skating facilities, sport facilities, athletics grounds, swimming pools, gymnasiums, volleyball courts, basketball courts		Aiming on horizontal axis at 0°.		On request: coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments.		Fixture available in the RGB FULL-COLOR (see chapter <i>Lighting management systems - DMX solution for LED RGBW</i>).
	LARGE AREAS: parking grounds, facades, common areas, loading and unloading areas		Aiming on vertical axis at 0°.		Radial dark light optic unit 65° manufactured according to European EN 12464 Regulations. Suitable for uses in places fitted with video terminals		

1- This catalogue supersedes and cancels all previous editions.

2- All list prices are VAT excluded and already include WEEE contribution. However, prices are not binding and the company will inform you on any variation.

3- Goods travel at the customer's risk, including in the case of possible breakages, even if shipped carriage free. No complaints will be accepted after 8 days from receipt.

4- Orders will be dealt with according to availability; partial shipments may also be sent out.

5- The characteristics of the articles, the LEDs used and the lighting design calculations may be subject to change without notice and with no obligation of notification, in accordance with our manufacturing requirements and in order to finalise the lighting fixture.

6- Transportation costs, with the exception of delivery by our vehicles, are at the customer's expense.

7- Returned goods will not be accepted. In any case, returned goods must be authorised by our company and will be accepted carriage free if the material is in a good state of conservation and can therefore be used. (Ask for the current year's circular).

8- We recommend that plastic components, especially those designed for suspension luminaires, be checked at least every time the bulb is changed.

9- Only payments made directly to our address or to persons authorised by our company, will be accepted.

10- Reproduction, even in part, of the descriptions and illustrations in our catalogue is prohibited.

11- The place of jurisdiction for any legal disputes arising from or related to these General Sales Conditions shall be Milan.

12- Disano guarantees that the products it manufactures are free of defects, in accordance with art. 1490 and subsequent articles of the Italian Civil Code.

QUANTITIES SHALL BE HANDLED ONLY IN PACKAGES OR RELEVANT MULTIPLES

SURCHARGE OF 10% FOR ACCESSORIES NOT HANDLED IN PACKAGES

DIMENSIONS ARE GIVEN IN MM, UNLESS OTHERWISE INDICATED

PHOTOMETRIC DATA, POWER EFFICIENCY AND LUMINAIRE DESIGN INFORMATION MAY BE SUBJECT TO VARIATIONS AND IMPROVEMENTS. BASED ON THE SPEED OF TECHNOLOGICAL EVOLUTION AFFECTING THESE PRODUCTS. THE COLOUR TEMPERATURES OF LEDS FALL WITHIN ACCEPTED INDUSTRY TOLERANCES DEFINED BY LED MANUFACTURERS, WE WILL GIVE NOTICE OF THESE CHANGES ON OUR WEBSITES FROM TIME TO TIME.

OUTPUT LUMINOUS FLUX AND POWER (tq): THE REPORTED LUMINOUS FLUX IS THE FLUX EMITTED BY THE LIGHT SOURCE WITH A TOLERANCE OF $\pm 10\%$ COMPARED TO THE INDICATED VALUE. THE W TOT COLUMN (EXCEPT FOR THE EMERGENCY VERSIONS, OF WHICH VALUES ARE TO BE PROVIDED UPON REQUEST) INDICATES THE TOTAL WATTAGE ABSORBED BY THE SYSTEM WITHOUT EXCEEDING 10% OF THE INDICATED VALUE.

NOMINAL LUMINOUS FLUX AND POWER (tj-tp): LUMINOUS FLUX AND POWER VALUES ARE NOMINAL. THE FLUX MAY HAVE A TOLERANCE OF $\pm 10\%$ WITH REFERENCE TO THE INDICATED VALUE. THE W COLUMN INDICATES THE LED'S POWER WATTAGE.

ALWAYS STAY WITHIN THE RECOMMENDED OPERATING TEMPERATURES OF THE DEVICE.

EXPOSURE TO CHEMICALS EITHER DIRECTLY OR IN THE ATMOSPHERE MAY DAMAGE THE LEDS AS WELL AS THE LIGHTING FIXTURES. FOR FURTHER INFORMATION, PLEASE CONTACT THE MANUFACTURER AND READ THE CHEMICAL COMPATIBILITY TABLE.

SOME IMAGES ARE SIMULATED APPLICATION AND / OR PHOTOMONTAGES



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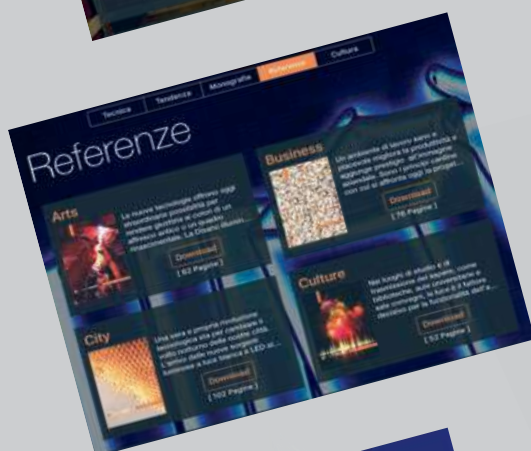
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