LED Lighting Solutions

2025

Explosion-protected electrical equipment

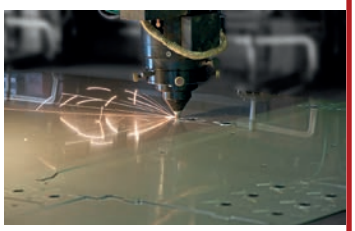
CORTEM GROUP

50 YEARS

To be sure to be safe.

Italian Manufacturer

CORTEM GROUP
To be sure to be safe



Since 1968, Cortem S.p.A. has been designing and manufacturing explosion-proof and weather-proof electrical equipment addressed to hazardous areas. Thanks to a continuous effort in technical innovation and improvement, it's today a leader in this field, able to provide a whole range of products, meeting on-shore and off-shore applications.

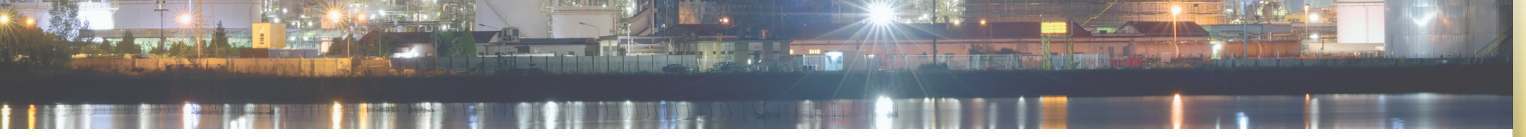
The peculiarity of the Technology Group Cortem, formed by Cortem, Elfit and Fondisonzo companies, is the experience gained in the Ex field which results not only in the furniture of simple Ex-products, but also in engineered and customized solutions. All our products are designed and manufactured internally according to different methods of protection such as 'Ex db' flameproof, 'Ex eb' increased safety, 'Ex de' mixed and 'Ex nR' restricted breathing, using primary aluminium alloys, stainless steels and plastic materials that assure resistance and duration. The aluminum alloy used by Cortem has passed all tests required by EN 60068-2-30 Standard (hot/humid cycles) and EN 60068-2-11 Standard (salt spray test). All our products in aluminium alloy are protected by an polyester coating RAL 7035. This treatment, only provided by Cortem Group, guarantees a durable protection.

Cortem production range can be summarized as follows:

- Lighting fixtures, obstruction lighting fixtures, floodlights and hand lamps.
- Junction and pulling boxes, control stations.
- Signalling and control equipment, plugs and sockets.
- Cable glands and electrical fittings.
- Special executions: switchgears and panel boards according to customer's specifications.

90% of our production are located in the Oil & Gas sector both off-shore and on-shore, but also in chemical, pharmaceutical plants and in all those manufacturing areas where the presence of explosive atmospheres may occur such as grain silos, woodworks and paper mills. We invest every year some of our resources to develop innovative products that meet the market needs and, for this reason, our R&D department studies the best solution valuating normative and market price issues, plant and security aspects.

With 4 Sister Companies, 10 Distribution Hubs and a wide sales network, Cortem provides a local and qualified presence around the world. For Cortem "displacing" does not mean transferring facilities, resources and know-how in low cost Countries, but replicating a successful model of industrial organization in which environment safety, product quality, compliance with standards, technical and after-sales services are the fundamentals of our corporate mission. The pay-off "to be sure to be safe" represents our pride and passion for what we design and manufacture.

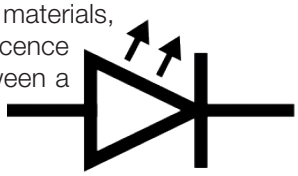


Ensuring an adequate level of illumination of the plants is one of the main problems observed, in order to guarantee the safety in the workplace. In particular, the lighting fixtures addressed to electrical system installed in areas with danger of explosion are designed with even greater attention to get good illumination and reduction of risk conditions. Cortem Group LED lighting fixtures have been designed to ensure the proper dissipation of the LED temperature and, therefore, the best operation for a longer life of the product.

Introduction

1. LEDs Operation

LED, acronym of Light Emitting Diode, is formed by layers of different semiconductor materials, thanks to the electrical energy is converted into photons through the electroluminescence phenomenon: an electromagnetic radiation is released as a result of recombination between a hole and an electron.



This technology provides significant gains in efficiency compared to other sources of light, in which most of the electricity is converted into heat and only a small fraction into light.

2. Advantages of LED technology

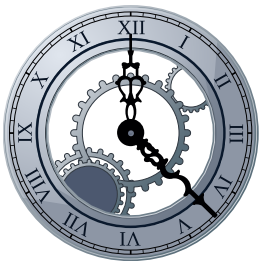
- **Energy savings**

With the same illumination, LED technology allows to obtain a greater efficiency compared to traditional lighting sources. In addition to a lower consumption with an equal illumination, it's not necessary to use color filters as the light emitted is already colored and particularly bright. This is a great advantage if you consider that, for example, red colored glass, filters only 20% of the light emitted.

Comparing LED technology and discharge lamps, we can say that a mercury vapor lamp of 400 W can be replaced by a EWL-801 series lighting fixtures of 110 W, with an energy saving of more than 70%.

- **Increased duration**

Compared to incandescent lamps, LEDs have a lower loss of brightness over time and a high resistance to shock and vibration; therefore, they have longer life in heavy installations.



The useful life of LED systems is estimated of 50.000-100.000 hours (10-20 years, 12 hours a day) respect to 4.000-5.000 hours (11-14 months) of high-pressure sodium lamps and 9.000 hours of mercury vapor lamps (10-14 months, 12 hours per day).

According to estimates, the brightness of a LED system after 50.000 hours drops to 70% compared to the initial value and this can be considered the end of the LED useful life.

- **Strong reduction in maintenance operations**

The maintenance costs of LED lighting equipment are estimated at around a tenth of the systems currently in use.

- **Quality of light and improved safety (better visibility in critical condition and reliability of the lamp)**

The light emitted by high-pressure sodium lamps is yellow, not corresponding to the sensitivity peak of the human eye: not all colors are faithfully reproduced and, therefore, it's required more light to ensure a safe vision.

LEDs, instead, emit cold white light, allowing a safe lighting and a visual confort for users: it lowers the reaction times for the unexpected, goes through the fog much better and increases the quality of images captured by security cameras.

The Color Rendering Index (CRI) indicates the fidelity of color reproduction on a scale from 1 to 100. Sodium lamps have an index of 20, while LEDs between 70 and 80. Some studies indicate that should be chosen light sources with a spectrum prevailing in the blue band, such as LEDs, without requiring high luminance values. The high-pressure sodium lamps have a spectrum

centered in the red band, outside of the sensitivity peak of the human eye.

Furthermore, the high number of LEDs installed in a lighting fixture is a guarantee and reliability factor because, in the case of failure of one or more LEDs, our lighting equipment continues to operate. Finally, while discharge lamps requires a preheating time for their complete ignition, LED lighting fixtures have immediate ignition (Instant Restrike).

- **Reduced environmental impact**

The environmental impact is practically zero thanks to the absence of toxic and noxious substances in components such as gases, mercury vapors, sodium, etc..

Furthermore, there are no emission of ultraviolet radiation: any mutagenic potential damage to people and, a factor not to be ignored, low attraction of dust and insects.

- **Low light pollution**

The traditional lamps are omnidirectional and spread the light in all directions. For this reason, it's necessary to provide the lighting fixture with a reflector to recover the half: the final luminous efficiency is 50%. LED, on the contrary, is directional and emits a light beam well defined and, therefore, minimizes the light pollution.

- **Photobiological risk**

Cortem Group, always committed to technological innovation and safety of people and environment, submitted the LED EWL, SLED, EVNL, EVL, LIFEX, EXEL-L series lighting fixtures and floodlights to the test for the photobiological risk, as provided by IEC 62471, EN 62471 and CEI EN 62471 standards currently in force, and by the Legislative Decree N° 81 of April, 9th 2008 which introduced the risk assessment.

These standards, as well as providing guidance for the photobiological safety evaluation, define the exposure limits (EL), the measurement techniques and the classification scheme for the evaluation and control of photobiological risks.

The IEC 62471 standard contains several construction requirements related to the ANSI/IESNA RP-27.2 standard which is valid in North America.

The test reports proved that these lighting fixtures, both in the version without optics, with standard beam of 120°, and in the versions with optics concentrating the light beam (10°, 20°, 40°), are fully compliant with the requirements of the "Exempt Group".

- **New certification 'Ex op is'**

But what is the safe optical radiation?

First of all, it must not be confused with the photo-biological safety (CEI EN 62471:2010) which concerns any LED lighting fixtures and considers the possible damages to the human eye that light source may cause.

"Op is" safe optical radiation is disciplined by the IEC 60079-28 Ed.2 standard which specifically concerns the EX world (ATEX/IECEX).

In particular, the standard identifies two parameters measuring the danger of a lighting emission: the optical power (mW) and the optical irradiation (mW/sqmm).

Historically this standard was applied to the use of laser sources and to the resulting risks. In latest time its application represents a further safety for LED light sources with divergent beam used for simple lighting.

In the case of classified areas, an optical source may represent a trigger when exceeds defined power values and beam collimation.

The "op is" protection is applied when the radiation is not enclose in a defined place, but comes out from the device (as it happens for light beam that comes out from the lighting fixture) and its aim is to guarantee that the optical power emission or optical irradiation emission not exceed the expected levels, also in damage conditions.

3. How to choose the right LED lighting fixture

To choose the perfect LED lighting fixture it's necessary to follow these steps:

1. Analyze the electrical and environmental characteristics of the plant to be illuminated and the type of installation required from the point of view of weight and size.
2. Determine the illuminance values required.
3. Compare the electrical and photometric characteristics between the traditional discharge lighting sources and the lighting fixtures with LED technology.
4. Simulate the lighting system and calculate the number of the necessary light sources using the .IES and .LDT files for lighting calculations.
5. Calculate the ROI (Return On Investment).

- **Units of measurement of lighting engineering**

These are the main lighting units of measurement to consider in the design of a new plant.

The luminous flux: it's the amount of light emitted from a light source in the unit of time. It's measured in **lumen** and it's represented by Φ or **lm**.

The number of lumens emitted by a light source tells us how much light produces such source. For example, a 100W incandescent lamp produces 1.400 lumens; a 23W compact fluorescent lamp produces 1.450 lumens. Obviously, the brand and the quality of the lamp affect this parameter.

The light intensity: it's the amount of luminous flux emitted in a certain direction and in the unit of the solid angle, which is measured in steradians. The unit of measure is the **candles (cd)** . The light intensity gives an indication of how the light is penetrating in a certain direction. For this reason, when we speak about hand-lamps or signaling devices, we use the candles (cd) as unit of measure.

The illumination: it's the amount of luminous flux per unit area. It's measured in **lux**.

The illumination is used for the evaluation of the impression of the light on the floor. It can only be calculated by computer through the EULUMDAT or IES files. For example, in Italy specific standards, such as the UNI EN 12464-2 "Lighting of outside workplaces", establish minimum values of lux for various applications.

In petrochemicals, the illumination is expected from 20 to 200 lux. Different process areas require different illuminations. The system engineer will make the right considerations in order to establish the proper lighting fixture.

The Colour Rendering Index: it's a measure of how the colors illuminated by a source appear natural. The color rendering index tells us how a light source is able to reproduce the color of an object illuminated. High values of CRI (Color Rendering Index) means high color matching. It's indicated with **CRI** (or IRC or Ra).

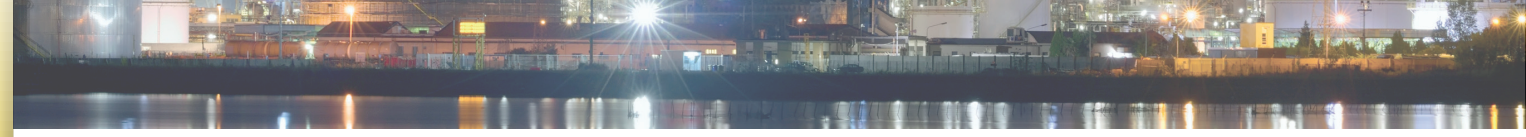
The UNI 10380 Standard divides the set of possible values of the color rendering index into five groups:
- 1A: Ra ≥ 90%
- 1B: 80% ≤ Ra < 90%
- 2: 60% ≤ Ra < 80%
- 3: 40% ≤ Ra < 60%
- 4: 20% ≤ Ra < 40%

CRI=90 CRI=70 CRI=50

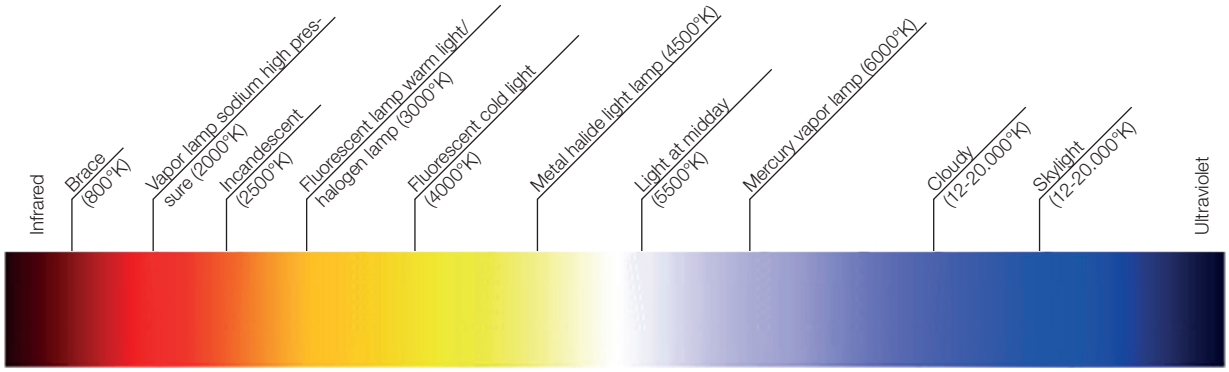
The luminous efficiency: it's the relation between the flux emitted by a light source and the electric power consumption expressed in Watts. It's denoted by **Φ/P** and measured in **Lm/W**.

The lighting performance: it's the relationship between the amount of useful flux and the total amount of flux emitted by the light source. It's denoted by η and it's measured in **%**.

Luminous efficiency, light output and LED: it's clear that the overall efficiency of a lighting fixture is the result of the luminous efficiency by the light output. In the case of a LED lighting fixtures, the light output is given equal to 100% and, therefore, the measured luminous flux is the actual of the lighting fixture.



The Colour Temperature: it's the lighting parameter that quantifies the tone of light. It's measured in **°K** (Kelvin). Usually we talk about warm white or cool white. Our LED lighting fixtures have a standard color temperature ranging from 5.700°K to 6.500°K.

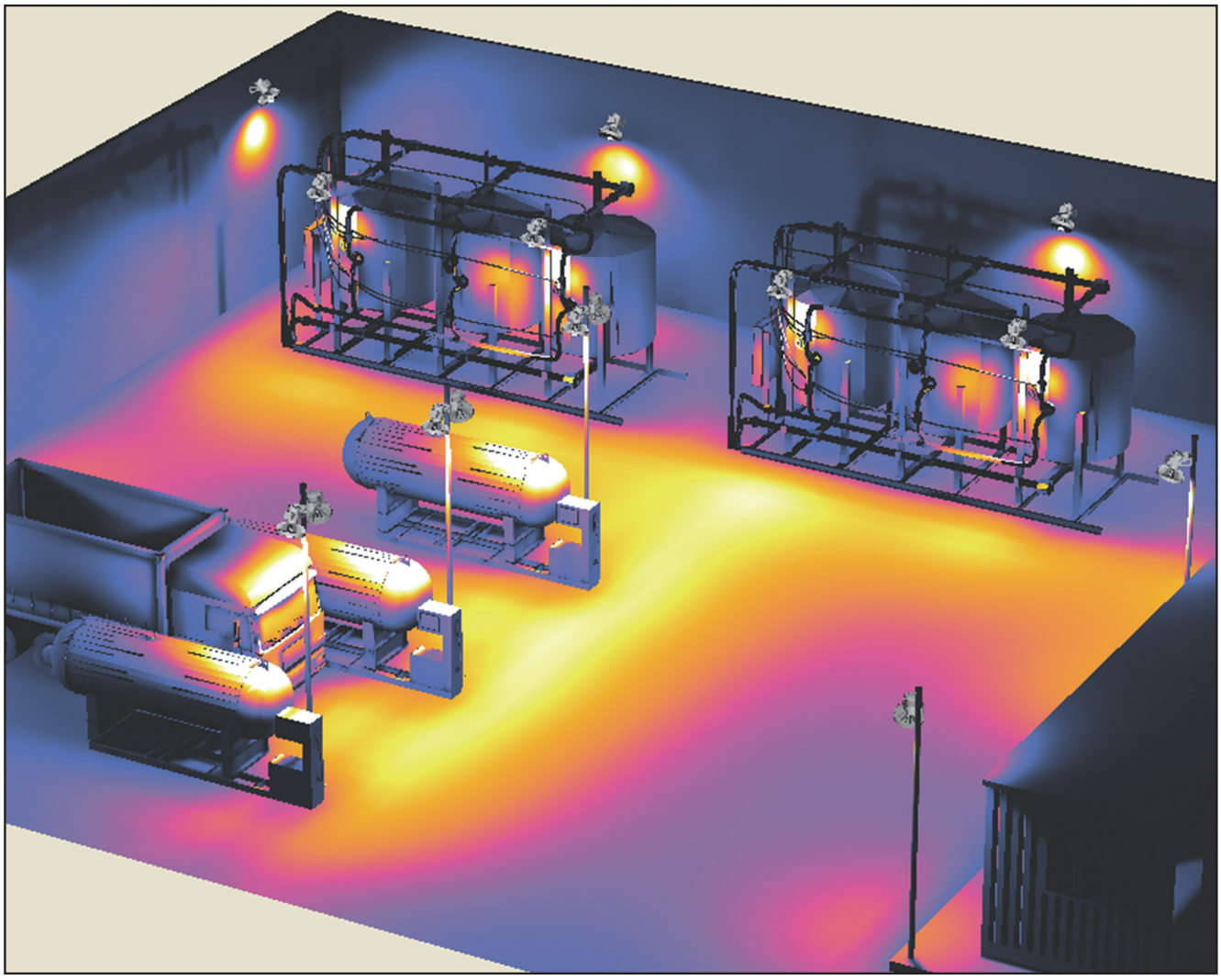


- **Comparison between traditional light sources and lighting fixtures with LED technology**

For each product contained in this brochure you can find the comparison, in terms of candles peak, between Cortem discharge lighting fixtures and LED light sources.

- **Use the .IES and .LDT files for lighting calculations**

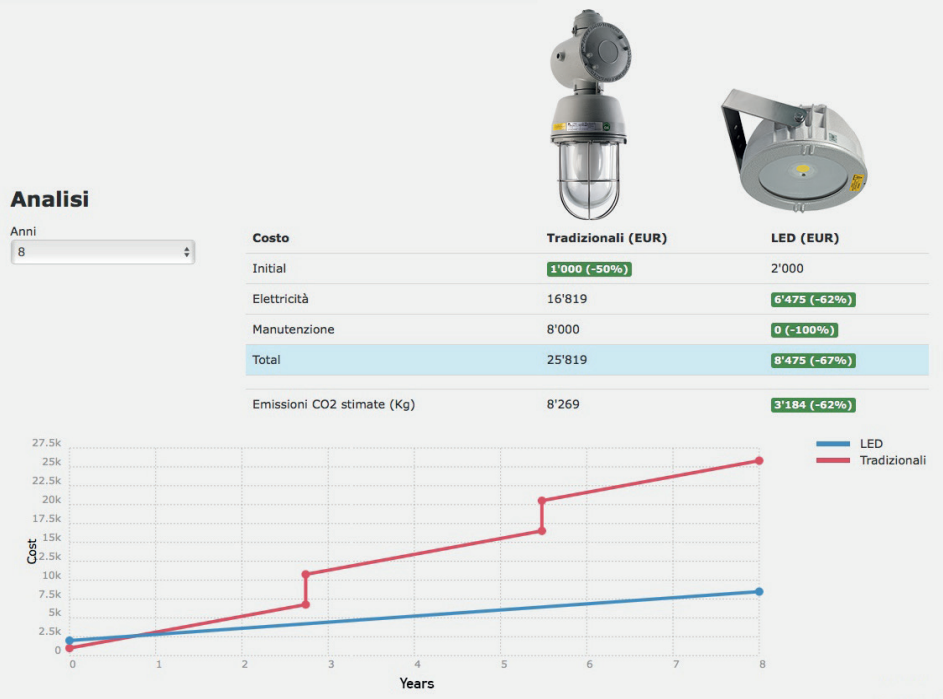
The availability of reliable and accurate photometric data of the light sources is a fundamental requirement for any lighting designer for the plan of a good lighting system. On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.



Calculation of ROI (Return On Investment)

Cortem Group has developed a tool to calculate the ROI (Return on Investments) relevant to the purchase of LED lighting fixtures comparing the purchasing, energy, maintenance and installation costs between LED and traditional light sources. Have a look at www.cortemgroup.com

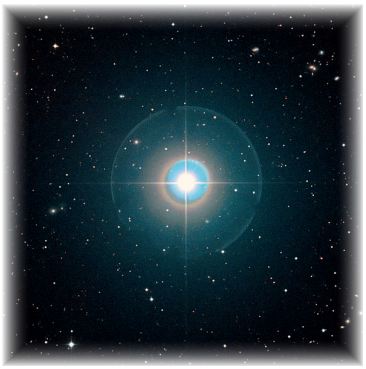
LED savings analysis



This tool allows you to calculate the cost savings resulting from the purchase of LED lighting fixtures respect to traditional ones comparing lighting parameters, consumption, maintenance costs and average lifetime.

Please note that this tool doesn't use nominal data but only real information, calculated by laboratory through the photometric data files. The final analysis is therefore related to effective and not only estimated savings.

- ## Declarations about the maintenance of the light flow



Currently, several LED lighting manufacturers produce test results according to the LM-80 as the basis for Lx *(luminous flux)*, By *(gradual degradation)* and Cz *(abrupt deterioration of the light)* statements as maintenance thresholds for LED lighting fixtures.

The LM-80 requires to test LEDs for 6.000 hours and recommends testing for 10.000 hours. It requires tests at three surface temperatures (55°C, 85°C and a third temperature determined by the manufacturer) to see the effects of the temperature on the light output and specify the additional test conditions to ensure consistent and comparable results.

In fact, the main LED manufacturers try their products at the minimum of 6.000 or 10.000 hours provided by the LM-80, and then apply extrapolation methods as described in TM-21 *(Provides recommendations for the long-term projection of LED luminous flux maintenance using the data obtained during tests in accordance with IES LM-80-08)* to get the values L_{90}, L_{70} and L_{50}. The device manufacturers translate these curves into specific curves of the LED lighting fixture.

LM-80: Regarding the measurement of the luminance maintenance of LED light sources (single LEDs or multi chips). It consists of a real size for the first 6.000 hours, combined with an extrapolation until the end of life. Many lighting fixture manufacturers translate the LED light source curve in the illumination LED device maintenance curve using the TM-21 recommendations.

Cortem Group, according to the type of lighting fixtures and the built-in LED model installed, has designed and manufactured specific housings suitable for the dissipation features required by the manufacturer of LEDs, in order to dissipate LEDs heat generated during operation and thus optimizing, during the engineering phase, the ability to last in time with the least power and luminous flux loss.

In addition, always paying close attention to the functional guarantee and the end-of-life aspect, Cortem Group analysed all the constructive and product quality variables, in order to minimize possible defects resulting from so-called "child mortality" and possible implications for a proper dimensioning of the drivers, for uses in environments with positive or negative temperatures. All of the above considerations are of an exemplary nature and they are not intended for a specific product of Cortem. For each specific product is necessary to refer to the technical data sheets.

Streetex

- Zone 1, 2, 21, 22
- Savings on energy costs, maintenance and installation
- Immediate high-intensity activation
- Visual comfort
- Durable and safe over time

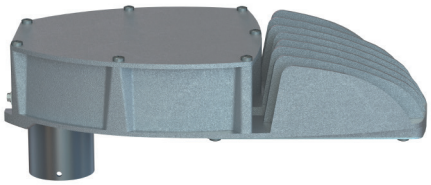
Fins for heat dissipation

Polyester coating RAL 7035

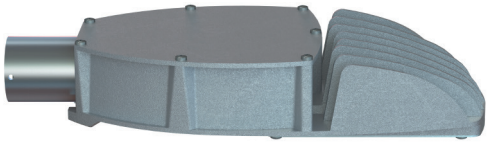
LED board with optics

Stainless steel screws

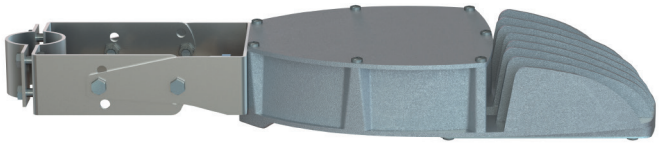
Various installation options



Version with direct vertical pole mount



Version with direct horizontal pole mount



Version with mounting bracket and cable entry with cable gland

STREETEX Series LED street lighting fixtures

STREETEX series LED lighting fixtures are suitable for outdoor and perimeter street lighting of industrial areas, especially for the chemical and petrochemical, on-shore and off-shore sectors as it is certified for installation in Zone 1, 2, 21, 22 and in accordance with Directive 2014/34/EU. An essential feature for road safety, STREETEX street lighting fixtures provide the lighting needed to ensure adequate visibility during night time or low-light conditions in all those areas where low- and medium-power discharge lighting fixtures were generally installed.
The STREETEX series is available in two sizes and features a finned body, made of aluminium alloy that acts as an excellent heat sink. Designed following the specific requirements of street lighting, STREETEX can be supplied in versions with direct horizontal/vertical pole mount or with a mounting bracket and cable gland. Different types of optics can also be installed directly on the LED plate. Optics is a crucial part of street lighting as it determines the direction of light on the road surface according to different requirements: light concentrated in a specific direction or evenly diffused light.
Efficient and functional especially in terms of installation and maintenance operations, STREETEX street lighting fixtures stand out for their exceptional energy efficiency in addition to a substantial reduction in product maintenance.

Sectors of application:

Petroleum refineries | Chemical and petrochemical facilities | Anti-light pollution | Offshore facilities | Onshore facilities | Perimeter zone lighting | Petroleum loading/unloading pontoons | 100% produced by Cortem

CERTIFICATE DATA

Classification:	Group II	Category 2GD/3G	
Installation: EN 60079.14	zone 1, 2, 21, 22 *STREETEX-ME*	zone 2, 21, 22 *STREETEX-MN*	
Marking:	CE 0722 Ex II 2GD - Ex eb mb IIC T.. Gb - Ex tb IIIC T..°C Db - IP66		*STREETEX-ME*
	CE Ex II 3G - Ex nR IIC T.. Gc		*STREETEX-MN*
Certificate:	ATEX CML 23 ATEX 3195X		*STREETEX-ME*
	ATEX CML 23 ATEX 4196X		*STREETEX-MN*
	IEC Ex CML 23.0069X	For all certification data IEC Ex, UKEX, ECASEx download the certificate from www.cortemgroup.com	
	UKEX AVAILABLE		
	ECASEx AVAILABLE		
Standards:	CENELEC EN60079-0: 2018, EN60079-7: 2015+A1:2018, EN60079-31: 2014, EN60079-18: 2015+A1:2017/2019 and EUROPEAN DIRECTIVE 2014/34/UE. IEC60079-0: 2017, IEC60079-7: 2017, IEC60079-15: 2017, IEC 60079-18: 2017, IEC60079-31: 2013		
Temperature class:	For all permitted ambient temperature classes, please see the "Selection tables"		
Temp. Temperature:	-55°C +60°C *(STREETEX-ME)* -60°C +60°C *(STREETEX-MN)*	For all permitted ambient temperature ranges, please see the "Selection tables"	
Degree of protection:	IP66		

STREETEX Series LED street lighting fixtures

For more information on electrical connectors

ORIGINAL PRODUCT

NO PHOTOBIOLOGICAL RISK (IEC / EN 62471 STANDARD)

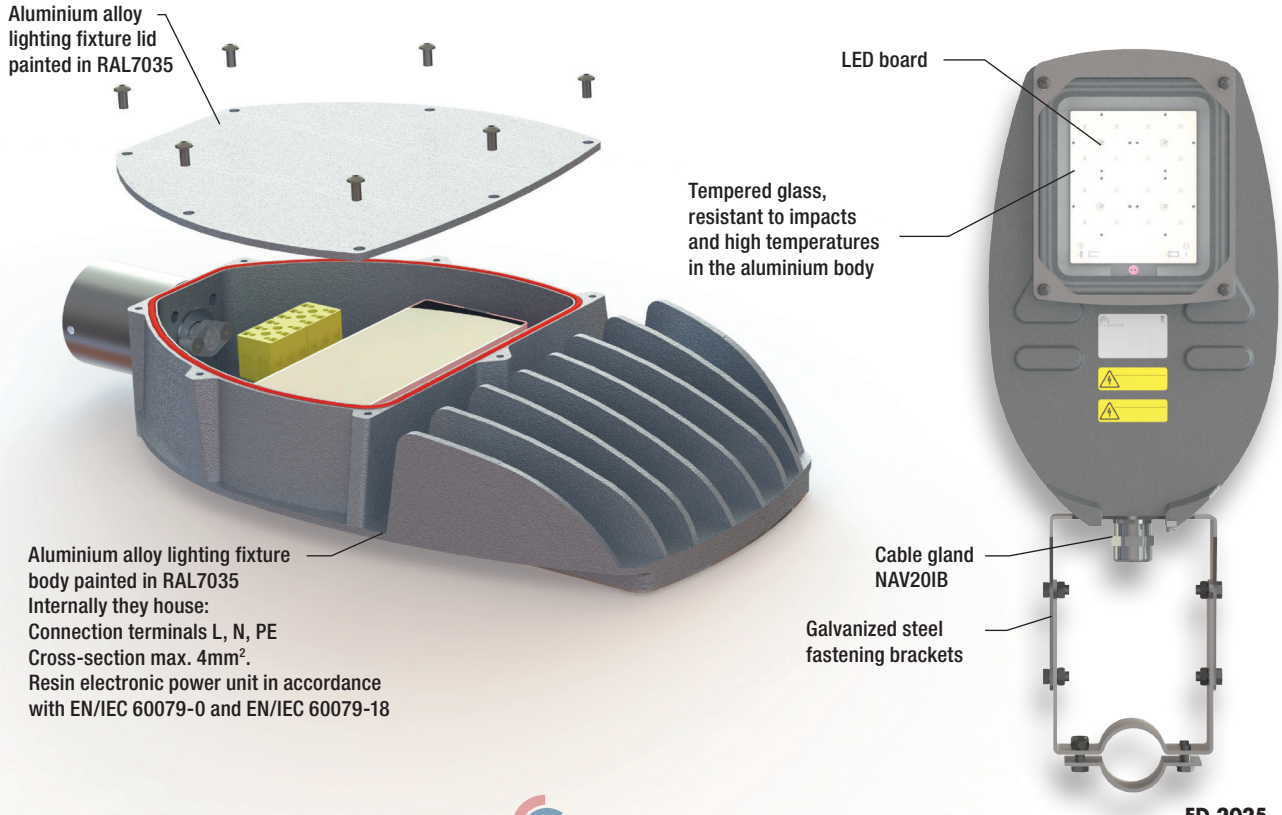
MECHANICAL FEATURES

Body:	Aluminium alloy with low copper content. With cooling fins for efficient heat dissipation
Front glass:	Tempered glass, resistant to high temperatures and shocks
Gaskets:	Silicone resistant to acids, hydrocarbons and high temperatures
Fastening bracket:	Galvanized steel
Screws:	Stainless steel
Entry points:	1 entry point Ø1 1/2" for version with direct pole mount 1 entry point M20 complete with NAV20IB cable gland for version with mounting bracket
Coating:	Polyester RAL 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by the Standard EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

ACCESSORIES ON REQUEST / SPECIAL REQUESTS

Poles with different diameters and lengths complete with junction box attached to pole base
Lighting fixture fastening bracket in AISI 304 or AISI 316L steel

STREETEX-..-080.. LIGHTING FIXTURE IN DETAIL

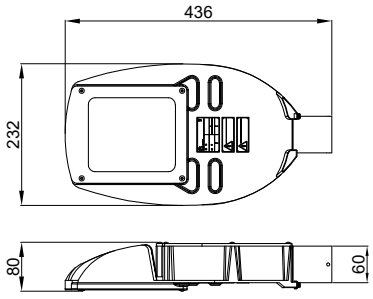


STREETEX series selection table

	Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature				Lumen lm	Light intensity cd	Overall efficiency Lm/W
				TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C			
Zone 1, 2, 21, 22	STREETEX-ME-080025...	26	25	T5/93°C	T4/103°C	T4/108°C	T4/113°C	3432	1079	132
	STREETEX-ME-080050...	52	50	T5/93°C	T4/103°C	T4/108°C	T4/113°C	6865	2159	132
	STREETEX-ME-080075...	78	75	T5/93°C	T4/103°C	T4/108°C	T4/113°C	10300	3238	132
	STREETEX-ME-080100...	95	100	T5/93°C	T4/103°C	T4/108°C	T4/113°C	12480	3973	131
	STREETEX-ME-100200...	194	200	T5/92°C	T4/102°C	T4/107°C	T4/112°C	24503	7744	126
Zone 2, 21, 22	STREETEX-MN-080025...	26	25	T5/93°C	T4/103°C	T4/108°C	T4/113°C	3432	1079	132
	STREETEX-MN-080050...	52	50	T5/93°C	T4/103°C	T4/108°C	T4/113°C	6865	2159	132
	STREETEX-MN-080075...	78	75	T5/93°C	T4/103°C	T4/108°C	T4/113°C	10300	3238	132
	STREETEX-MN-080100...	95	100	T5/93°C	T4/103°C	T4/108°C	T4/113°C	12480	3973	131
	STREETEX-MN-100200...	194	200	T5/92°C	T4/102°C	T4/107°C	T4/112°C	24503	7744	126

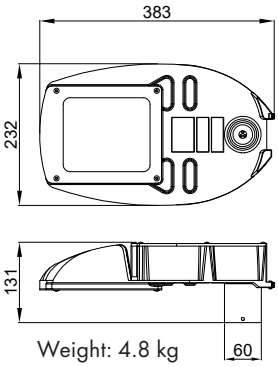
Dimensional drawings

STREETEX-..-080...T



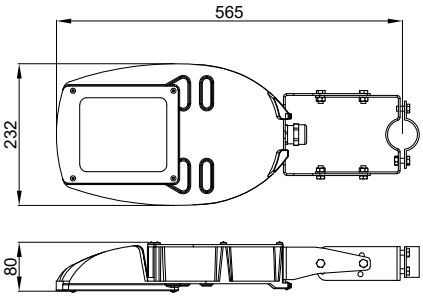
Weight: 4.8 kg
Packaging: 245x195x710

STREETEX-..-080...IX



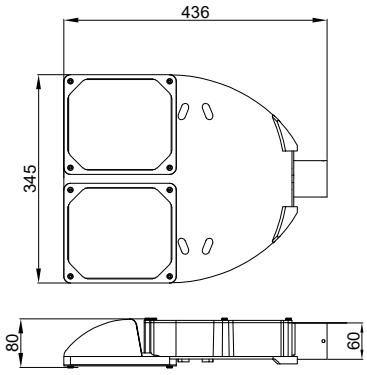
Weight: 4.8 kg
Packaging: 245x195x710

STREETEX-..-080...



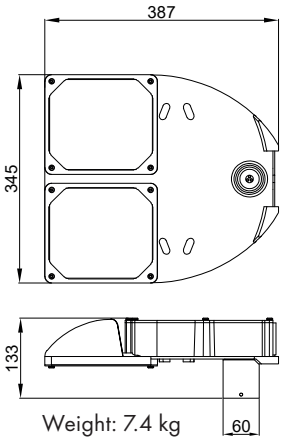
Weight: 5.7 kg
Packaging: 245x195x710

STREETEX-..-100...T



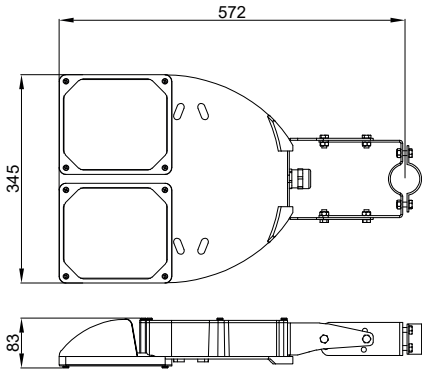
Weight: 7.4 kg
Packaging: 360x195x710

STREETEX-..-100...IX



Weight: 7.4 kg
Packaging: 360x195x710

STREETEX-..-100...



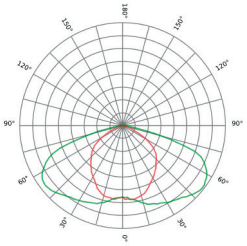
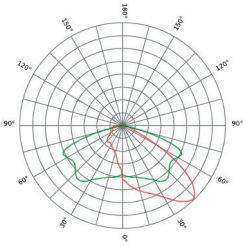
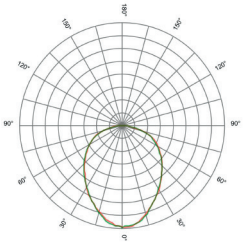
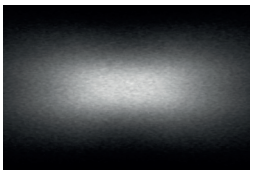
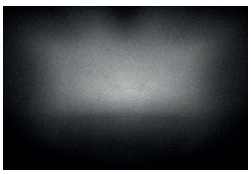
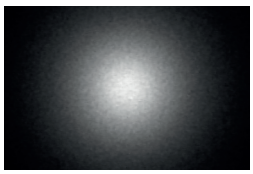
Weight: 8.3 Kg
Packaging: 360x195x710

Dimensions in mm

STREETEX Series LED street lighting fixtures

Electrical features	STREETEX-..080..	STREETEX-..100..
Supply voltage:	100-277 Vac	100-277 Vac
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%
Lamp power consumption*: * Test performed at 230 Vac	**..025** 25 W	**..200** 200 W
	..050 50 W	-
	..075 75 W	-
	..100 100 W	-
Connection:	Cable entry directly to the terminal board L, N, PE. Max. cross-section 4 mm²	
Power factor:	>0.95	>0.95
Rated current:	**..025** 117 mA	**..200** 860 mA
	..050 233 mA	-
	..075 350 mA	-
	..100 420 mA	-
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3	
THD (Total Harmonic Distortion):	THD: <10% (<8% for 230VAC)	
Over-voltage protection:	4 kV	4 kV
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection	
Dimming (on request for -MN version only):	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor
Photometric features		
Multichip LED:	High power LED	High power LED
Colour temperature:	5700 K	5700 K
CRI:	>70	>70
Instant Restrike:	YES	YES

Available optical features

Classification	IESNA /I	IESNA /III	IESNA /V
Photometrics			
Light distribution			
Light beam (beam)	• Full angle at 50% from the maximum point: ~ 115°x 155° • Full angle at 10% from the maximum point: ~ 140°x 160°	• Full angle at 50% from the maximum point: ~ 125°x 60° • Full angle at 10% from the maximum point: ~ 150°x 125°	• Full angle at 50% from the maximum point: ~ 90° • Full angle at 10% from the maximum point: ~ 160°
Description	Type I: extensive and symmetrical linear irradiation, with a large amount of light on both sides of the fixture. The width of the Type I light will be equal to the mounting height of the fixture.	Tipo III: oval irradiation with greater intensity at the front. The width of the Type III light is approximately 2.75 times wider than the mounting height of the fixture.	Type V: Circular irradiation, equal and uniform on all sides symmetrically, fixtures intended for installation in the centre of large areas to be illuminated

ORDER CODE LOGIC

SREETEX-M [ ] [ ] [ ] - [ ] [ ]

STREETEX-M Fixed code

Installation zone
ME Zone 1, 2, 21, 22
MN Zone 2, 21, 22

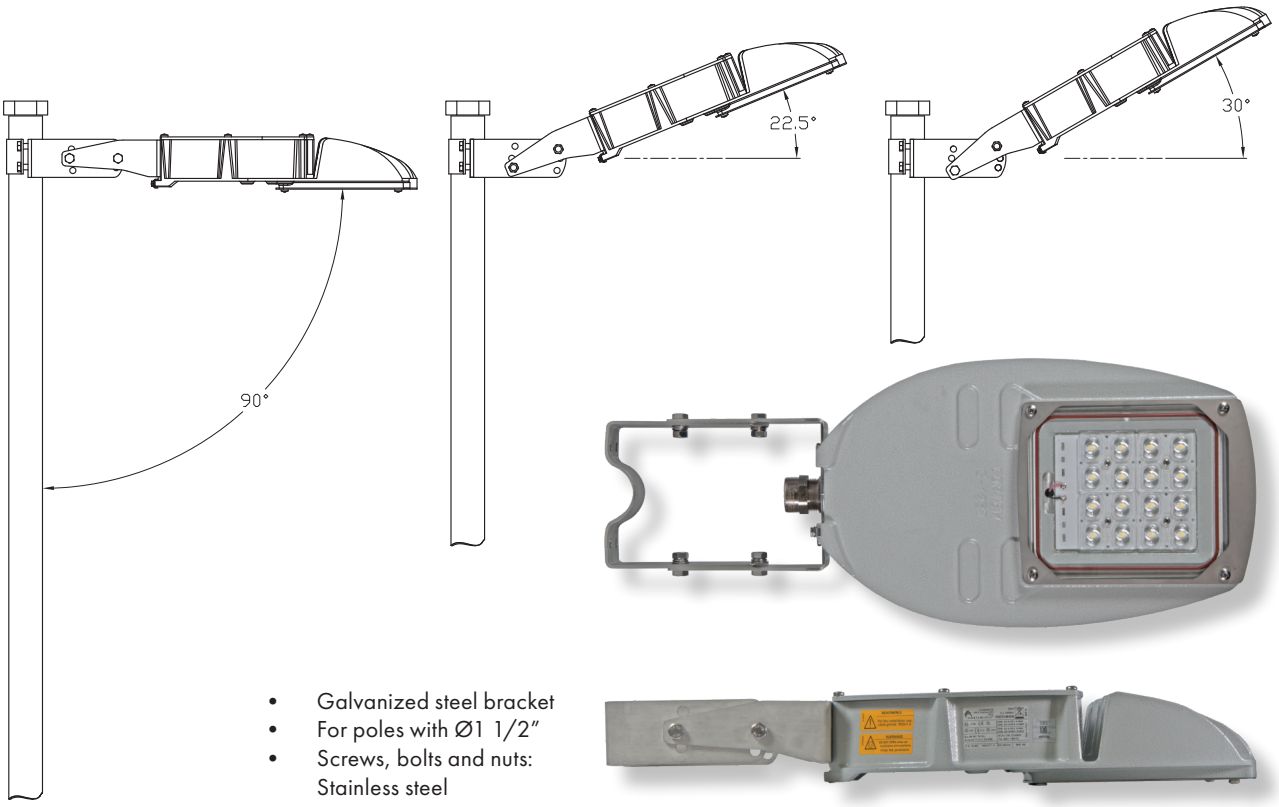
Lighting fixture size
080 Dimensions for 25W, 50W, 75W, 100W
100 Dimensions for 200W

Lighting fixture power
25 for 25W
50 for 50W,
75 for 75W
100 for 100W
200 for 200W

Fixing type
n.d. Galvanized steel bracket
T Horizontal pole connection
IX Vertical pole connection

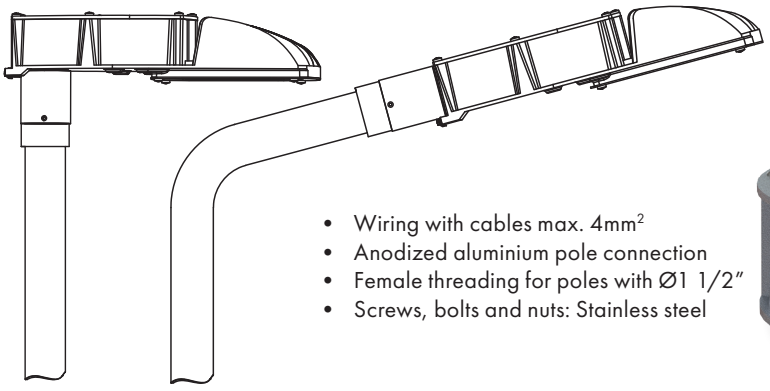
Available optics (IESNA classification)
n.d. std. IESNA /I
/III std. IESNA /III
/V std. IESNA /V

Pole installation system with bracket



- Galvanized steel bracket
- For poles with Ø1 1/2"
- Screws, bolts and nuts: Stainless steel

Installation systems with direct pole connection



- Wiring with cables max. 4mm²
- Anodized aluminium pole connection
- Female threading for poles with Ø1 1/2"
- Screws, bolts and nuts: Stainless steel

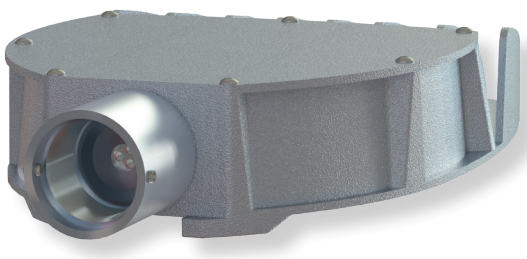
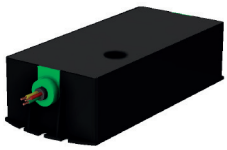
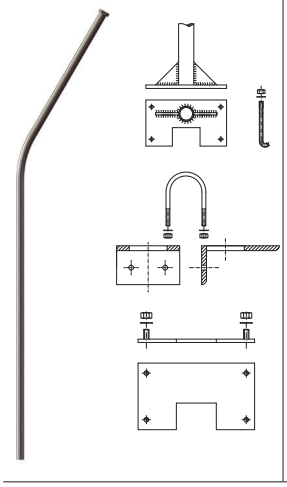
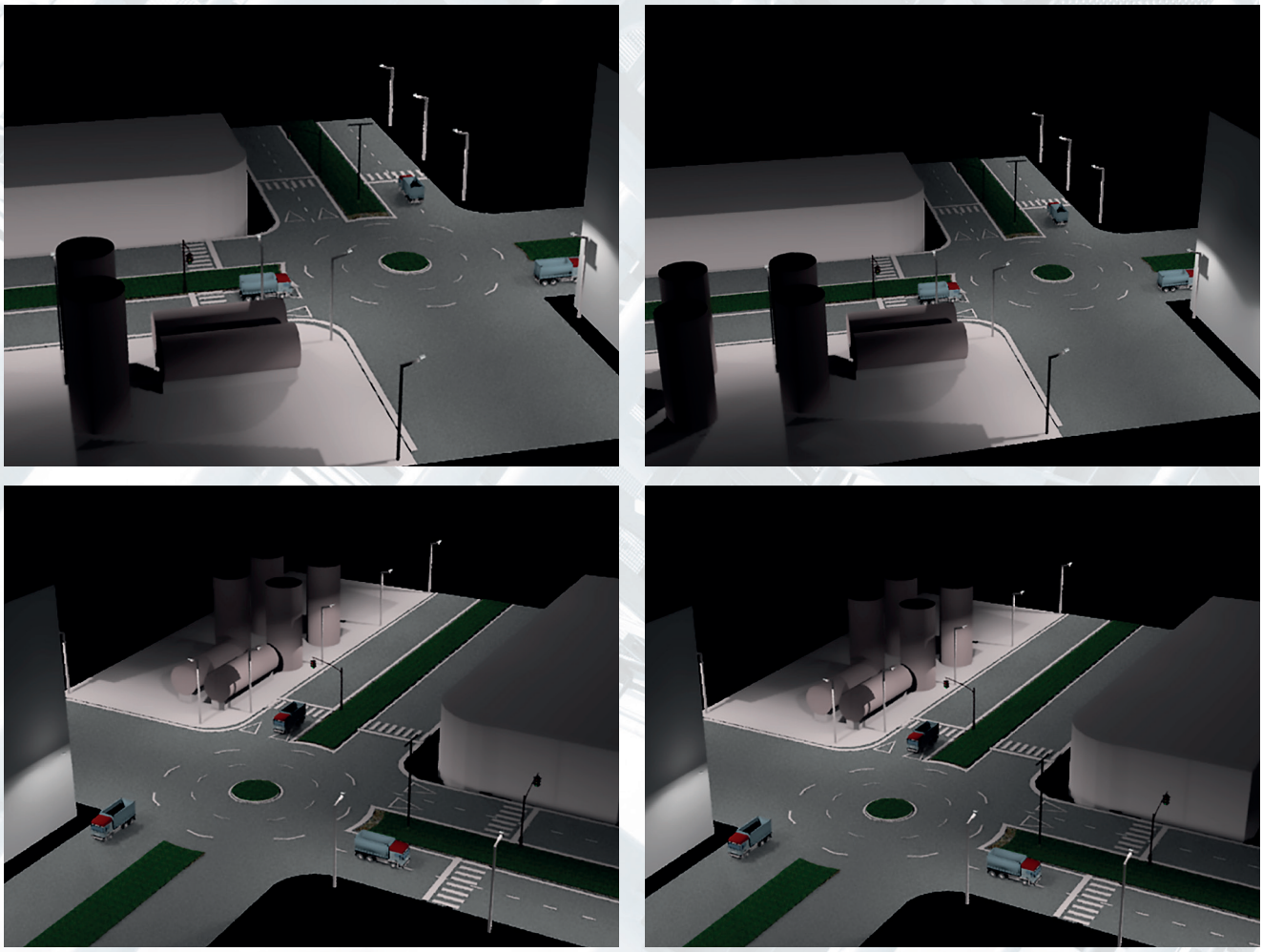


ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Resin electronic power unit	STREETEX-ME-080025...	100-277 Vac	**EBM-50C/1000**	SPARE PART
		STREETEX-ME-080050...		**EBM-50C/1000**	
		STREETEX-ME-080075...		**EBM-75C/1500**	
		STREETEX-ME-080100...		**EBM-100C/1000**	
		STREETEX-ME-100200...		**EBM-240C/2000**	
	Electronic power unit	STREETEX-MN-080025...	100-277 Vac	**LEDDEVL060/2**	SPARE PART
		STREETEX-MN-080050...		**LEDDEVL060/2**	
		STREETEX-MN-080075...		**LEDDEVL070/1**	
		STREETEX-MN-080100...		**LEDDEVL080/4/8**	
		STREETEX-MN-100200...		**LEDDEVL100/1/10**	
	Adjustable pole mounting bracket for Ø1 1/2" poles	STREETEX-M...	Galvanized steel	**G-0716**	SPARE PART
	Internal cable gland with cable sealing ring	STREETEX-M...-T STREETEX-M...-IX	Aluminium cable clamp body complete with sealing rings for 3 or 6 cables of max. 4mm²	**G-0713**	SPARE PART
	Cable gland for non-armoured cable	STREETEX-M... (version with bracket)	std. cable range 11-20	**NAV25IB**	SPARE PART
	Electrical connectors	STREETEX-M... (version with bracket)	For models and codes, visit www.cortemgroup.com	**FASTEX...**	ACCESSORIO RICAMBIO
	Junction box at pole base complete with terminals for cable connection	STREETEX-M...	For selection of junction boxes and electrical fittings, see www.cortemgroup.com		ACCESSORY SPARE PART
	Poles for different light point heights and different installation types (base plate with counter plate and anchor bolts, on structure with UBD, with counter plate for base plate mounting, etc.)	STREETEX-M...	Material: hot-dip galvanized steel	For more information, please contact the sales department	ACCESSORY SPARE PART

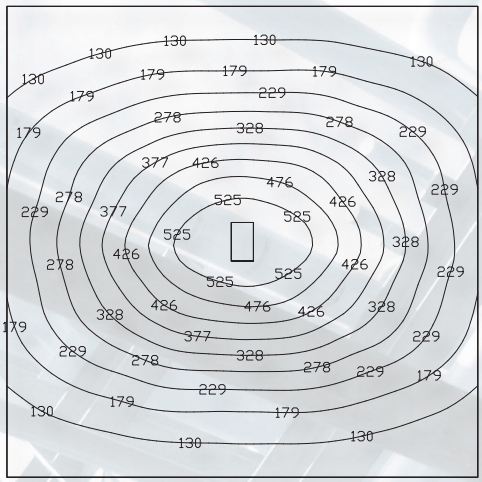
Example of photometric study

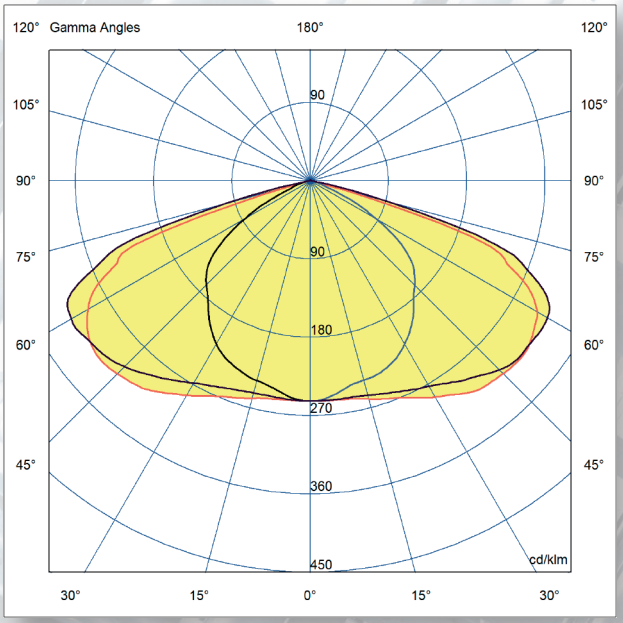
STREETEX-MN-100200 Street lighting fixtures installed on pole and wall.



Examples of outdoor installation-street and perimeter lighting on the basis of customer requirements.

Floor lighting relating to **STREETEX-ME-080100** expressed in lux in a 5m x 5m room with fixture in the centre, at a height of **3 m**.





The lighting solution files for the design, planning and simulation of lighting levels in 2D-3D, rendering and ray-tracing are available from www.cortemgroup.com.

= level 90270

= level 0180

EVE-L

- **Zone 1, 2, 21, 22**
- **Saving in energy, maintenance and installation costs**
- **Instant illumination (LED)**
- **Designed to last over time**

Electronic LED lighting system

4 Joule shock resistant borosilicate glass globe

Bright comfort

Stainless Steel Protective guard

EVE...L series Lighting Fixture with LED

EVE-5050L, EVE-5060L and EVE-5060L1 series Cortem lighting fixtures are designed to provide an optimal replacement to the conventional incandescent lamps and to provide a valid alternative for the energy-saving lamps in hazardous areas where it's necessary to light up using light sources close to the operator and to the equipment.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Fuel depots | Fuel tanker loading/ unloading areas | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex de IIC T6 Gb - Ex tb IIIC T85°C Db IP66			
Certification:	ATEX CESI 12 ATEX 006			
	IEC Ex IECEx CES 07.0004	All IEC Ex and TR CU certification data can be downloaded at www.cortemgroup.com		
	TR CU AVAILABLE			
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-7: 2007, EN 60079-31: 2009 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-1: 2007, IEC 60079-7: 2007, IEC 60079-31: 2008 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	80°C (T6)			
Ambient temperature:	EV..5060L1 -20°C +40°C	EV..5050L EV..5060L -20°C +50°C		
Degree of protection:	IP66			

EVE...L series Lighting Fixture with LED

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
Globe:	Shock and temperature resistant borosilicate glass with aluminium shade ring
Gaskets:	Silicone acid/hydrocarbon resistant
Guard:	Electro-polished stainless steel. Can also be supplied on request without a guard as the lighting fixture has passed the glass breakage test (4 Joule EN60079-0 / IEC60079-0)
Mounting:	See "EV series dimensional drawings"
Bolts and screws:	Stainless steel
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

LED:	n. 3 LEDs for EVE-5050L, n. 7 LEDs for EVE-5060L and EVE-5060L1
Rated voltage:	230 Vac/dc, 110/230 Vac/dc only for EVE-5050L
Rated frequency:	50/60 Hz
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2

Section view EVE-5050L

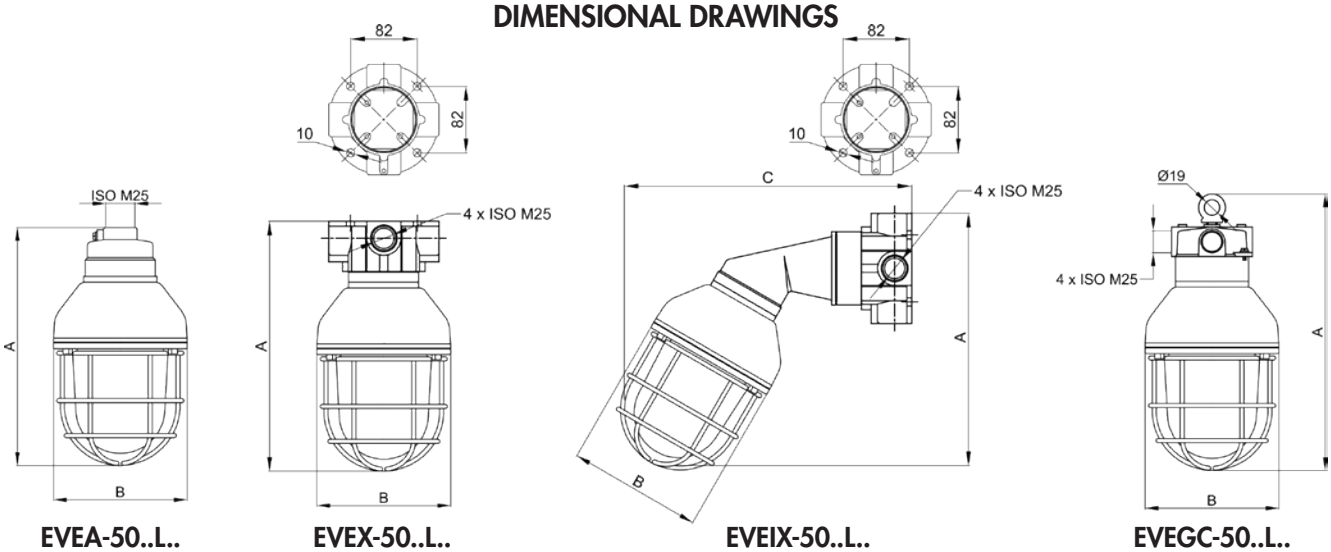
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: NEV20SIB for armoured cable or NAV20SIB for non-armoured cable.
Special request Ex 2GD Ex d IIC T6 Gb Ex tb IIIC T85°C IP66 . Code example: EVA-5050L
Rated voltage: 24 Vac/dc (code EV..-5050L/**24**)

EVE...L series Lighting Fixture with LED selection chart

Code	Dimensions mm			Lamp type	Watt	Class Ta =+40°C	Max surface temperature °C	Weight kg	mm
	A	B	C						
EVEA-5050L	261	150	-	LED	8	T6	51	2,6	160x150x330
EVEA-5060L	323	170	-	LED	13	T6	54	3,2	190x170x390
EVEA-5060L1	323	170	-	LED	17	T6	57	3,2	190x170x390
EVEX-5050L	260	150	-	LED	8	T6	51	3,0	160x150x330
EVEX-5060L	322	170	-	LED	13	T6	54	3,9	190x170x390
EVEX-5060L1	322	170	-	LED	17	T6	57	3,9	190x170x390
EVEIX-5050L	285	150	310	LED	8	T6	51	3,5	190x170x390
EVEIX-5060L	339	170	344	LED	13	T6	54	4,1	260x210x490
EVEIX-5060L1	339	170	344	LED	17	T6	57	4,1	260x210x490
EVEGC-5050L	296	150	-	LED	8	T6	51	2,8	160x150x330
EVEGC-5060L	358	170	-	LED	13	T6	54	3,6	190x170x390
EVEGC-5060L1	358	170	-	LED	17	T6	57	3,3	190x170x390

DIMENSIONAL DRAWINGS

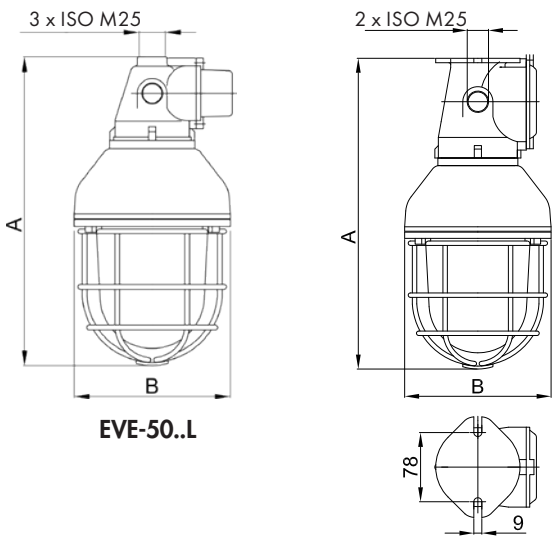


EVEA-50..L.. EVEX-50..L.. EVEIX-50..L.. EVEGC-50..L..

Lighting fixtures for loop-in/loop-out execution

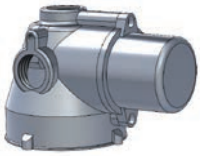
Code	Dimension mm		Watt	Weight kg	mm
	A	B			
EVE-5050L	300	150	8	2,7	160x150x330
EVE-5060L	358	170	13	4,0	190x170x390
EVE-5060L1	358	170	17	4,1	190x170x390
EVES-5050L	325	150	8	2,7	160x150x330
EVES-5060L	384	170	13	4,0	190x170x390
EVES-5060L1	358	170	17	4,1	190x170x390

DIMENSIONAL DRAWINGS



EVE-50..L EVES-50..L

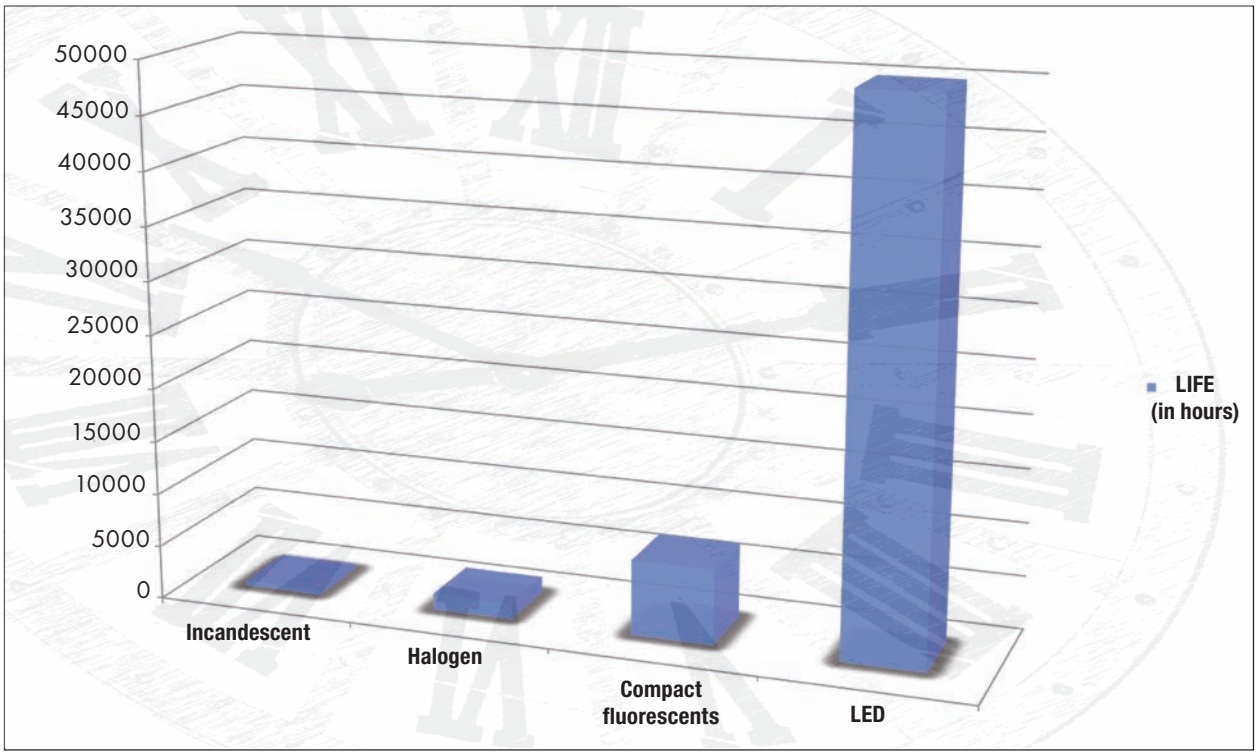
EVE...L series Accessories and spare parts available on request

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	LED plate with electronic circuit complete with diffuser, heat dissipator and frame.	EVE-5050L	n. 3 power LEDs. Diffuser in polycarbonate. Aluminium dissipator and frame	**G-0571/1**	SPARE PART
		EVE-5060L EVE-5060L1	n. 7 power LEDs. Diffuser in polycarbonate. Aluminium dissipator and frame	**G-0572/1**	SPARE PART
	Power supply electronic	EVE-5050L	90 - 264 Vac 50/60 Hz	**RT-6LED**	SPARE PART
		EVE-5060L	220 - 240 Vac 50/60 Hz	**RV-16LED**	SPARE PART
		EVE-5060L1	220 - 240 Vac 50/60 Hz	**RV-17LED**	
	Protective guard	EVE-5050L	Material: electro-polished stainless steel	**G50-0417**	SPARE PART
		EVE-5060L		**G60-0417**	
	OR gasket	Globo 50	Materiale: NBR	**OR-4512SH70**	SPARE PART
		Globo 60		**K15-131**	
	Ex e pendant mounting EVE		3 x ISO M25	**G-0444**	SPARE PART
	Ex e pendant mounting EVES		2 x ISO M25	**G-0439**	SPARE PART
	Globe with shade ring	EVE-5050L	Borosilicate glass globe Threaded aluminium shade ring	**G50-0440CM**	SPARE PART
		EVE-5060L		**G60-0440CM**	
	Pendant eyebolt		Material: galvanised steel	**GOF-8**	SPARE PART

EVE...L series Accessories and spare parts available on request

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Pendant mounting EVEA		1 x ISO M25	**G-0213I**	
	Pendant mounting with eyebolt EVEGC		4 x ISO M25	**G-0216I**	
	Ceiling mounting EVEX		4 x ISO M25	**G-0214I**	
	Wall mounting with bracket EVEIX		4 x ISO M25	**G-0215I**	
	Reflector	EVE-5050L	White painted aluminium Stainless steel	**G50-427 G50-427IN**	
		EVE-5060L..	White painted aluminium Stainless steel	**G60-427 G60-427IN**	
	Dome reflector	EVE-5050L	Contact our Sales Office for availability		
		EVE-5060L..	White painted aluminium	**G60-427D**	
	30° inclined dome reflector	EVE-5050L	Contact our Sales Office for availability		
		EVE-5060L..			
	Cable gland		For models and codes, visit www.cortemgroup.com	**NAV25IB NEV25IB**	
	Articulated bracket for sloping mounting (have a look at installation and mounting methods)		Material: galvanised steel	**G-0543**	
	Warning signs on the frame	On request	Materials: translucent film on plexiglass and aluminium frame	**G-0513**	

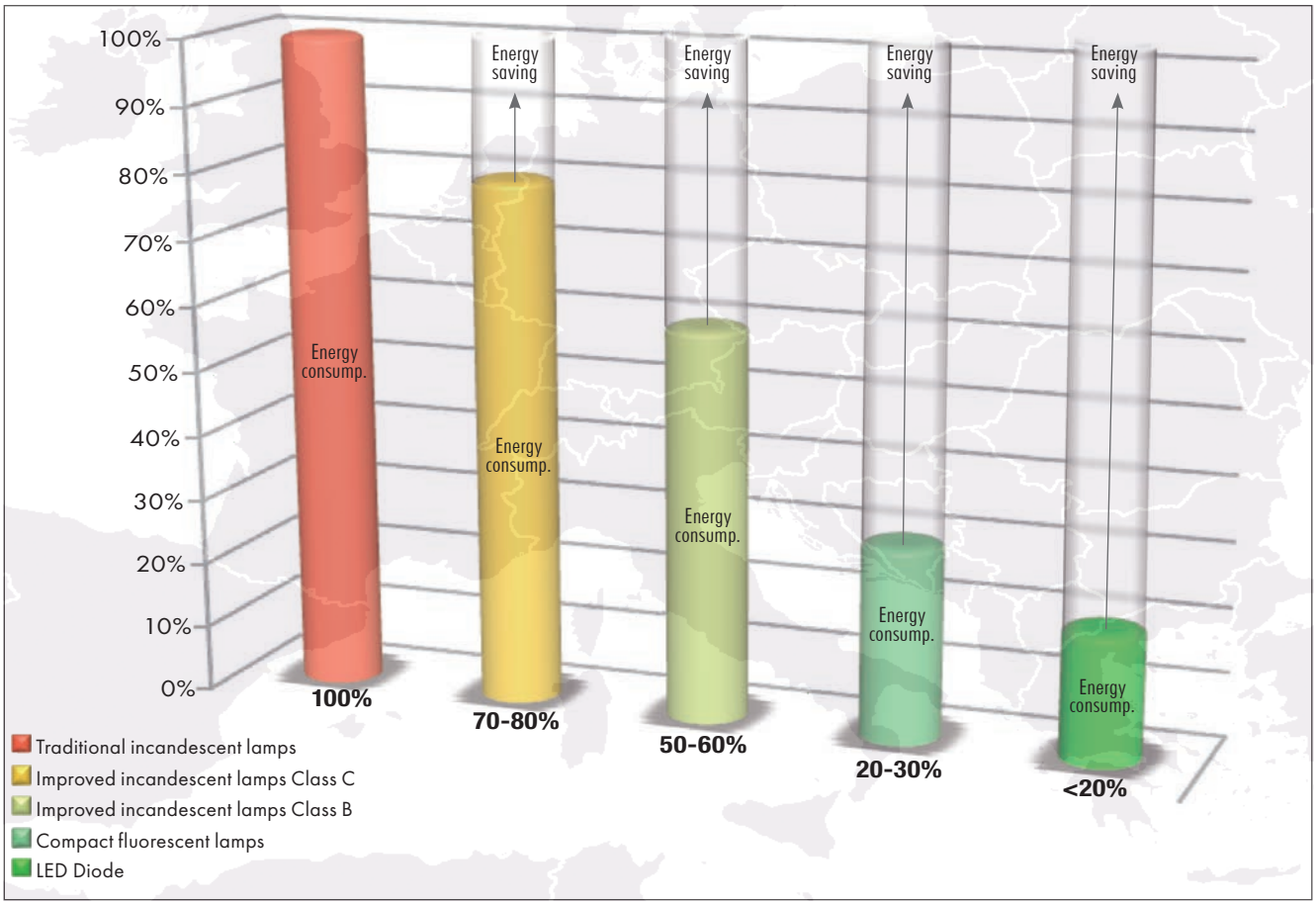
Estimate of average life period between several types of lamps



The respect of two basic conditions, the internal temperature and the intensity of current, guarantees a life of LEDs equal to 100,000 hours.

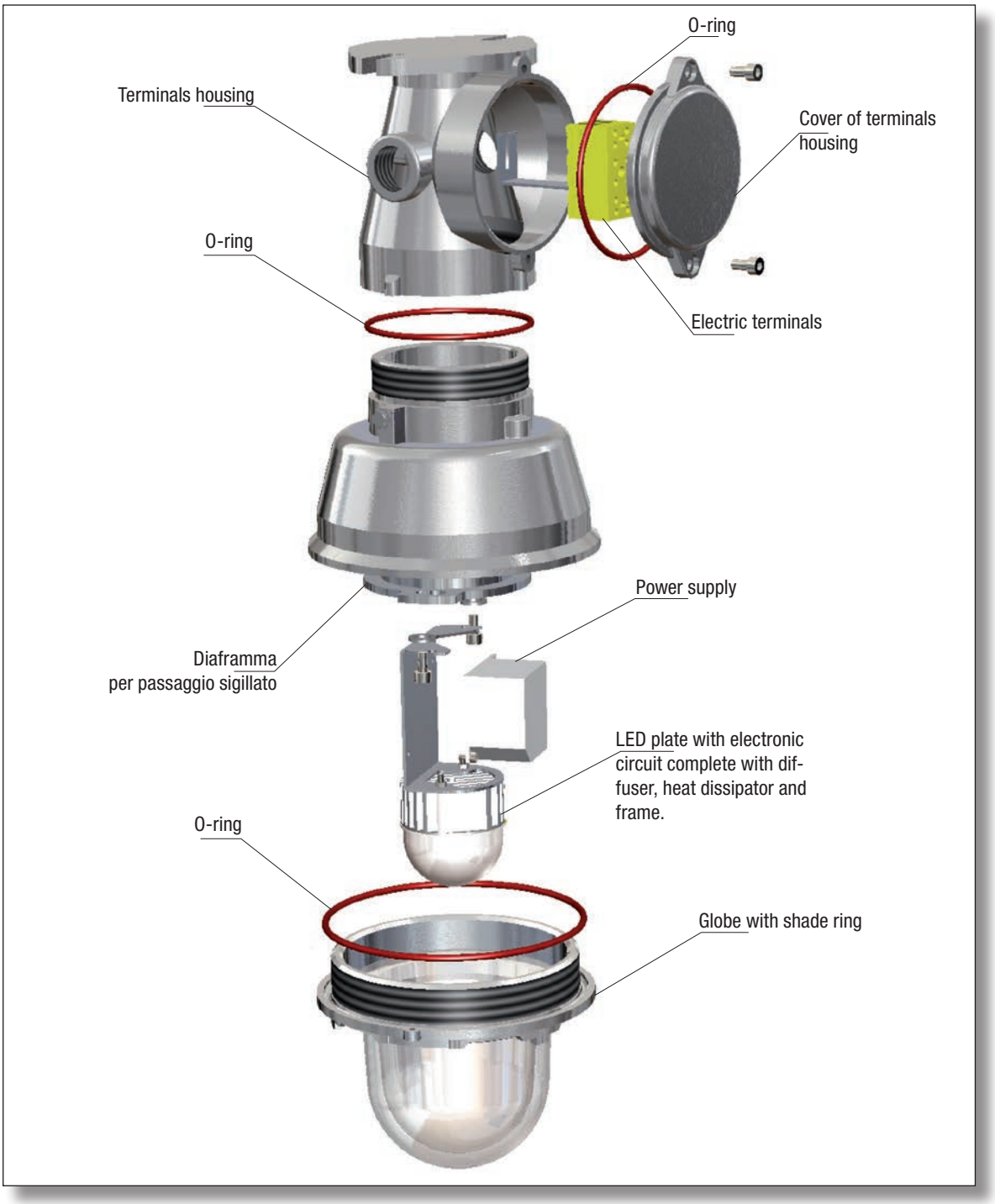
Comparison of consumption between different types of lamps

The return investment is 18 to 24 months without considering the savings in maintenance costs.

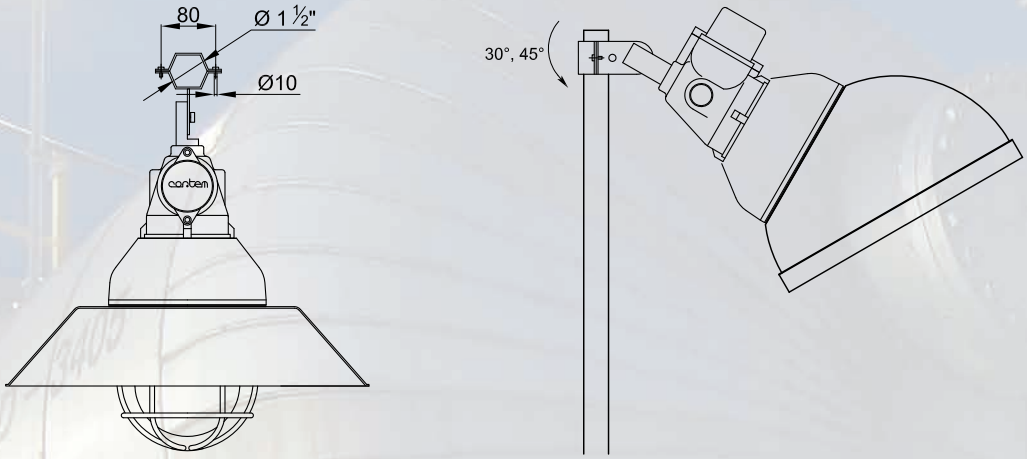


CORTEM GROUP®

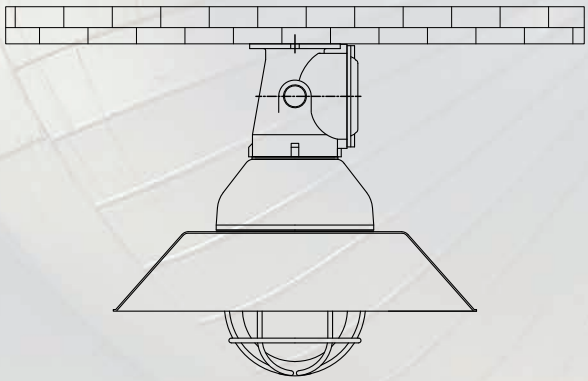
EXPLODED DIAGRAM OF EVE-5050L LIGHTING FIXTURES



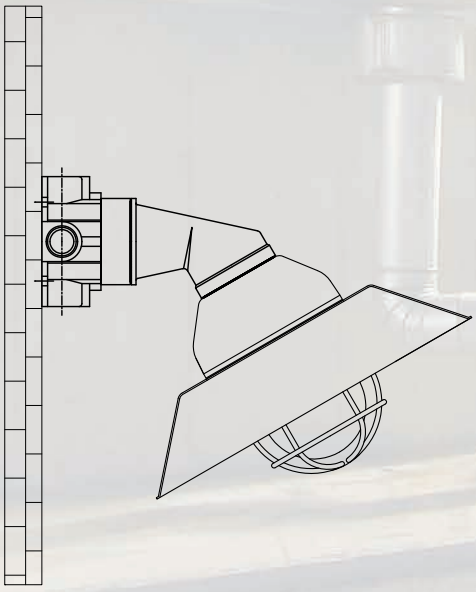
Example of mounting with articulated bracket



Example of ceiling mounting with lighting fixture for loop-in / loop-out



Example of wall mounting



Dimension in mm

EVE-5050L, PEACK CD EQUIVALENTS

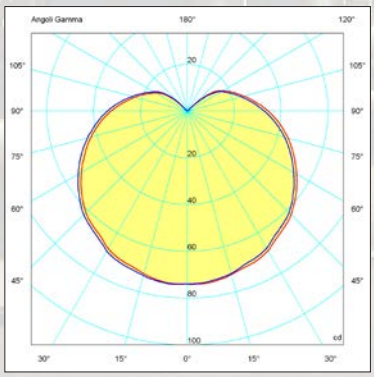
			
EVE-5050L (8W) LED	EVA (15W) Fluorescent	EVA (50W) Halogen	EVA (75W) Incandescent

EVE-5060L, PEACK CD EQUIVALENTS

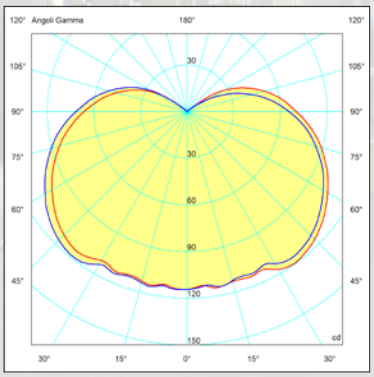
			
EVE-5060L (13W) LED	EVA (30W) Fluorescent	EVA (110W) Halogen	EVA (150W) Incandescent

EVE-5060L1, PEACK CD EQUIVALENTS

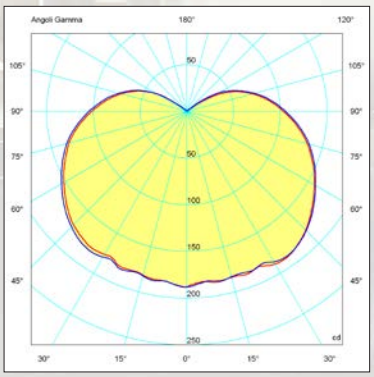
			
EVE-5060L1 (17W) LED	EVA (40W) Fluorescent	EVA (150W) Halogen	EVA (200W) Incandescent



EVE-5050L Luminous flux: 430 lm



EVE-5060L Luminous flux: 795 lm



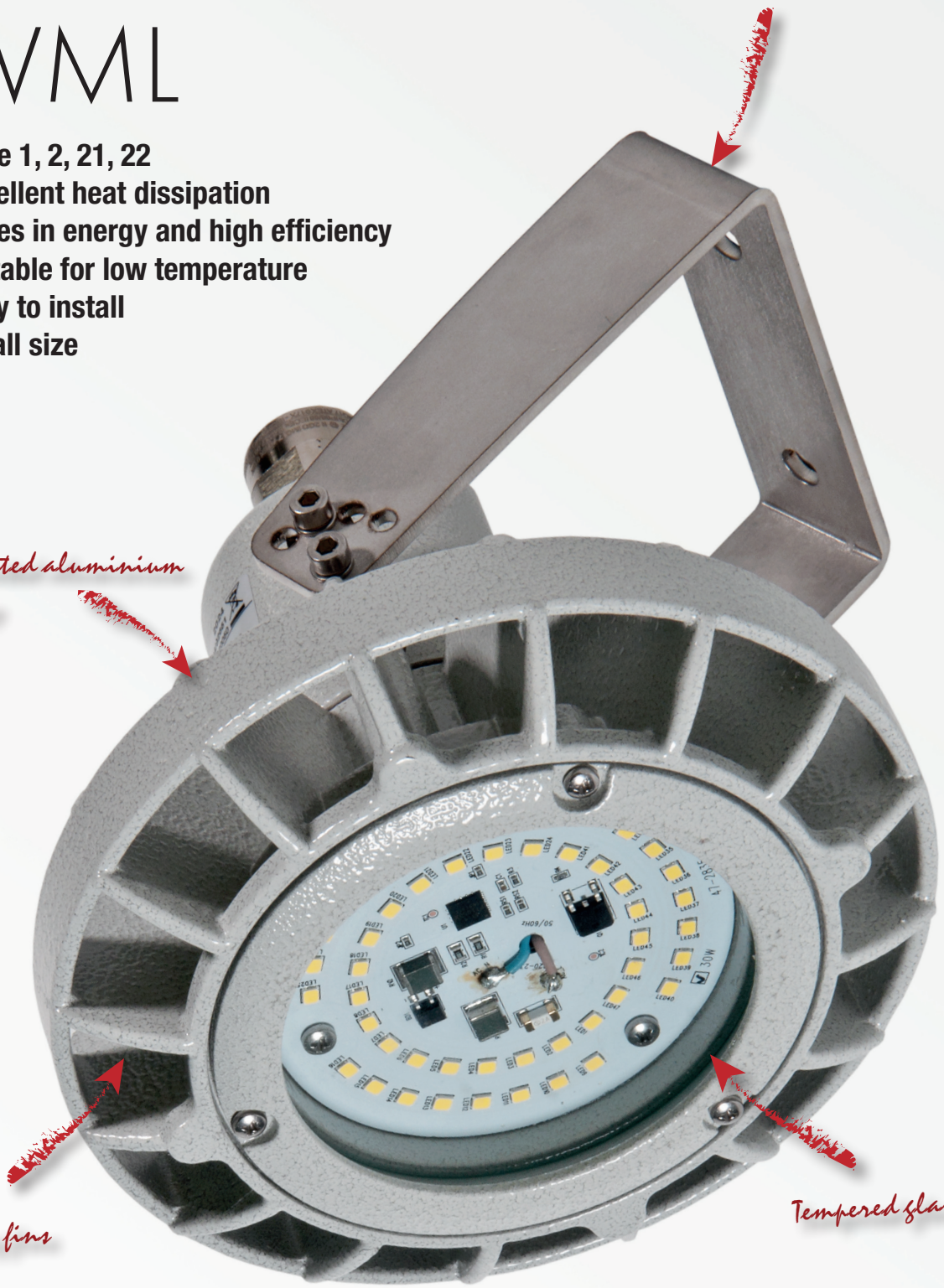
EVE-5060L1 Luminous flux: 1200 lm

On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

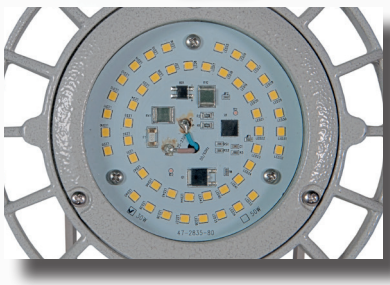
= plane 90270
= plane 0180

EVML

- Zone 1, 2, 21, 22
- Excellent heat dissipation
- Saves in energy and high efficiency
- Suitable for low temperature
- Easy to install
- Small size

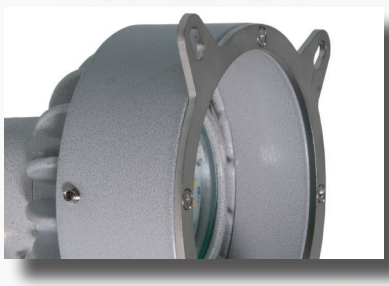


LED resin-bonded electronic board



Orientable bracket detail

Lighting fixture with round windows detail



EVML Low Bay LED lighting fixture

EVML lighting fixtures have been designed to offer a Low Bay lighting fixture that could replace incandescent equivalents with lower costs. They are suitable for the illumination of areas in which it's necessary to limit the obstruction such as tunnels, passages, corridors, stairways and command and control cabins (code EVML-ME-060...). They can also be used to illuminate and monitor hazardous materials contained inside tanks and cisterns thanks to a bracket for the coupling with the porthole flange (code EVML-ME-050...-O..). The model with the side entry meets, at last, some specific installation needs, reducing the overall dimensions (code EVML-ME-060...L).
The Low Bay LED lighting fixtures has been specifically designed to meet the technical requirements of LEDs. In effect, the body fins act as a heat dissipater for the LED plate meaning that more powerful lighting can be installed without causing any deterioration of the LEDs. The universal steel mounting bracket complies with all application requirements and it allows the directionality of the light and an easy installation at low heights in all those areas defined as dangerous for the presence of explosive gas and dust as Zone 1, 2, 21, 22. The protective flat glass is resistant to impact and high temperatures and ensures non polluting illumination to the surrounding environment.

Application sectors:

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex eb mb IIC T.. Gb - Ex tb IIIC T..°C Db IP66			
Certification:	ATEX CML 19 ATEX 3019X			
	IEC Ex IECEx CML 19.0003X	All IEC Ex certification data can be downloaded at www.cortemgroup.com		
Standards:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015-18, EN 60079-18: 2015-17, EN 60079-31: 2024 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-7: 2017, IEC 60079-18: 2014-17, IEC 60079-31: 2022 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	See selection table EVML			
Ambient temperature:	-60°C +40°C	-60°C +50°C	-60°C +60°C	
Degree of protection:	IP66			

EVML Low Bay LED lighting fixture

EVML-ME-060..

EVML-ME-060..L..

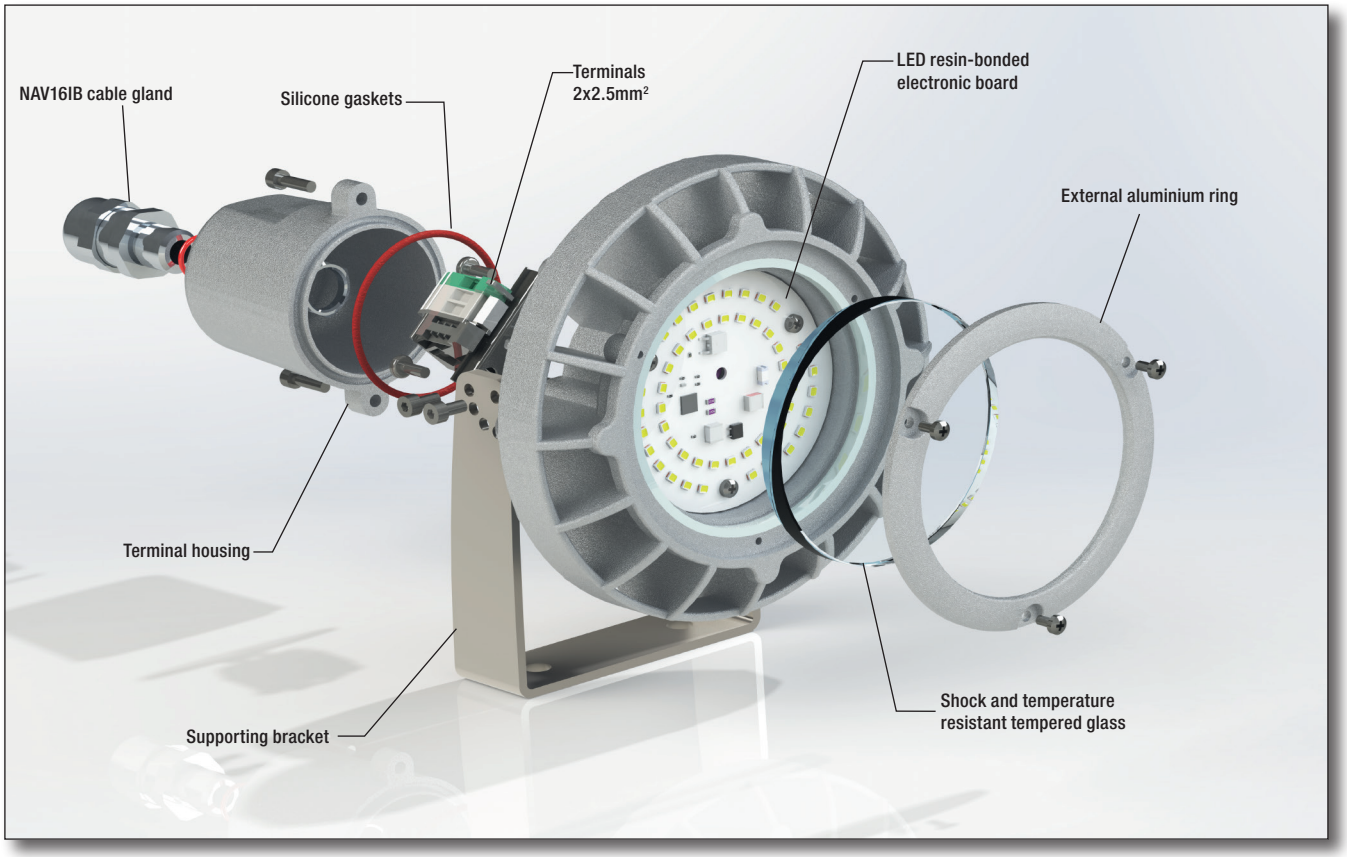
EVML-ME-050..O..

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face:	Shock and temperature resistant tempered glass
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Supporting brackets:	Stainless steel AISI 316L
Bolts and screws:	Stainless steel
Entries:	1 x ISO M16 entries. Fixture supplied with NAV16IB cable gland
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

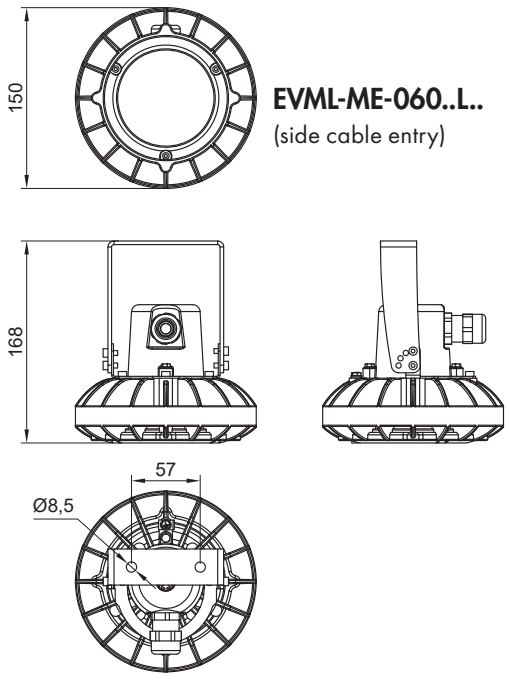
EXPLODED DIAGRAM OF EVML-ME-060.. LIGHTING FIXTURE



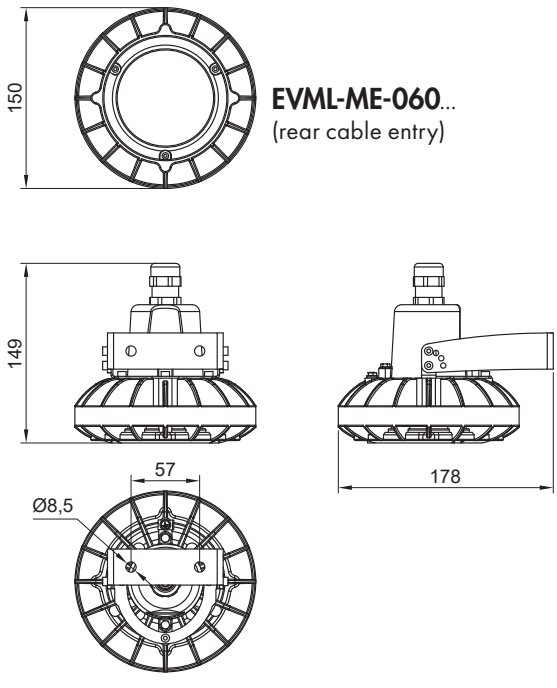
EVML-ME-060.. series selection chart

Code	Watt	Supply voltage	Class temperature			Weight kg	mm
			Ta <+40°C	Ta <+50°C	Ta <+60°C		
EVML-ME-060015	15 W	230 Vac	T4/95°C	T4/105°C	T4/115°C	1,2	180x170x170
EVML-ME-060015-12	15 W	12 Vac/dc	T6/66°C	T6/76°C	T5/86°C	1,2	180x170x170
EVML-ME-060015-24D	15 W	24 Vdc	T6/66°C	T6/76°C	T5/86°C	1,2	180x170x170
EVML-ME-060015-24A	15 W	24 Vac	T6/64°C	T6/74°C	T5/84°C	1,2	180x170x170
EVML-ME-060015-48D	15 W	48 Vdc	T5/81°C	T5/91°C	T4/101°C	1,2	180x170x170
EVML-ME-060015-48A	15 W	48 Vac	T6/77°C	T5/87°C	T4/97°C	1,2	180x170x170
EVML-ME-060015-110	15 W	110 Vac/dc	T6/64°C	T6/74°C	T5/84°C	1,2	180x170x170
EVML-ME-060030	30 W	230 Vac	T5/91°C	T4/101°C	T4/111°C	1,2	180x170x170
EVML-ME-060050	50 W	230 Vac	T5/91°C	T4/101°C	T4/111°C	1,2	180x170x170

DIMENSIONAL DRAWINGS



EVML-ME-060..L..
(side cable entry)

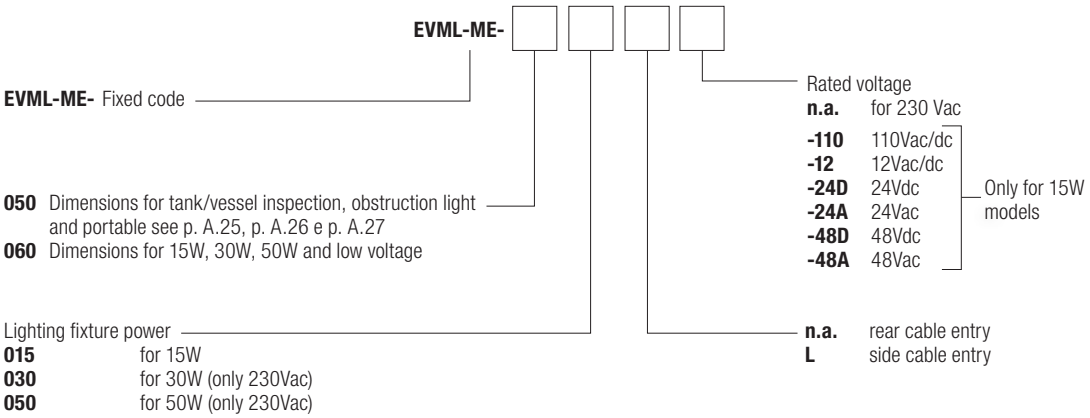


EVML-ME-060...
(rear cable entry)

EVML Low Bay LED lighting fixture

Electrical features	EVML-ME-060015 EVML-ME-050015..	EVML-ME-060030	EVML-ME-060050
Power supply:	230 Vac	230 Vac	230 Vac
Rated frequency:	50-60 Hz	50-60 Hz	50-60 Hz
Rated power:	15 W	30 W	50 W
Connection:	Direct connection to terminal board L, N, Pe. Section 2,5mm^2		
Power factor:	>0,95	>0,95	>0,95
Rated current:	0,07 A	0,13 A	0,23 A
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...		
THD (total harmonic distortion):	<25%	<25%	<25%
Over-voltage protection:	0,5 kV	1 kV	1 kV
Photometric features			
LED Multichip:	Mid power	Mid power	Mid power
Viewing angle:	120°	120°	120°
Colour temperature:	5000 K	5000 K	5000 K
CRI:	80	80	80
Instant Restrike:	YES	YES	YES
L70:	> 60.000 hours		
Lumen:	**1847 lm**	**2913 lm**	**4023 lm**
Maximum light intensity:	**749 cd**	**1234 cd**	**1705 cd**
Overall efficiency:	**124 lm/W**	**99 lm/W**	**78 lm/W**

ORDER CODE LOGIC



EVML LOW VOLTAGE

EVML-ME-060015...

Electrical features	...-12	...-24D	...-24A	...-48D	...-48A	...-110
Power supply:	12 Vac/dc	24 Vdc	24 Vac	48 Vdc	48 Vac	110Vac/dc
Rated frequency:	50-60 /0 Hz	0 Hz	50-60 Hz	0 Hz	50-60 Hz	50-60 Hz
Rated power:	15 W	15 W	15 W	15 W	15 W	12 W
Connection:	Direct connection to terminal board L, N, Pe. Section 2,5 mm^2					
Power factor:	>0,95	-	>0,95	-	>0,95	>0,96
Rated current:	1,47 A	630 mA	540 mA	307 mA	318 mA	100 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...					
THD (total harmonic distortion):	<25%					
Over-voltage protection:	0,5 kV	0,5 kV	0,5 kV	0,5 kV	0,5 kV	0,5 kV
Photometric features						
LED Multichip:	Mid power	Mid power	Mid power	Mid power	Mid power	Mid power
Viewing angle:	120°	120°	120°	120°	120°	120°
Colour temperature:	5000 K	5000 K	5000 K	5000 K	5000 K	5000 K
CRI:	80	80	80	80	80	80
Instant Restrike:	YES	YES	YES	YES	YES	SI
Lumen:	**1365 lm (dc)**	**1458 lm**	**1092 lm**	**1361 lm**	**1256 lm**	**720 lm**
Maximum light intensity:	**565 cd (dc)**	**371 cd**	**368 cd**	**569 cd**	**373 cd**	**287 cd**
Overall efficiency:	**88 lm/W (dc)**	**97 lm/W**	**91 lm/W**	**96 lm/W**	**90 lm/W**	**60 lm/W**

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

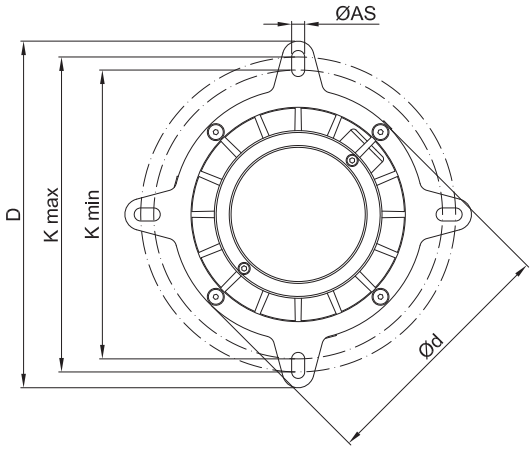
U bolt for pole mounting
Different colour temperature (code EVML-060....**-..K**)

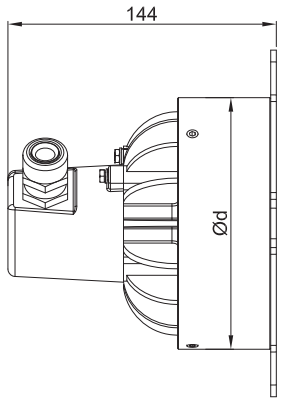
EVML-ME-050015-..-O.. TANK/VESSEL INSPECTION LIGHTING FIXTURES

Code	Kmax	Kmin	ØAS	D	Ød	Round window acc. DIN28120
EVML-ME-050015-...-O10 ①	169	155	7	186	135	100
EVML-ME-050015-...-O12 ②	194	180	7	211	160	125
EVML-ME-050015-...-O15 ③	222	208	9	243	185	150
EVML-ME-050015-...-O20 ④	282	258	9	303	235	200

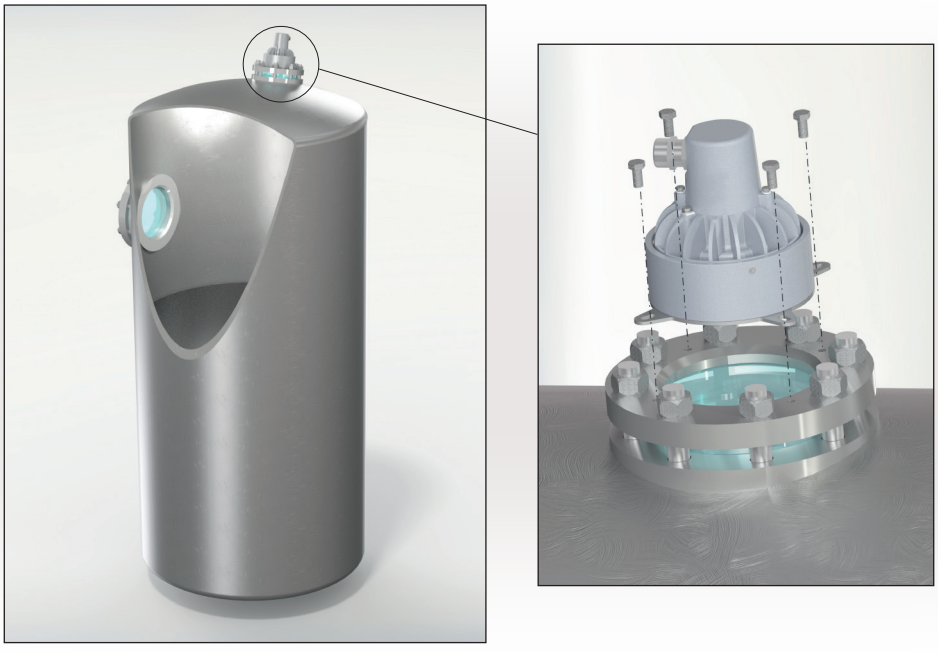
-...:	**No number**	For 230 Vac	**24A**	For 24 Vac
	110	For 110 Vac/dc	**48D**	For 48 Vdc
	12	For 12 Vac/dc	**48A**	For 48 Vac
	24D	For 24 Vdc		

DIMENSIONAL DRAWING





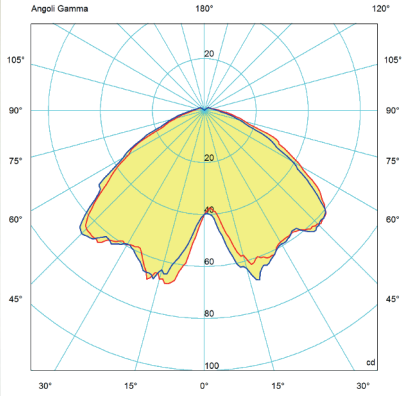
Application example made with EVML-ME-050015-O12 LED lighting fixtures with round windows

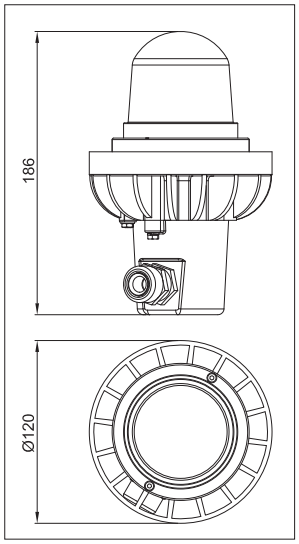


Obstruction lighting EVML-ME-050015-...-G...

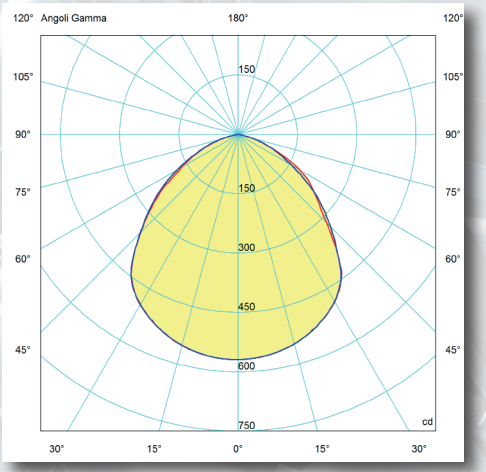
EVML-ME-050015-..-G.. are the new lighting fixtures which feature a LED plate and a globe of different colours: blue, red, green, amber or clear. They can be installed in locations where obstacles, dangers are needed to be signalled and for any visual communication. They replace acoustic signals in places where they are not applicable.

Code	Colour
EVML-ME-050015-...-GG	Amber
EVML-ME-050015-...-GR	Red
EVML-ME-050015-...-GV	Green
EVML-ME-050015-...-GB	Blue
EVML-ME-050015-...-GI	Clear

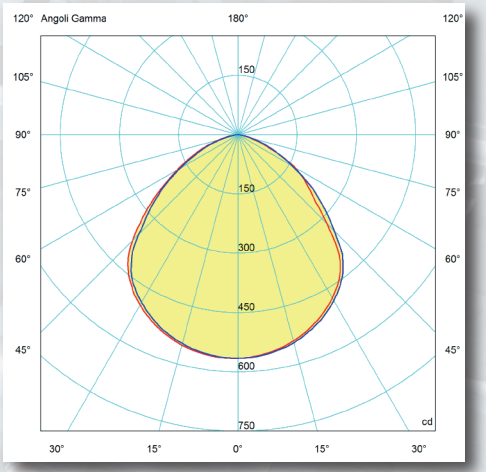




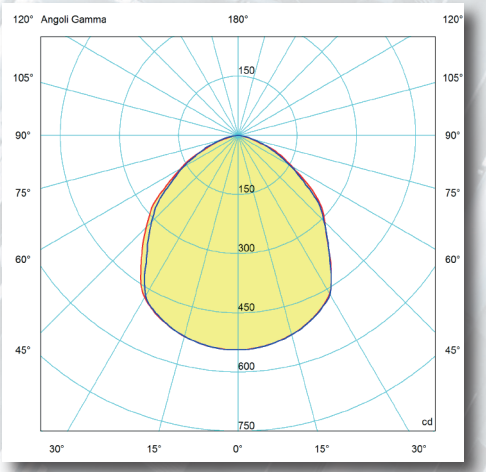
-...:	**No number**	For 230 Vac	**24A**	For 24 Vac
	110	For 110 Vac/dc	**48D**	For 48 Vdc
	12	For 12 Vac/dc	**48A**	For 48 Vac
	24D	For 24 Vdc		



EVML-ME-060015-48D
Luminous flux: 1361 lm

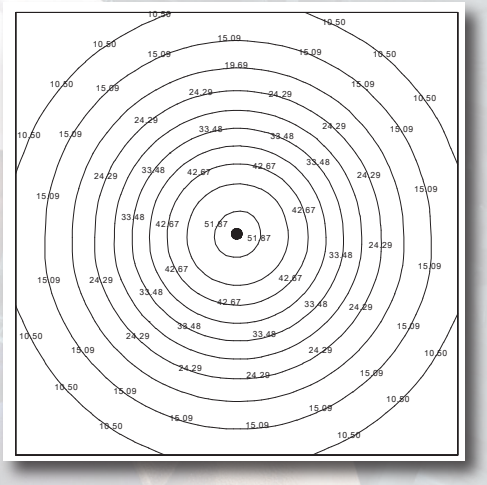


EVML-ME-060015-12
Luminous flux: 1365 lm



EVML-ME-060030
Luminous flux: 2913 lm

EVML-ME-060030 illumination on the floor expressed in lux in a room 5m x 5m with the lighting fixtures centrally placed at **2,5m** in height



On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

EVML-ME-050015P hand-held lighting fixture

The LED EVML-ME-050015P hand-held lighting fixture, powered with cable, has been designed to be used mainly in inspection and maintenance activities on industrial plants, in tanks and in all those places where there is a potentially dangerous atmosphere formed by gas and dust. The EVML-ME-050015P series hand-held lighting fixture is characterized by a non-slip handle and a high degree of body strength combined with excellent light performance. A further peculiarity of this hand-held lighting fixture is the possibility of being powered with different voltages at 12, 24, 48, 110 Vac/dc and 230 Vac for a wider use.

Classification: 2014/34/UE	Group II	Category 2GD
Installazion: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Execution:	CE 0722 Ex II 2GD Ex eb mb IIC T.. Gb Ex tb IIIC T..°C Db IP66	
Certificate:	ATEX CML 19 ATEX 3019X	
	IEC Ex IECEx CML 19.0003X	For all IEC Ex certification data, download the certificate from www.cortemgroup.com
Standard:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015-18, EN 60079-18: 2015-17, EN 60079-31: 2024 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-7: 2017, IEC 60079-18: 2014-17, IEC 60079-31: 2022 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS	
Temp. class:	See "selection table"	
Ambient temp.:	-60°C +40°C (+50°C +60°C)	
Protection rating:	IP66	

FEATURES

- Low copper content aluminium alloy fitted with cooling fins for better heat dissipation.
- Polyester coating Ral 7035.
- Shock and temperature resistant tempered glass.
- Non-slip black handle.
- High corrosion resistance.
- Suitable for offshore / onshore environments.
- Easy connection.
- Cable gland for non-armored cable NAV20IB, cable range 6.5 ÷ 14.

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

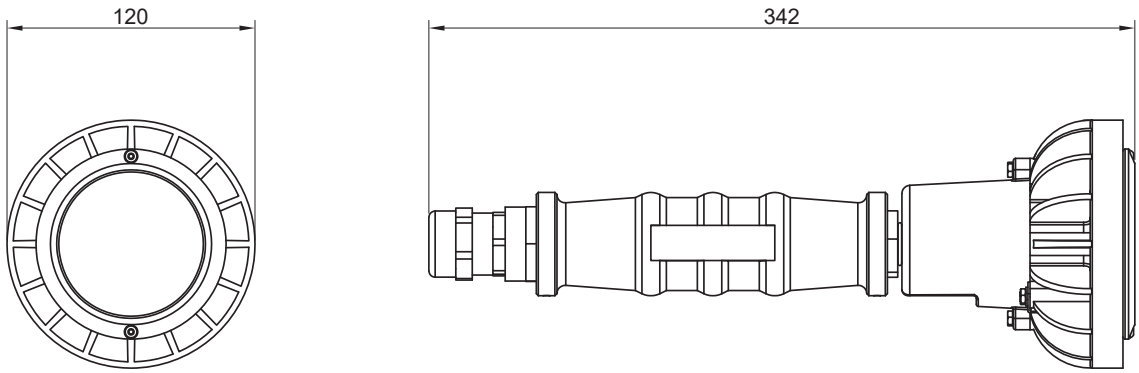
5 meters long cable and SPY series plug (example code EVML-ME-050015-24DP**T**)

Hook for hand-held lighting fixture (code G-1061)

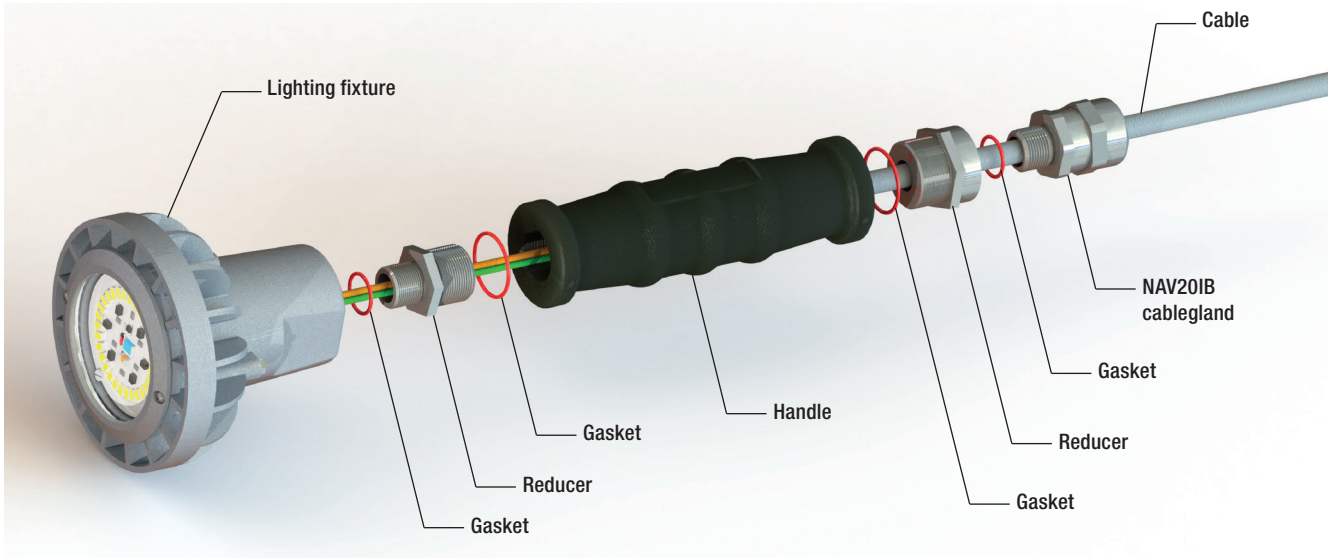
EVML-ME-050015P lighting fixture selection chart

Code	Watt	Supply voltage	Temperature class			Weight kg	mm
			Ta <+40°C	Ta <+50°C	Ta <+60°C		
EVML-ME-050015P	19 W	220-240 Vac	T5/95°C	T4/105°C	T4/115°C	1.4	
EVML-ME-050015-110P	12 W	110 Vac/dc	T6/64°C	T6/74°C	T5/84°C	1.4	
EVML-ME-050015-12P	18 W	12 Vac/dc	T6/66°C	T6/76°C	T5/86°C	1.4	
EVML-ME-050015-24DP	16 W	24 Vdc	T6/66°C	T6/76°C	T5/86°C	1.4	
EVML-ME-050015-24AP	13 W	24 Vac	T6/64°C	T6/74°C	T5/84°C	1.4	
EVML-ME-050015-48DP	15 W	48 Vdc	T5/81°C	T5/91°C	T4/101°C	1.4	
EVML-ME-050015-48AP	15 W	48 Vac	T6/77°C	T5/87°C	T4/97°C	1.4	

DIMENSIONAL DRAWING



EXPLODED DIAGRAM OF EVML-ME-050015P



MSU Signalling lightings

The MSU series signalling lighting equipment is designed to be used in hazardous areas as indicator of dangers and for any communication need, replacing also acoustic signals. It is a multi-unit device formed by a metal sheet base, fixable on walls, poles, etc., by EVML-ME-050015...G signalling lighting equipment and by an 'Ex e' aluminum junction box SA series. The EVML-ME-050015...G signalling lighting equipment are available with a LED and globe of different colours: blue, red, green, amber and clear.

FEATURES

- Pre-wired ready to use multi-signalling unit
- Corrosion resistant
- Coating RAL7035
- Suitable for offshore / onshore & harsh environments
- 'Ex e' termination area
- Quick and easy to terminate
- Cablegland NAV25IB, range cable 11 ÷ 20
- High ingress protection IP66
- Extreme temperature range -40°C...+60°C
- Light enhancing lens, 5 colour options
- Up to 5 beacon positions
- Power supply: 230 Vac
- Rated frequency: 50-60 Hz
- Lumen (single signal lamps): 1032 lm
- Max. light intensity (single signal lamps): 385 cd

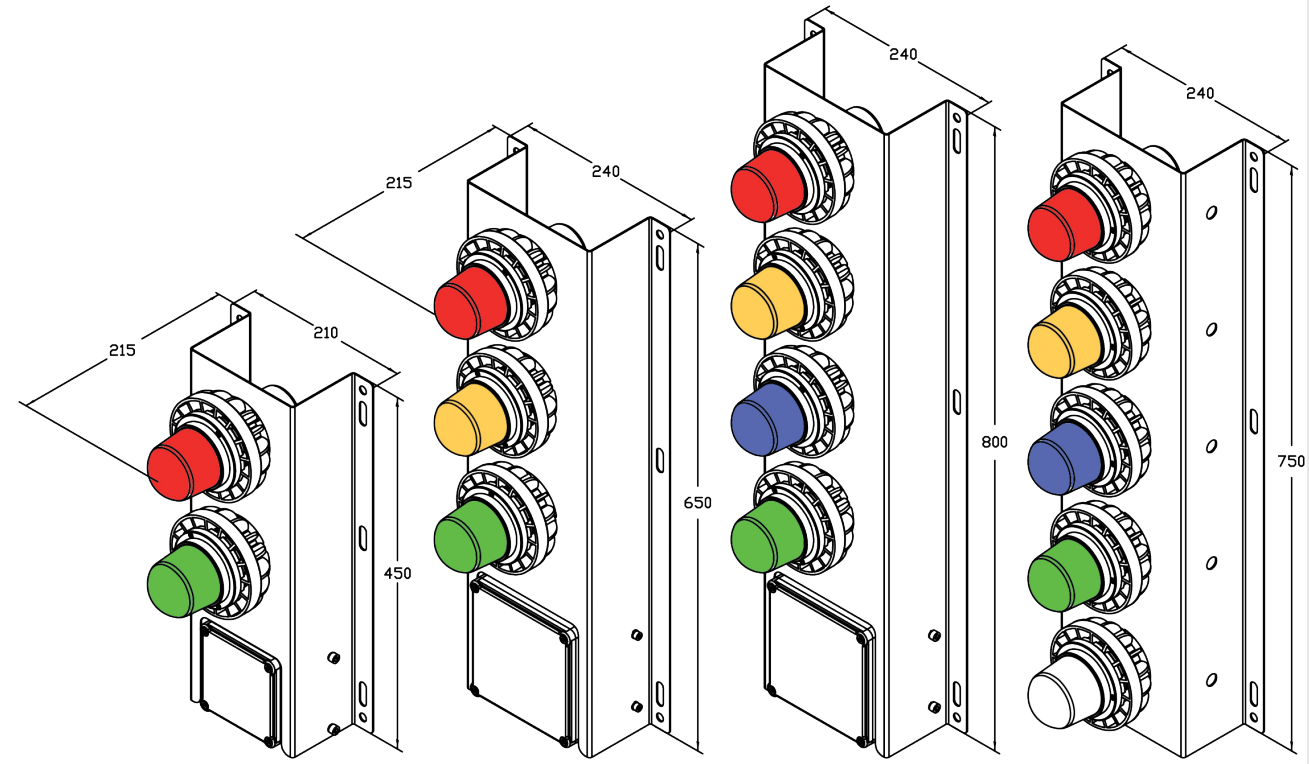
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different rated voltages

Different combination upon requests

Code	Type Lamp	Device	Watt
MSU-2RV	LED	2-way	19 W
MSU-3RGV	LED	3-way	19 W
MSU-4RGBV	LED	4 -way	19 W
MSU-5RGBVI	LED	5-way	19 W

DIMENSIONAL DRAWINGS



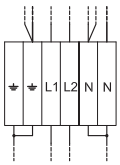
MSU-2RV
Red
Green

MSU-3RGV
Red
Ambrer
Green

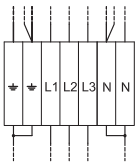
MSU-4RGBV
Red
Amber
Blue
Green

MSU-5RGBVI
Red
Amber
Blue
Green
Colorless

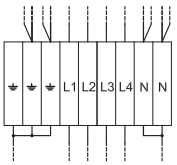
ELECTRICAL CONNECTION



MSU-2RV

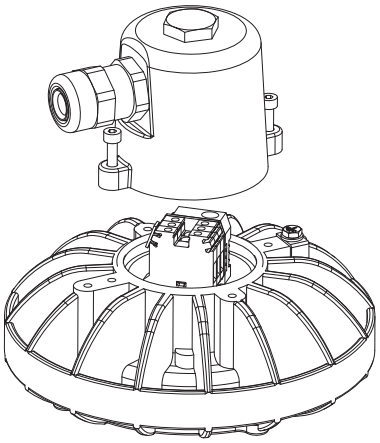


MSU-3RGV



MSU-4RGBV

Wiring inside the junction box

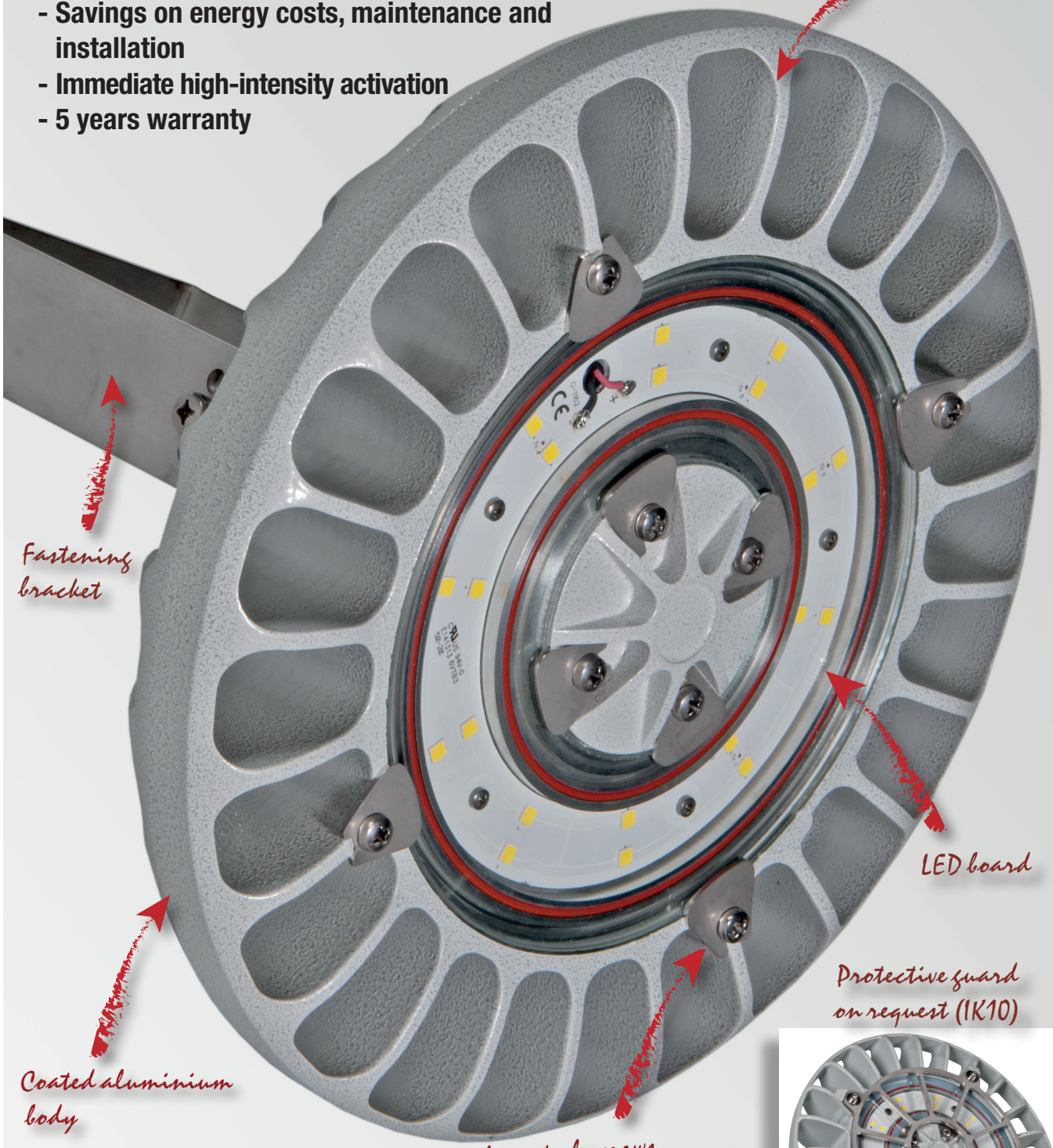


MSU-5RGBVI
Electrical connection directly to the entrance of the lighting fixtures

flowex

PATENTED

- Zone 1, 2, 21, 22
- Replaces traditional discharge lamps up to 400W
- Savings on energy costs, maintenance and installation
- Immediate high-intensity activation
- 5 years warranty



FLOWEX series High Bay LED lighting fixtures

FlowEx series lighting fixtures represent the most recent evolution of low-bay and high-bay LED lighting for environments with potentially explosive atmospheres.
The FlowEx series is made up of three lamp body sizes and is the LED alternative for all those areas where it was customary for low and medium power discharge lighting fixtures up to 400W to be installed.
The design of the finned body, made of aluminium alloy, acts as an excellent heat sink for the LED board, allowing fast and effective dissipation of the heat generated during normal operation of the LEDs themselves. Furthermore, the geometric structure of the cooling fins is designed to minimise the deposits of combustible dust and allow air or water present in the surrounding area to self-clean the lighting fixture.
Based on the principles of Lean manufacturing, the design resulted in a lighting fixture that is light and easy to install, yet robust and durable at the same time.
They feature a high-quality die-cast aluminium body and a glass diffuser which is resistant to impact and high temperatures.
Available in different sizes and with a wide range of voltage and power features, the FlowEx series is optimally designed and certified for the area of installation.
The use of LED dual-die technology and high-power LED boards provides a lumen output from 4.800 lm to 28.000 lm, making the range highly efficient and long lasting in terms of its electronics and lighting technology.

Sectors of application:

Petroleum refineries | Chemical and petrochemical facilities | Anti-light pollution | Offshore facilities | Onshore facilities | Perimeter zone lighting | Petroleum loading/unloading pontoons | 100% produced by Cortem

CERTIFICATE DATA

Classification:	Group II	Category 2GD/3G	
Installation: EN 60079.14	zone 1, 2, 21, 22 *FLOWEX-ME*	zone 2, 21, 22 *FLOWEX-MN*	
Marking:	CE 0722 Ex II 2GD - Ex db eb mb IIC T.. Gb - Ex tb IIIC T..°C Db - IP66		*FLOWEX-ME*
	CE Ex II 3G - Ex nR IIC T.. Gc CE 0722 Ex II 2D - Ex tb IIIC T..°C Db - IP66		*FLOWEX-MN*
Certificate:	ATEX CML 21 ATEX 3606X		*FLOWEX-ME*
	ATEX CML 21 ATEX 4607X ATEX CML 21 ATEX 3610X		*FLOWEX-MN*
	IEC Ex CML 21.0070X		For all IEC Ex, UKEX certification data, download the certificate from www.cortemgroup.com
	UKEX AVAILABLE		
	UL PENDING		
Standards:	CENELEC EN60079-0: 2018, EN60079-1:2014, EN60079-7: 2015+A1:2018, EN60079-15: 2015/2019, EN60079-18: 2015+A1:2017, EN60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU. IEC60079-0: 2017, IEC60079-7: 2017, IEC60079-15: 2017, IEC 60079-18: 2017, IEC60079-31: 2013		
Temperature class:	For all permitted ambient temperature classes, please see the "Selection tables"		
Ambient temperature:	-40°C +60°C	Esempio cod. FLOWEX-ME-080070	For all permitted ambient temperature ranges, please see the "Selection tables"
	-60°C +60°C	Example cod. FLOWEX-ME-080070/C	
Degree of protection:	IP66		

FLOWEX series High Bay LED lighting fixtures

ORIGINAL PRODUCT

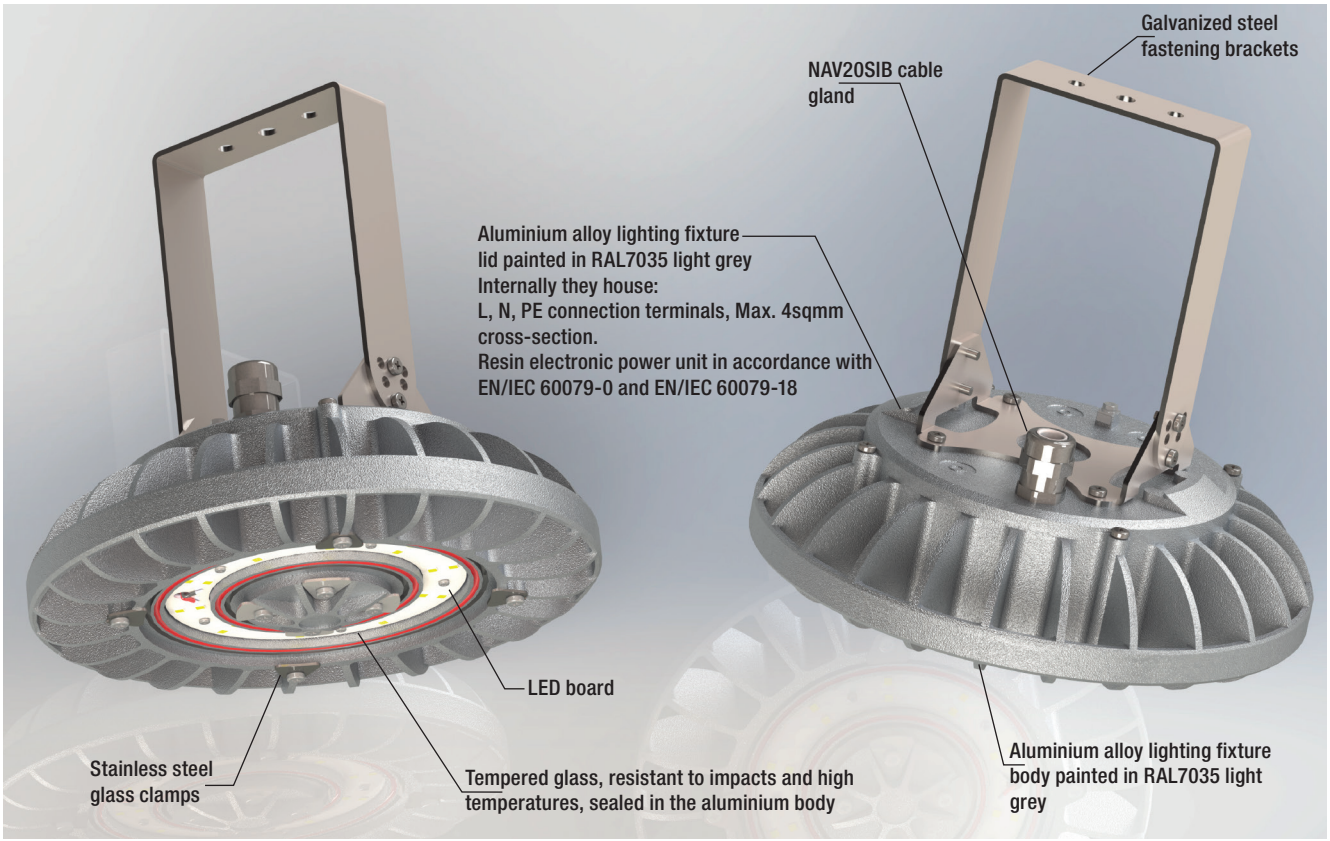
For more information on electrical connectors

NO PHOTOBIOLOGICAL RISK (IEC / EN 62471 STANDARD)

MECHANICAL FEATURES

Body:	Aluminium alloy with low copper content. With cooling fins for high levels of heat dissipation
Front glass:	Tempered glass, resistant to high temperatures and knocks
Seals:	Silicone resistant to acids, hydrocarbons and high temperatures
Fastening bracket:	Galvanized steel
Screws:	Stainless steel
Entry points:	Standard version with 1 hole Ø20 complete with 1 NAV20SIB. For the other versions, cable glands are on request
Coating:	Polyester RAL 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by the Standard EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

FLOWEX-080 LIGHTING FIXTURE IN DETAIL



FLOWEX series selection table

	Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
Zone 1, 2, 21, 22	FLOWEX-ME-060030	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4785	1700	146	3,2	285x245x135
	FLOWEX-ME-060040	38,8	40	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	5531	1966	143	3,2	285x245x135
	FLOWEX-ME-060050	46,7	50	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	6389	2273	137	3,2	285x245x135
	FLOWEX-ME-060060	55,6	60	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	7285	2592	131	3,2	285x245x135
	FLOWEX-ME-080070	69,1	70	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	9547	3438	138	4,2	305x305x140
	FLOWEX-ME-080080	79,4	80	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	10646	3834	134	4,2	305x305x140
	FLOWEX-ME-080090	89,2	90	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	11641	4197	129	4,2	305x305x140
	FLOWEX-ME-080100	101,7	100	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	12708	4582	125	4,2	305x305x140
	FLOWEX-ME-100120	117,0	120	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	17687	6221	151	7,8	405x405x145
	FLOWEX-ME-100140	136,5	140	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	20154	7086	148	7,8	405x405x145
	FLOWEX-ME-100160	156,6	160	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	22422	7882	143	7,8	405x405x145
	FLOWEX-ME-100180	173,6	180	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	24218	8513	140	7,8	405x405x145
	FLOWEX-ME-100200	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	25709	9040	135	7,8	405x405x145
	FLOWEX-ME-100220	214,2	220	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	27961	9837	131	7,8	405x405x145
Zone 2, 21, 22	FLOWEX-MN-060030	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4784	1700	146	3,2	285x245x135
	FLOWEX-MN-060040	38,8	40	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	5531	1966	143	3,2	285x245x135
	FLOWEX-MN-060050	46,7	50	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	6389	2273	137	3,2	285x245x135
	FLOWEX-MN-060060	55,6	60	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	7285	2592	131	3,2	285x245x135
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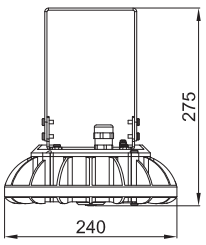
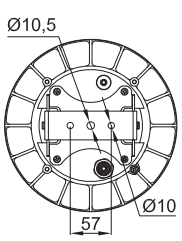
	FLOWEX-MN-100140	136,5	140	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	20154	7086	148	7,8	405x405x145
	FLOWEX-MN-100160	156,6	160	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	22422	7882	143	7,8	405x405x145
	FLOWEX-MN-100180	173,6	180	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	24218	8513	140	7,8	405x405x145
	FLOWEX-MN-100200	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	25709	9040	135	7,8	405x405x145
	FLOWEX-MN-100220	214,2	220	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	27961	9837	131	7,8	405x405x145

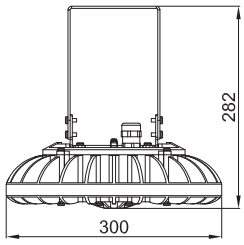
Dimensional drawings

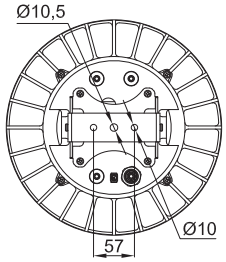
FLOWEX-..-060...



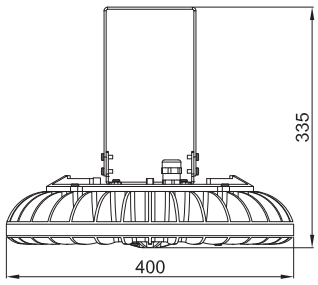


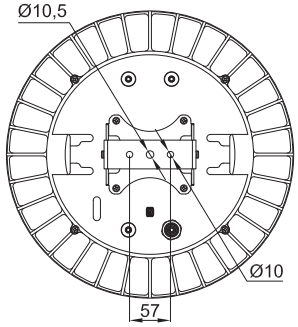
FLOWEX-..-080...





FLOWEX-..-100...





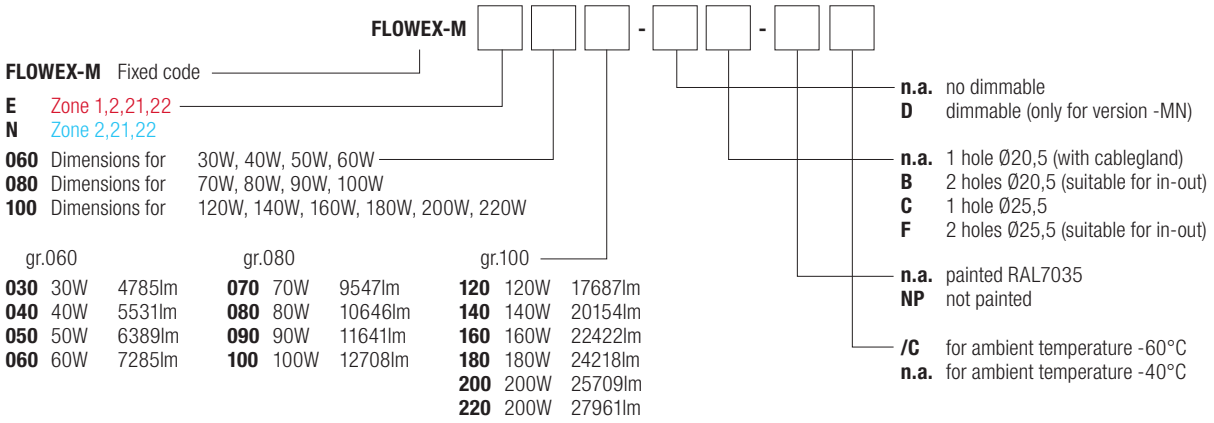
Dimensions in mm

FLOWEX series High Bay LED lighting fixtures

Electrical features	FLOWEX-..060..	FLOWEX-..080..	FLOWEX-..100..
Supply voltage:	100-277 Vac	100-277 Vac	100-277 Vac
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Rated power consumption* :	**..030** 30 W **..040** 40 W **..050** 50 W **..060** 60 W - -	**..070** 70 W **..080** 80 W **..090** 90 W **..100** 100 W - -	**..120** 120 W **..140** 140 W **..160** 160 W **..180** 180 W **..200** 200 W **..220** 220 W
Connection:	Cable entry directly to the terminal board L, N, PE. Max. 4 sq mm cross-section		
Power factor:	>0.95	>0.95	>0.95
Rated current:	**..030** 150 mA **..040** 180 mA **..050** 210 mA **..060** 250 mA - -	**..070** 310 mA **..080** 360 mA **..090** 400 mA **..100** 450 mA - -	**..120** 540 mA **..140** 620 mA **..160** 700 mA **..180** 770 mA **..200** 840 mA **..220** 950 mA
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3		
THD (Total Harmonic Distortion):	<8% (230 Vac)		
Over-voltage protection:	4 kV	4 kV	4 kV
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection		
Dimming (on request only in the ..- MN version):	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor
Photometric features			
Multichip LED:	High power LED	High power LED	High power LED
Viewing angle:	120°	120°	120°
Colour temperature:	5000 K	5000 K	5000 K
CRI:	>70	>70	>70
Instant Restrike:	YES	YES	YES
L90:	> 60000 h	> 60000 h	> 60000 h

** Test performed at 230 Vac*

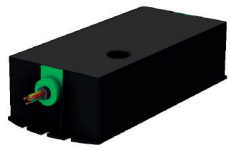
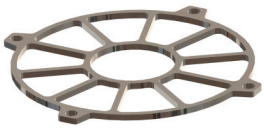
ORDER CODE LOGIC



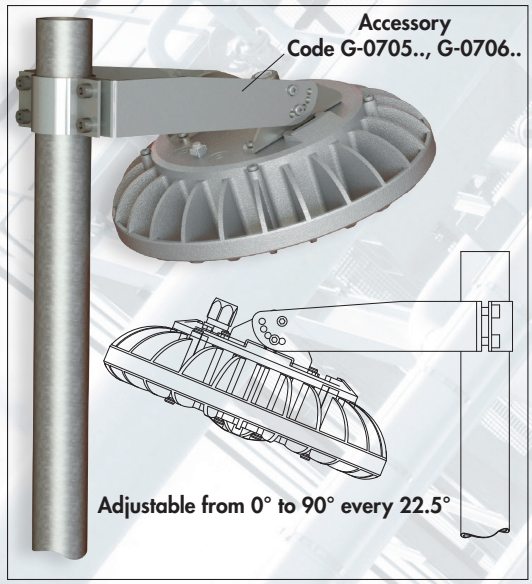
ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Different rated voltages
Additional U-bolts for assembly to a pole
Eye bolt
Special lid for direct installation on pole (code example FLOWEX-ME-080080-**T**)
Threaded pole attachment with fixed 25° orientation (code example FLOWEX-ME-080080-**IX**)
Fastening brackets in stainless steel AISI 304 or AISI 3016L
Protective guard in stainless steel AISI 304 for impact resistance IK10 (only for FLOWEX-ME..)

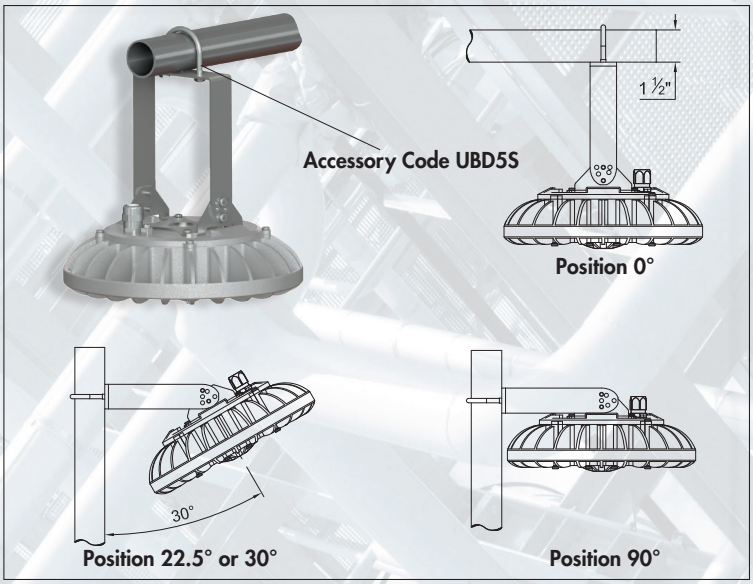
FLOWEX series High Bay LED lighting fixtures

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Electronic power unit	FLOWEX-ME-060030	100-277 Vac	EBM-50C/850	SPARE PART
		FLOWEX-ME-060040		EBM-50C/1000	
		FLOWEX-ME-060050		EBM-50C/1200	
		FLOWEX-ME-060060		EBM-50C/1400	
		FLOWEX-ME-080070		EBM-100C/560	
		FLOWEX-ME-080080		EBM-100C/640	
		FLOWEX-ME-080090		EBM-100C/700	
		FLOWEX-ME-080100		EBM-100C/800	
		FLOWEX-ME-100120		EBM-240C/790	
		FLOWEX-ME-100140		EBM-240C/920	
		FLOWEX-ME-100160		EBM-240C/1050	
		FLOWEX-ME-100180		EBM-240C/1150	
		FLOWEX-ME-100200		EBM-240C/1250	
		FLOWEX-ME-100220		EBM-240C/1400	
	Electronic power unit	FLOWEX-MN-060030	100-277 Vac	LEDDEVL060/2/1	SPARE PART
		FLOWEX-MN-060040		LEDDEVL060/2	
		FLOWEX-MN-060050		LEDDEVL060/2/3	
		FLOWEX-MN-060060		LEDDEVL060/2/4	
		FLOWEX-MN-080070		LEDDEVL080/4/5	
		FLOWEX-MN-080080		LEDDEVL080/4/6	
		FLOWEX-MN-080090		LEDDEVL080/4	
		FLOWEX-MN-080100		LEDDEVL080/4/7	
		FLOWEX-MN-100120		LEDDEVL100/1/6	
		FLOWEX-MN-100140		LEDDEVL100/1/7	
		FLOWEX-MN-100160		LEDDEVL100/1/8	
		FLOWEX-MN-100180		LEDDEVL100/1/9	
		FLOWEX-MN-100200		LEDDEVL100/1/1	
		FLOWEX-MN-100220		LEDDEVL100/1	
	U-bolt for assembly on a pole	For poles Ø1 1/2"	Material: stainless steel AISI 316L	UBD5S	ACCESSORY SPARE PART
	Adjustable pole fixing bracket for Ø1 1/2" poles and Ø2 1/2"	FLOWEX-...060.. FLOWEX-...080..	Galvanized steel	Ø1 1/2" G-0705	ACCESSORY SPARE PART
				Ø2 1/2" G-0723	
		FLOWEX-...100..		Ø1 1/2" G-0706	
				Ø2 1/2" G-0722	
		FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 304	Ø1 1/2" G-0705IN	
				Ø2 1/2" G-0723IN	
		FLOWEX-...100..		Ø1 1/2" G-0706IN	
				Ø2 1/2" G-0722IN	
		FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 316L	Ø1 1/2" G-0705A4	
				Ø2 1/2" G-0723A4	
		FLOWEX-...100..		Ø1 1/2" G-0706A4	
				Ø2 1/2" G-0722A4	
	Fastening bracket	FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 304	G-1262IN	ACCESSORY SPARE PART
			Stainless steel AISI 316L	G-1262A4	
		FLOWEX-...100..	Stainless steel AISI 304	G-1263IN	
			Stainless steel AISI 316L	G-1263A4	
	Protective guard	FLOWEX-...060..	Stainless steel AISI 304	G-0728	ACCESSORY SPARE PART
		FLOWEX-...080..		G-0729	
		FLOWEX-...100..		G-0730	

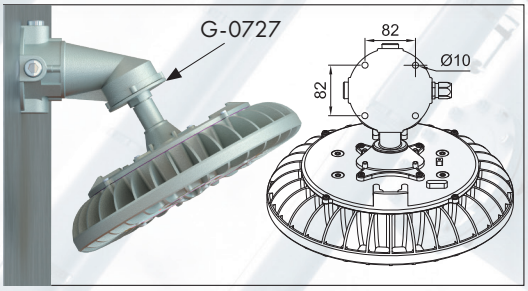
Typical assemblies with installation accessories



Pole mount mechanism with adjustable bracket



Assembly on 1 1/2" conduit pipe with UBD

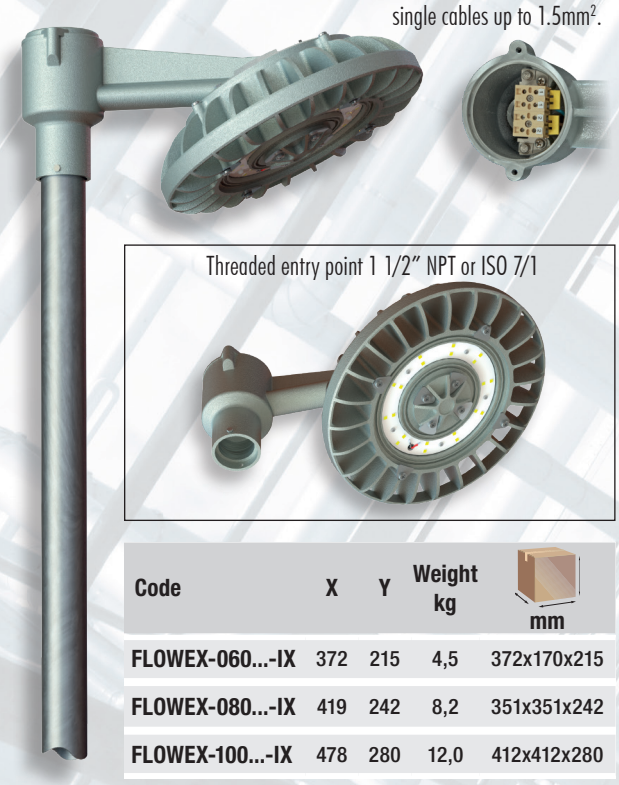


Use example of accessories with ISO M80x2 thread with adapter **G-0727** (example of use with fixed bracket inclined at 30°)

Ceiling mount, tall model TYPE "U"

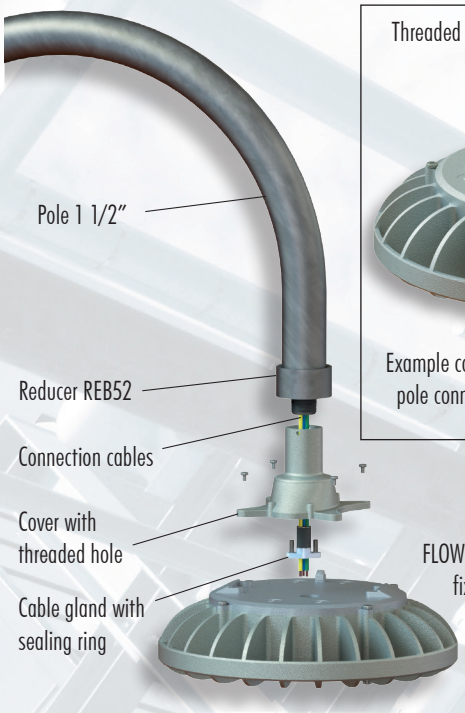
STANCHION MOUNTING WITH FIXED ORIENTATION AT 25°

Direct connection to terminal board L, N, Pe. Posible section 1.5mm² for loop-in/loop-out. Input of 3 single cables up to 4mm², input-output with 6 single cables up to 1.5mm².

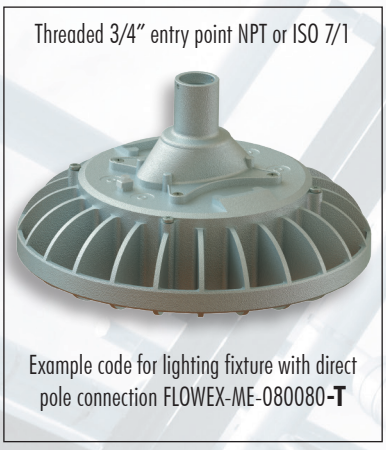


DIRECT POLE ATTACHMENT SYSTEM

Lighting fixture prearranged for direct installation on pole



Example FLOWEX-ME-080080-T lighting fixture installed on pole

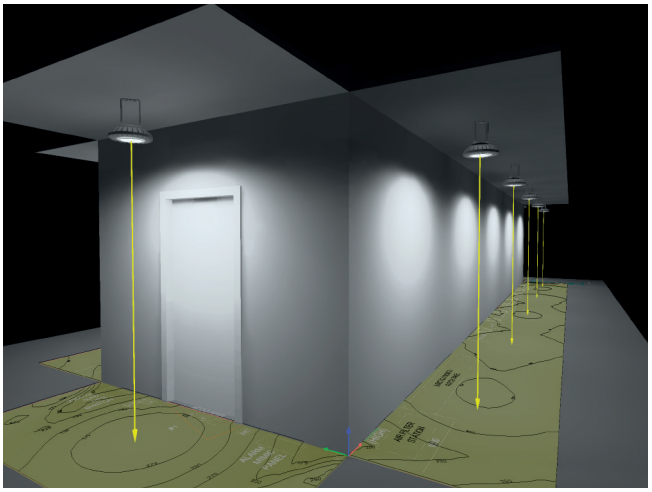


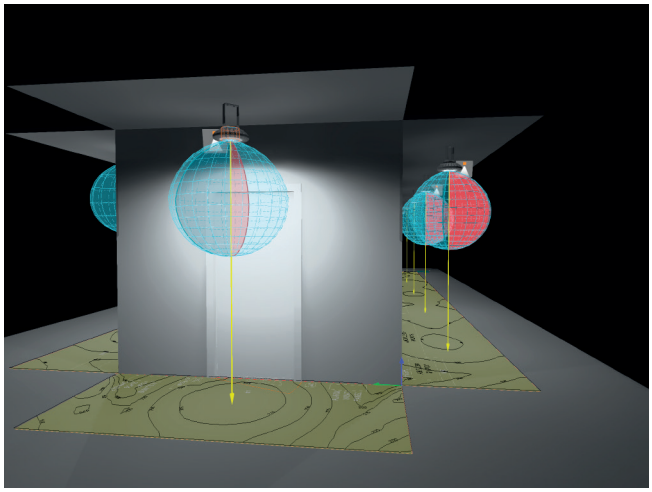
Example code for lighting fixture with direct pole connection FLOWEX-ME-080080-**T**

Code	X	Y	Weight kg	mm
FLOWEX-060...-IX	372	215	4,5	372x170x215
FLOWEX-080...-IX	419	242	8,2	351x351x242
FLOWEX-100...-IX	478	280	12,0	412x412x280

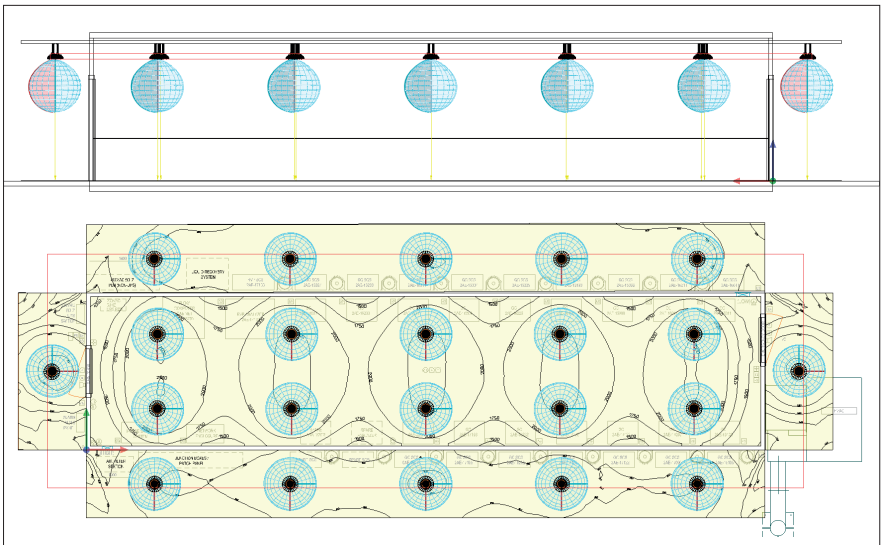
Photometric study example

FLOWEX series ceiling-mounted lighting fixtures

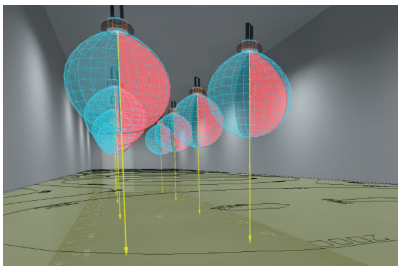


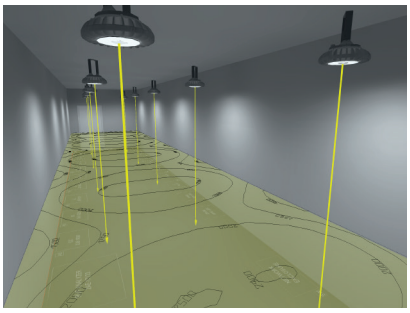


Representation of an outdoor installation - perimeter lighting on 13m and 3m lengths



Equidistant, even-height arrangement for uniformity of light both inside and outside the structure.



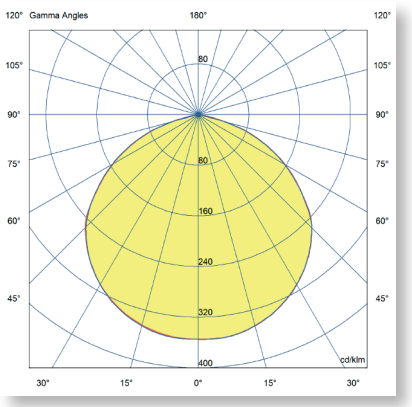


Representation of an indoor installation - room height 2.7m, worktop height 0.8m

List of lighting fixture power used

Φtotal	Ptotal	Efficiency
114222 lm	793.6 W	143.9 lm/W

	Pc.	Item	P	Φ	Efficiency
Internal area	10	FLOWEX...060030	32.8 W	4785 lm	145.9 lm/W
External area	12	FLOWEX...060040	38.8 W	5531 lm	142.5 lm/W



The lighting solution files for the design, planning and simulation of lighting levels in 2D-3D, rendering and ray-tracing are available from www.cortemgroup.com.

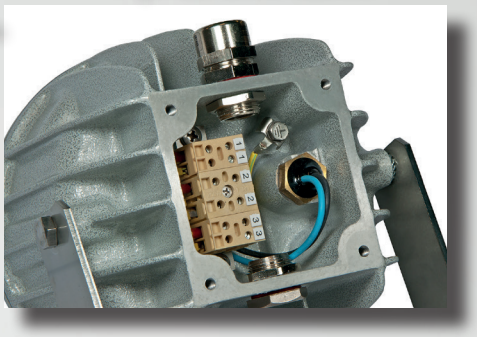
= level 90270

= level 0180

EVL-...-40

- Zone 1, 2, 21, 22
- Replaces traditional discharge lamps more than 400W
- Saves in energy, maintenance and installation costs
- Suitable for GAS category IIC
- IK11

Ex e terminal housing for a quick connection



EVL series LED floodlights

The LED EVL-...-40 series floodlights combines a light and compact design with great versatility, ease of installation and high lighting performance thanks to high intensity and efficiency LED plates which may be combined along with lens available with light beam with different shades.
The EVL-...-40 series consists of four sizes that can replace traditional floodlights with discharge lamps of low and medium power.
The design of the finned body, made of aluminium alloy, acts as a heat dissipater for the LED plate, allowing a fast and effective dispersion of heat generated by the normal operation of the LEDs. Furthermore, the air particles around the floodlight do not ionize, an intrinsic characteristic of LED technology that limits the attraction of dust and insects thanks to the absence of UV emission. EVL-...-40 series floodlights can be powered through an electric cable and a simple 'Ex e' cable gland (no barrier). Moreover, an opposed plugged hole permits the through wiring connection.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Anti light pollution | Offshore plants | Onshore plants | Perimeter lighting | Oil loading/ unloading jettie | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex db eb op is IIC T... Gb - Ex tb op is IIIC T...°C Db			
Certification:	ATEX EPT 19 ATEX 3323 X			
	IEC Ex IECEx SEV 19.0043X	For all IEC Ex and INMETRO certification data, download the certificate from www.cortemgroup.com		
	INMETRO AVAILABLE			
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-28: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-1: 2014, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Ambient temperature:	-40°C(-60°C)* +60°C**			
Degree of protection:	IP66			

* For temperatures to -60°C contact our Sales Office.
** For maximum surface temperature see "EVL series selection chart"

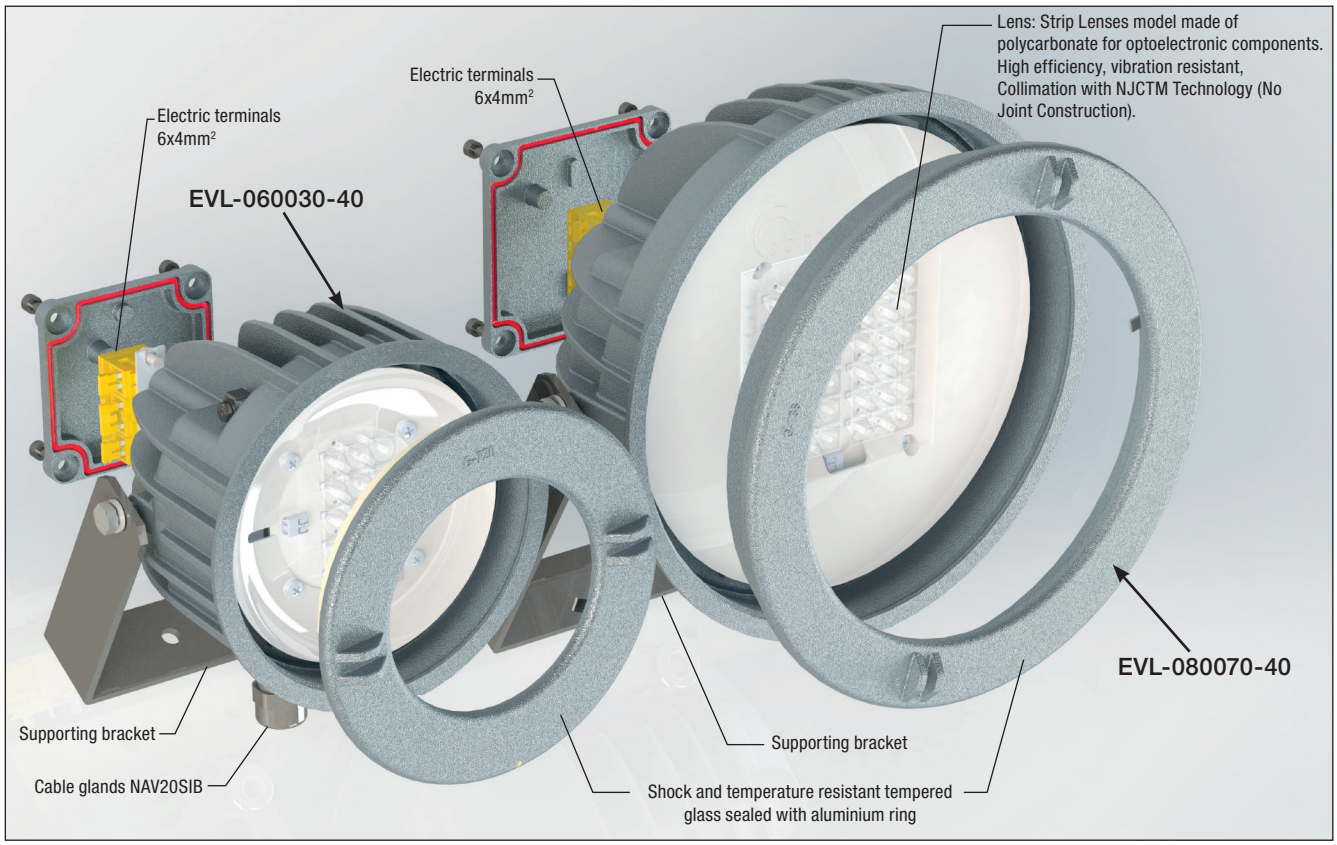
EXEMPT FROM PHOTOBIOLOGICAL RISK (STANDARD IEC / EN 62471)

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face:	Shock and temperature resistant tempered glass sealed with aluminium ring
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Supporting bracket:	Stainless steel
Bolts and screws:	Stainless steel
Entries:	2 x ISO M20 entries. Fixture kit with PLG1IB plug and NAV20SIB cable gland
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

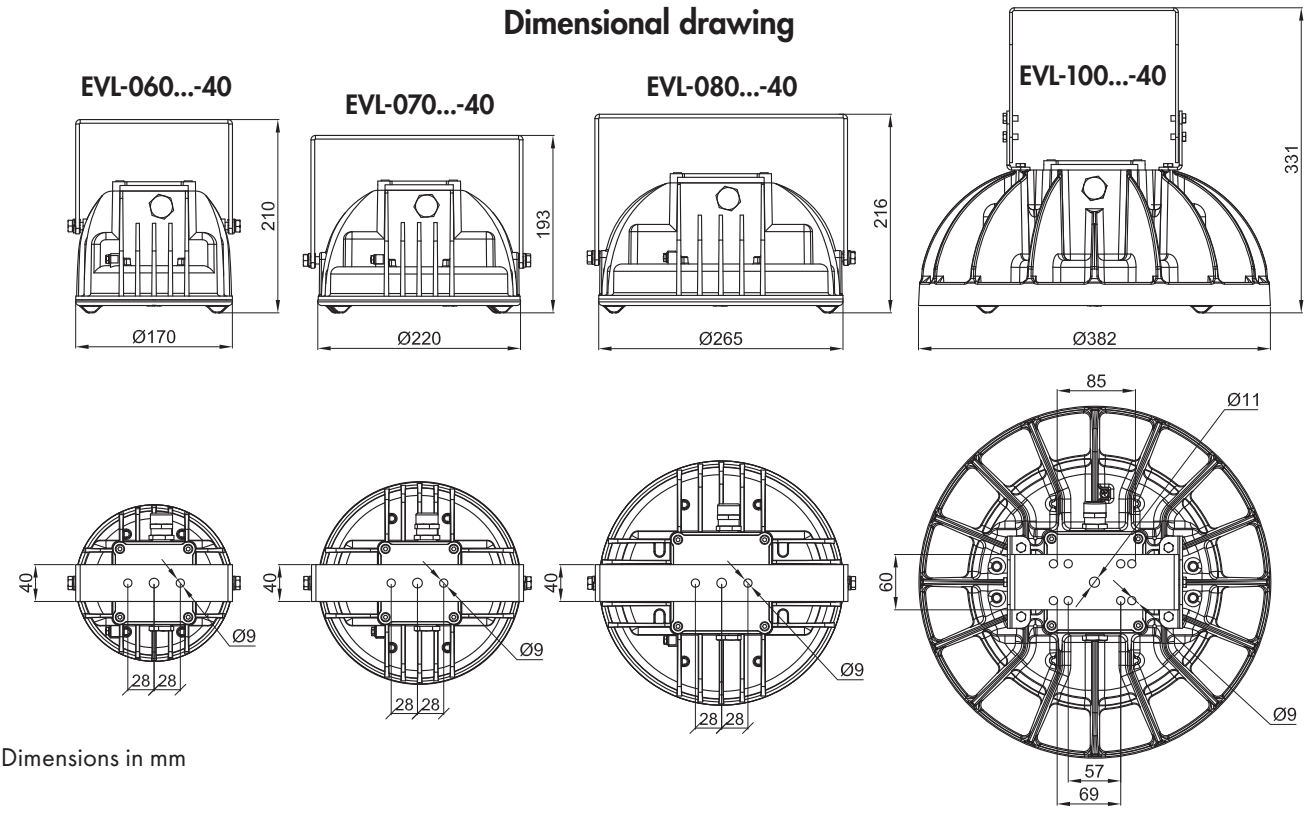
EXPLODED DIAGRAM OF EVL-...-40 FLOODLIGHTS



EVL-...-40 series selection chart

Code	Maximum permitted power value	Class / Max surface temp. °C			Lumen	Maximum light intensity	Overall efficiency	Weight kg	mm
		TA=+40°C	TA=+50°C	TA=+60°C					
EVL-060040-40	40 W	T6 / 85°C	T5 / 100°C	T5 / 100°C	3851 lm	7972 cd	94 lm/W	3,5	215x205x170
EVL-060050-40	50 W	T5 / 100°C	N/A	N/A	4479 lm	9272 cd	89 lm/W	3,5	215x205x170
EVL-070050-40	50 W	T5 / 100°C	T5 / 100°C	T4 / 135°C	6109 lm	12645 cd	116 lm/W	5,2	250x235x165
EVL-070060-40	60 W	T5 / 100°C	T5 / 100°C	T4 / 135°C	6997 lm	14484 cd	115 lm/W	5,2	250x235x165
EVL-070070-40	70 W	T5 / 100°C	N/A	N/A	7572 lm	15674 cd	106 lm/W	5,2	250x235x165
EVL-070080-40	80 W	T5 / 100°C	N/A	N/A	7946 lm	16449 cd	100 lm/W	5,2	250x235x165
EVL-080080-40	80 W	T5 / 100°C	T5 / 100°C	T4 / 135°C	10513 lm	14673 cd	126 lm/W	7,2	290x290x170
EVL-080090-40	90 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	11368 lm	15866 cd	125 lm/W	7,2	290x290x170
EVL-080100-40	100 W	T4 / 135°C	N/A	N/A	12141 lm	16946 cd	121 lm/W	7,2	290x290x170
EVL-080120-40	120 W	T4 / 135°C	N/A	N/A	13955 lm	19477 cd	117 lm/W	7,2	290x290x170
EVL-100140-40	140 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	16907 lm	23598 cd	118 lm/W	11,2	385x385x250
EVL-100160-40	160 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	19628 lm	40632 cd	119 lm/W	11,2	385x385x250
EVL-100180-40	180 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	20688 lm	42825 cd	114 lm/W	11,2	385x385x250
EVL-100200-40	200 W	T4 / 135°C	N/A	N/A	22656 lm	46900 cd	111 lm/W	11,2	385x385x250
EVL-100220-40	220 W	T4 / 135°C	N/A	N/A	23646 lm	48950 cd	107 lm/W	11,2	385x385x250

Dimensional drawing



Dimensions in mm

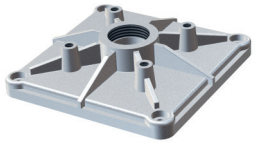
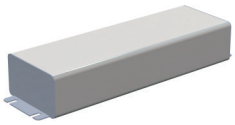
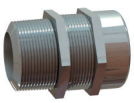
EVL series LED floodlights

Electrical features	EVL-060...	EVL-070...	EVL-080...	EVL-100...
Power supply:	120-277 Vac	120-277 Vac	110-277 Vac	120-277 Vac
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	**..040** 40 W	**..050** 50 W	**..080** 80 W	**..140** 140 W
	..050 50 W	**..060** 60 W	**..090** 90 W	**..160** 160 W
	-	**..070** 70 W	**..100** 100 W	**..180** 180 W
	-	**..080** 80 W	**..120** 120 W	**..200** 200 W
	-	-	-	**..220** 220 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out			
Power factor:	>0,93	>0,95	>0,97	>0,96
Rated current:	**..030** 140 mA	**..050** 230 mA	**..080** 350 mA	**..140** 640 mA
	..040 180 mA	**..060** 270 mA	**..090** 400 mA	**..160** 710 mA
	..050 220 mA	**..070** 310 mA	**..100** 440 mA	**..180** 800 mA
	-	**..080** 360 mA	**..120** 530 mA	**..200** 890 mA
	-	-	-	**..220** 970 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...			
THD (total harmonic distortion):	<10%			
Over-voltage protection:	4 kV	4 kV	4 kV	4 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection			
Dimmer (on request):	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor
Photometric features				
LED Multichip:	High power LED	High power LED	High power LED	High power LED
Viewing angle:	40°	40°	40°	40°
Colour temperature:	5700 K	5700 K	5000 K	5700 K
CRI:	>70	>70	>70	>70
Instant Restrike:	YES	YES	YES	YES
L90:	> 145000 h	> 145000 h	> 145000 h	> 145000 h

* *Test at 230Vac*

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

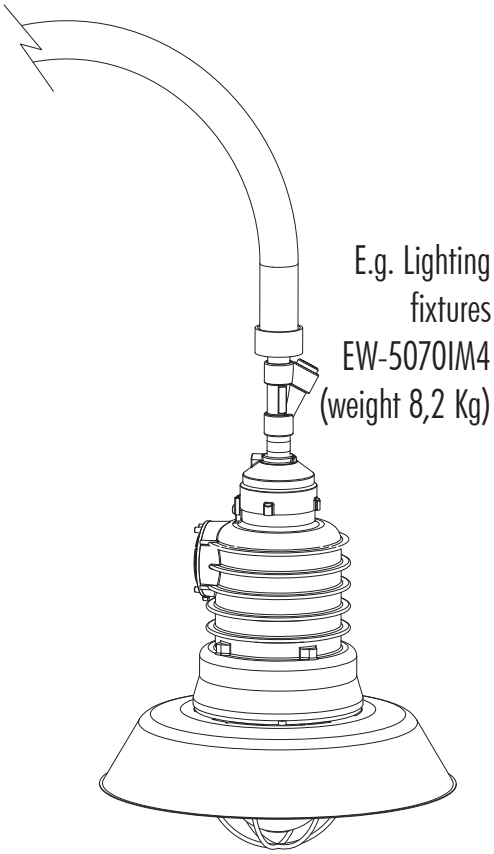
CRI values higher
Dimmer
Different colour temperature
U bolt for pole mounting
Eyebolt
Cover with direct connection for pole
Stanchion mounting with fixed orientation at 25°
Additional NAV20SIB cable gland for unarmoured cable
Version with stainless steel guard for additional glass protection

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Pendant eyebolt	internal Ø20	Material: galvanised steel	**G0F-8**	ACCESSORY SPARE PART
	U bolt for pole mounting	Pole Ø1 1/2"	Material: stainless steel AISI 316L	**UBD5S**	ACCESSORY SPARE PART
	Cover with direct connection for pole	EVL-060...-40-T EVL-070...-40-T	Material: aluminium alloy with threaded hole 3/4" NPT (Different threads on request)	**B-498**	SPARE PART
		EVL-080...-40-T EVL-100...-40-T		**B-499**	
	Supporting bracket	EVL-060...-40	Material: stainless steel AISI 316L	**G-764**	SPARE PART
		EVL-070...-40		**G-765**	
		EVL-080...-40		**G-766**	
		EVL-100...-40		**G-827**	
	Power supply	EVL-060030-40	120-277 Vac	**LEDDEVL060/2**	SPARE PART
		EVL-060040-40		**LEDDEVL060/2/1**	
		EVL-060050-40		**LEDDEVL060/2**	
		EVL-070050-40	120-277 Vac	**LEDDEVL070/1**	
		EVL-070060-40		**LEDDEVL070/1/2**	
		EVL-070070-40		**LEDDEVL070/1/3**	
		EVL-070080-40		**LEDDEVL080/4/1**	
		EVL-080080-40	110-277 Vac	**LEDDEVL080/5/2**	
		EVL-080090-40		**LEDDEVL080/5/5**	
		EVL-080100-40		**LEDDEVL080/5/6**	
		EVL-080120-40		**LEDDEVL080/5**	
		EVL-100140-40	120-277 Vac	**LEDDEVL080/5/8**	
		EVL-100160-40		**LEDDEVL100/1/5**	
		EVL-100180-40		**LEDDEVL100/1/2**	
		EVL-100200-40		**LEDDEVL100/1/3**	
		EVL-100220-40		**LEDDEVL100/1/4**	
	Cable gland	ISO M20	std. range cable 6,3÷11,6	**NAV20SIB**	SPARE PART
	Front ring with glass	EVL-060...-40	Aluminium ring Borosilicate glass face	**G60-0623**	SPARE PART
		EVL-070...-40		**G70-0623**	
		EVL-080...-40		**G80-0623**	
		EVL-100...-40		**G80-0623**	

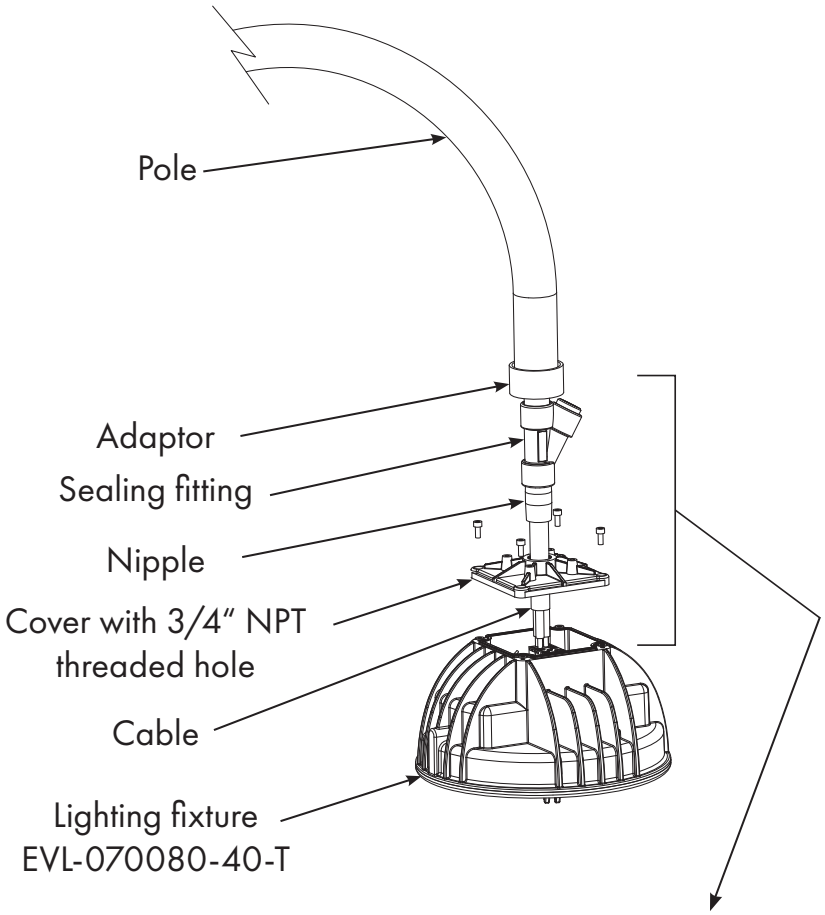
REPLACEMENT OF OLD LIGHTING FIXTURES POLE-MOUNTED

Using the lighting fixture with direct connection for pole mounting EVL-...-T series, it is possible to replace the old lighting fixtures with 3/4 "NPT or ISO 7/1 threaded entries.

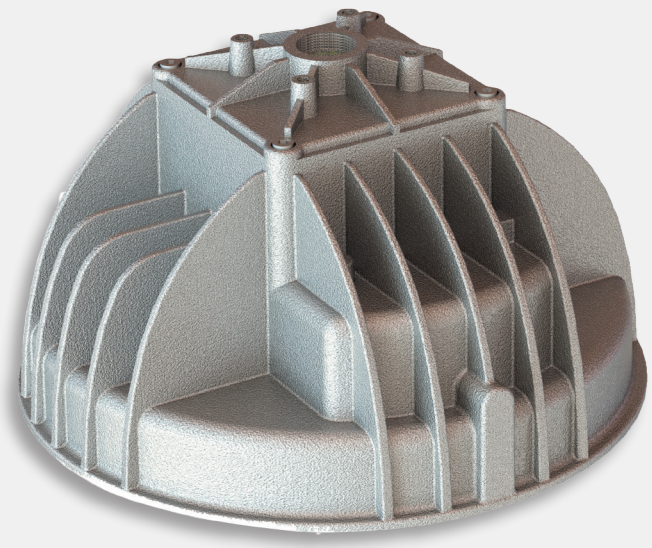
Typical pole-installation of an EW series lighting fixture with a resin sealing fitting.



E.g. Lighting fixtures EVL-070080-40-T (weight 5,3 Kg)



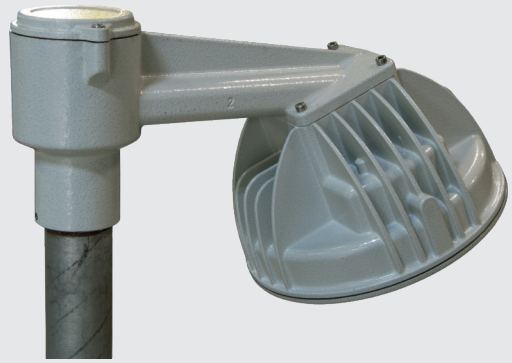
3/4" NPT threaded entry

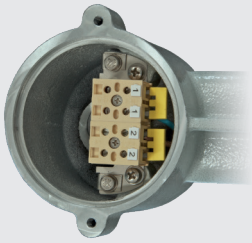


Example of coding of lighting fixtures with direct pole connection EVL-070070-40-**T**

Note: it is necessary to preserve, during the installation, the IP protection degree of the terminal box using a sealing fitting.

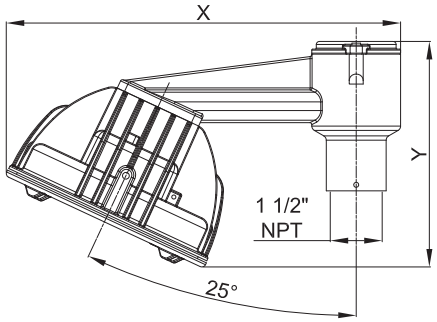
Stanchion mounting with fixed orientation at 25°





Direct connection to terminal board L, N, Pe.
Section 4mm², suitable for loop-in/loop-out

Code	X	Y	Peso kg	mm
EVL-060...-IX	372	215	4,5	372x170x215
EVL-070...-IX	395	226	6,0	372x327x226
EVL-080...-IX	419	242	8,2	351x351x242
EVL-100...-IX	478	280	12,0	412x412x280

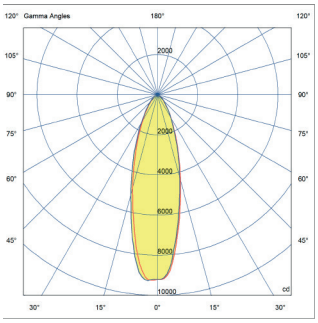


TRANSPORTABLE VERSION

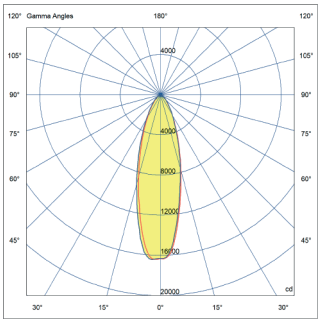
Transportable version EVL-...-40-PS complete with cable 8 meters long, sockets model PYN216V and plug model SPYN216V.
To order the transportable lighting fixture without socket and plug, omit the S in the code: **EVL-...-40-P.**

Weight (without socket):
EVL-060...-40-P 7,5 Kg
EVL-070...-40-P 9,2 Kg
EVL-080...-40-P 11,2 Kg
EVL-100...-40-P 15,2 Kg

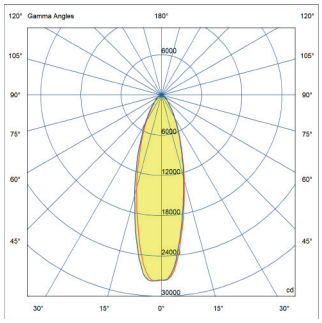
Photometric diagrams



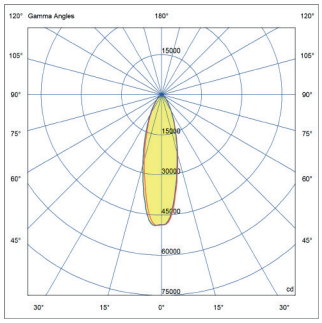
EVL-060040-40
Luminous flux: 3851 lm



EVL-070050-40
Luminous flux: 7946 lm



EVL-080080-40
Luminous flux: 10513 lm



EVL-100140-40
Luminous flux: 23646 lm

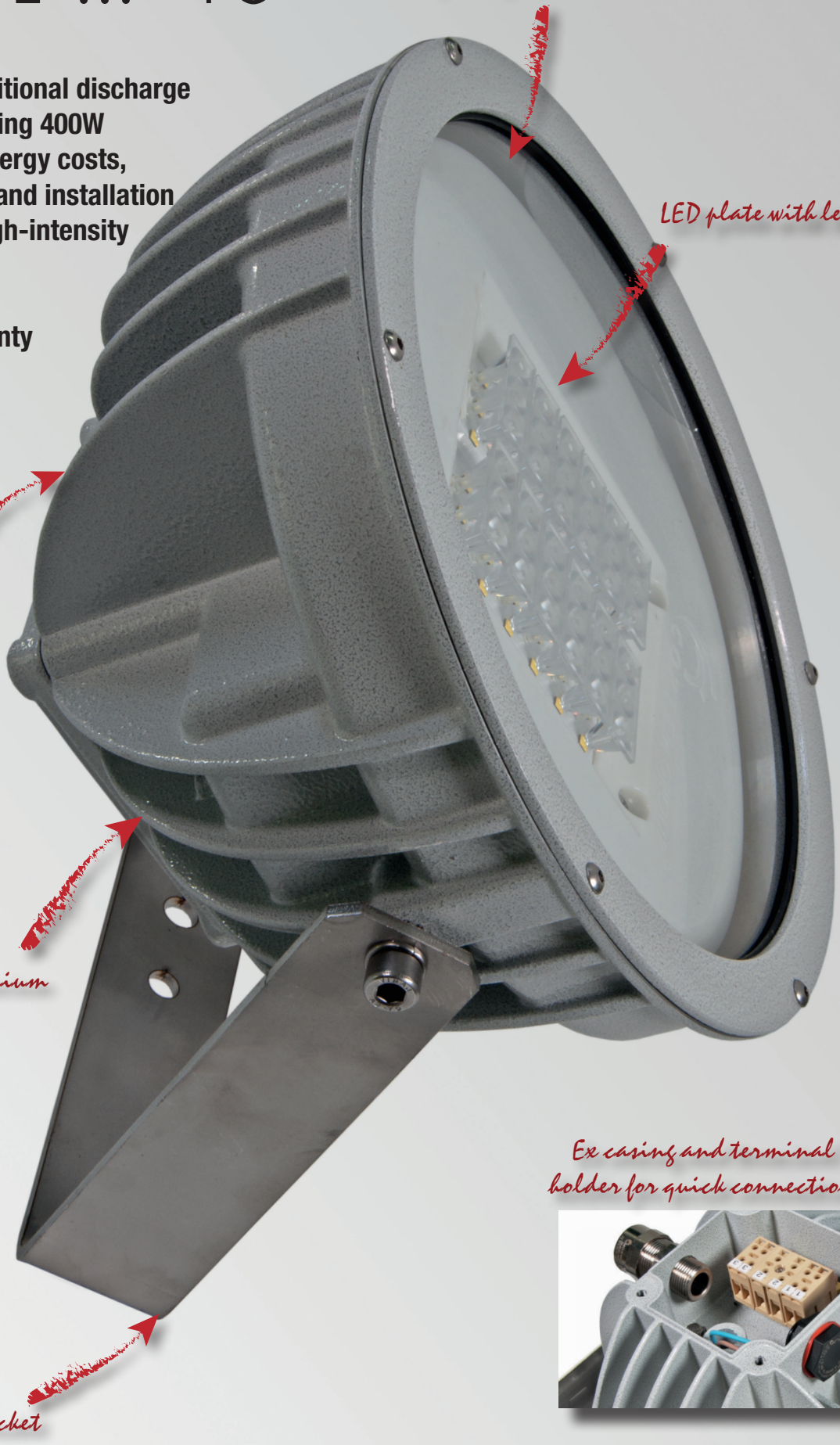
On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

EVNL-...-40

NEW TECHNOLOGY

- Zone 2, 21, 22
- Replaces traditional discharge lamps exceeding 400W
- Savings on energy costs, maintenance and installation
- Immediate high-intensity activation
- IK10
- 5 years warranty



Ex casing and terminal holder for quick connection

EVNL series LED floodlights for zone 2, 21, 22

EVNL-...-40 series LED floodlights are suitable for plants in zone 2 and zone 21,22. The advantage of the EVNL-...-40 floodlights is the implementation of the "Ex nR" method of protection which classifies the equipment as a restricted breathing device. The careful design together with the meticulous choice of materials to seal the lighting fixture limits the entry of flammable gases, vapours or mists during normal operation of the floodlight.
The body, made of aluminium alloy, is equipped with fins that act as a heat sink allowing a fast and effective dispersion of heat generated by the normal operation of the LED plate. Furthermore, the geometric structure of the cooling fins has been designed to minimise the deposits of combustible dust and allow air or water present in the surrounding area to exert a cleaning action on the floodlights, an entry point with an opposing plug allows the in/out connection for connecting multiple lighting bodies onto one single power line.

Sectors for use:

Petroleum refineries | Chemical and petrochemical plants | Anti-light pollution | Offshore plants | Onshore plants | Lighting of perimeter zones | Petroleum loading/ unloading pontoons | 100% produced by Cortem

CERTIFICATION DATA

Classification:	Group II	Group 2D/3G		
Installation: EN 60079.14	zone 2 (Gas)	zone 21, 22 (Dust)		
Execution:	CE 0722 Ex II 2D Ex tb IIIC T... °C Db IP 66			zone 21,22
Certificate:	CE Ex II 3G Ex nR IIC T... °C Gc			zone 2
	ATEX EPTI 20 ATEX 0389X			zone 21,22
	ATEX EPT 20 ATEX 4087X			zone 2
	IEC Ex IECEx EUT 20.0025X			For all IEC Ex, INMETRO and TRCU certification data, download the certificate from www.cortemgroup.com
	INMETRO DISPONIBLE			
Standard:	CENELEC EN 60079-0: 2018, EN 60079-15: 2010, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-15: 2010, IEC 60079-31: 2013 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Temperature class:	-60°C* +60°C			
Protection rating:	IP66			

EVNL series LED floodlights for zone 2, 21, 22

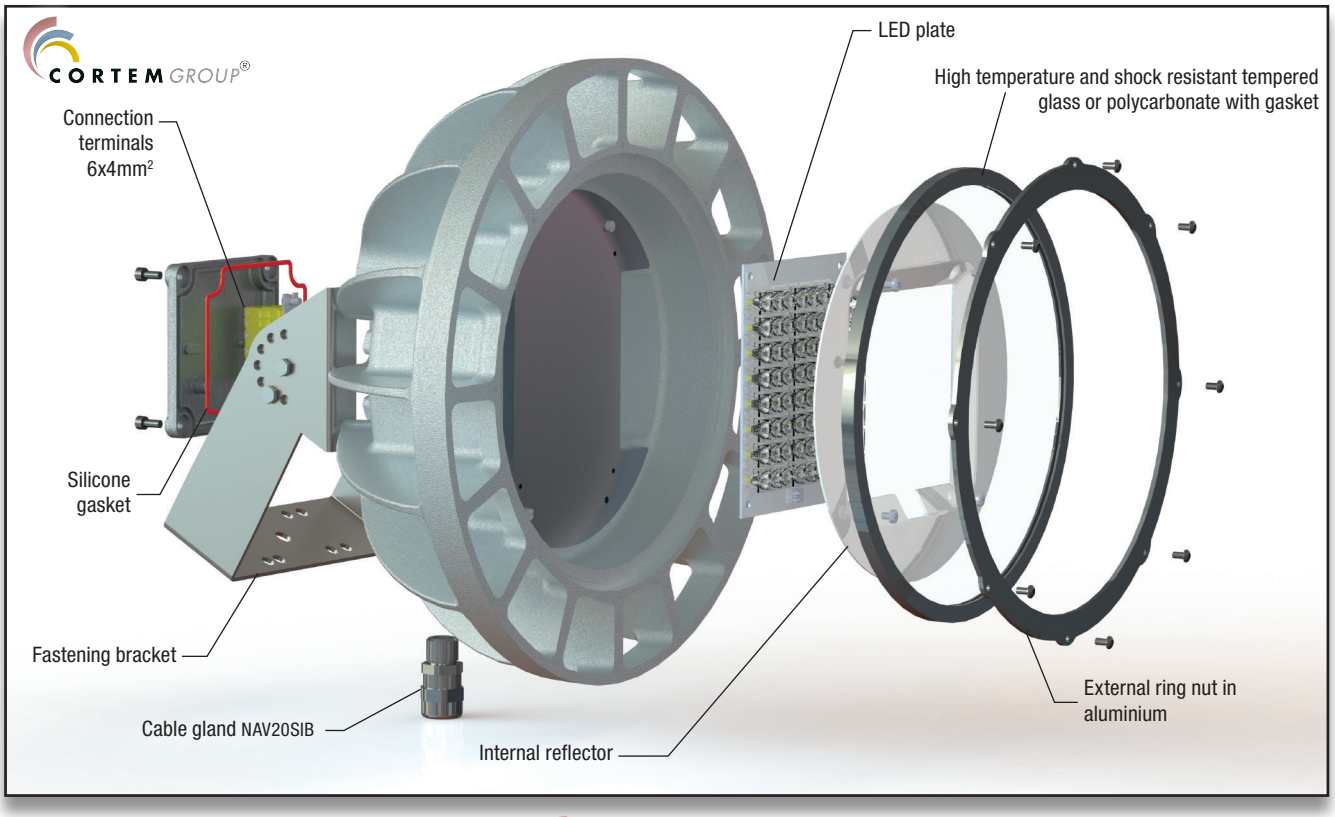
EXEMPT FROM PHOTOBIOLOGICAL RISK (STANDARD IEC / EN 62471)

ORIGINAL PRODUCT

MECHANICAL CHARACTERISTICS

Body:	Aluminium alloy with low copper content. With cooling fins for high levels of heat dissipation.
Transparent front cover:	High temperature and shock resistant tempered glass or polycarbonate
Gasket:	Acid, hydrocarbon and high temperature resistant
Fastening bracket:	Stainless steel
Screws:	Stainless steel
Entry points:	2 ISO M20 entry points fixture complete with a PLG1ILXE7 plug and NAV20SIB cable gland
Coating:	Polyester RAL 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by the Standard EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

EXPLODED VIEW OF FLOODLIGHT EVNL-...-40

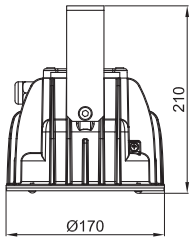


EVNL-.../40 series selection chart

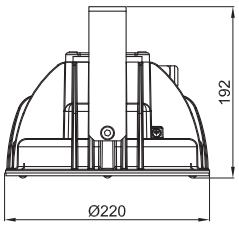
Code	Rated power value	Class / Max surface temp. °C			Lumen	Maximum light intensity	Overall efficiency	Weight kg	mm
		TA=+40°C	TA=+50°C	TA=+60°C					
EVNL-060040-40	40 W	T6 / 85°C	T5 / 100°C	T4 / 135°C	4598 lm	9518 cd	112 lm/W	2,5	215x205x170
EVNL-060050-40	50 W	T5 / 100°C	N/A	N/A	4986 lm	10321 cd	106 lm/W	2,5	215x205x170
EVNL-070050-40	50 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	6489 lm	13432 cd	122 lm/W	3,3	250x235x165
EVNL-070060-40	60 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	7594 lm	15720 cd	120 lm/W	3,3	250x235x165
EVNL-070070-40	70 W	T4 / 135°C	N/A	N/A	8102 lm	16771 cd	113 lm/W	3,3	250x235x165
EVNL-070080-40	80 W	T4 / 135°C	N/A	N/A	9081 lm	18799 cd	114 lm/W	3,3	250x235x165
EVNL-080080-40	80 W	T5 / 100°C	T4 / 135°C	T4 / 135°C	10923 lm	22612 cd	130 lm/W	4,3	290x290x170
EVNL-080090-40	90 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	11775 lm	24374 cd	126 lm/W	4,3	290x290x170
EVNL-080100-40	100 W	T4 / 135°C	N/A	N/A	12509 lm	25896 cd	117 lm/W	4,3	290x290x170
EVNL-080120-40	120 W	T4 / 135°C	N/A	N/A	13719 lm	28400 cd	111 lm/W	4,3	290x290x170
EVNL-100140-40	140 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	15532 lm	32153 cd	108 lm/W	9,2	385x385x250
EVNL-100160-40	160 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	20466 lm	42367 cd	122 lm/W	9,2	385x385x250
EVNL-100180-40	180 W	T4 / 135°C	T4 / 135°C	T4 / 135°C	21378 lm	44255 cd	118 lm/W	9,2	385x385x250
EVNL-100200-40	200 W	T4 / 135°C	N/A	N/A	23828 lm	49327 cd	116 lm/W	9,2	385x385x250
EVNL-100220-40	220 W	T4 / 135°C	N/A	N/A	24542 lm	50803 cd	113 lm/W	9,2	385x385x250

Dimensional drawing

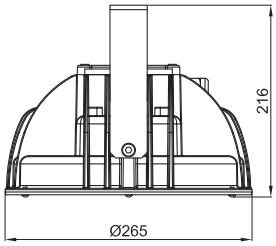
EVNL-060...-40



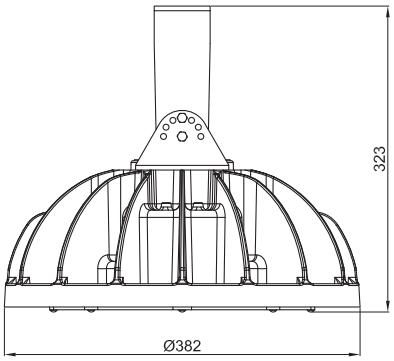
EVNL-070...-40

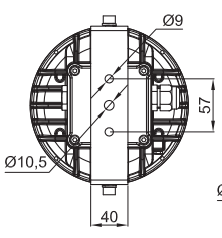


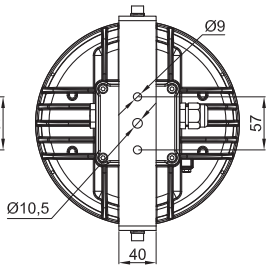
EVNL-080...-40

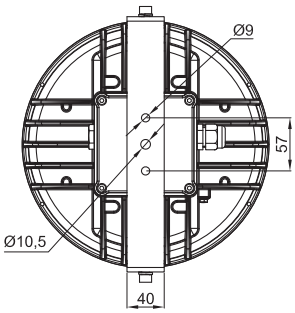


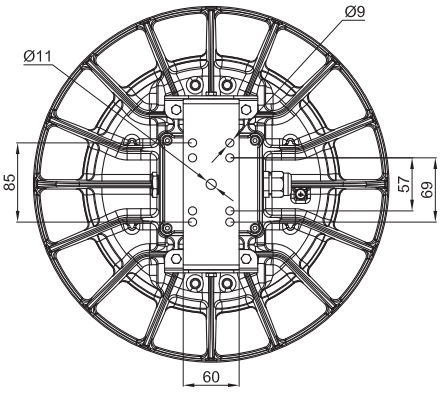
EVNL-100...-40











Dimensions in mm

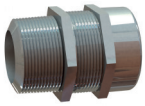
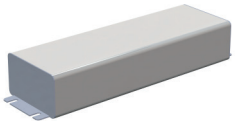
EVNL series LED floodlights for zone 2, 21, 22

Electrical features	EVNL-060..	EVNL-070..	EVNL-080..	EVNL-100..
Power supply:	120-277 Vac	120-277 Vac	120-277 Vac	120-277 Vac
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	**..040** 40 W	**..050** 50 W	**..080** 80 W	**..140** 140 W
	..050 50 W	**..060** 60 W	**..090** 90 W	**..160** 160 W
	-	**..070** 70 W	**..100** 100 W	**..180** 180 W
	-	**..080** 80 W	**..120** 120 W	**..200** 200 W
	-	-	-	**..220** 220 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm², suitable for loop-in/loop-out			
Power factor:	>0,93	>0,95	>0,97	>0,96
Rated current:	**..030** 140 mA	**..050** 230 mA	**..080** 350 mA	**..140** 640 mA
	..040 180 mA	**..060** 270 mA	**..090** 400 mA	**..160** 710 mA
	..050 220 mA	**..070** 310 mA	**..100** 440 mA	**..180** 800 mA
	-	**..080** 360 mA	**..120** 530 mA	**..220** 970 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...			
THD (total harmonic distortion):	<10%			
Over-voltage protection:	4 kV	4 kV	4 kV	4 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection			
Dimmer (on request):	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor
Photometric features				
LED Multichip:	High power LED	High power LED	High power LED	High power LED
Viewing angle:	40°	40°	40°	40°
Colour temperature:	5700 K	5700 K	5700 K	5700 K
CRI:	>70	>70	>70	>70
Instant Restrike:	YES	YES	YES	YES
L90:	> 145000 h	> 145000 h	> 145000 h	> 145000 h

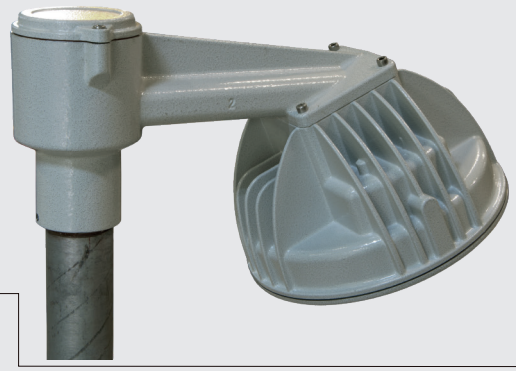
* *Test at 230Vac*

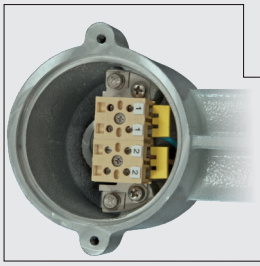
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

CRI values higher
Dimmer
Different colour temperature
U bolt for pole mounting
Eyebolt
Cover with direct connection for pole
Additional NAV20SIB cable gland for unarmoured cable

ILLUSTRATION	DESCRIPTION	MODEL	CHARACTERISTICS	CODE	KEY
	Suspended eye bolt	Ø interno 20	Material: galvanized steel	**G0F-8**	ACCESSORY, SPARE PART
	U-bolt for pole assembly	per pali Ø1 1/2"	Material: stainless steel AISI 316L	**UBD5S**	ACCESSORY, SPARE PART
	Fastening bracket	EVNL-060...-40	Material: stainless steel AISI 316L	**G-764IN**	SPARE PART
		EVNL-070...-40		**G-765IN**	
		EVNL-080...-40		**G-766IN**	
		EVNL-100...-40		**G-827**	
	Cable gland	ISO M20	std. range cable 6,3÷11,6	**NAV20SIB**	SPARE PART
	Electronic power unit	EVNL-060030-40	120-277 Vac	**LEDDEVL060/2**	SPARE PART
		EVNL-060040-40		**LEDDEVL060/2/1**	
		EVNL-060050-40		**LEDDEVL060/2**	
		EVNL-070050-40	120-277 Vac	**LEDDEVL070/1**	
		EVNL-070060-40		**LEDDEVL070/1/2**	
		EVNL-070070-40		**LEDDEVL070/1/3**	
		EVNL-070080-40		**LEDDEVL080/4/1**	
		EVNL-080080-40	120-277 Vac	**LEDDEVL080/4/2**	
		EVNL-080090-40		**LEDDEVL080/4/3**	
		EVNL-080100-40		**LEDDEVL080/4/4**	
		EVNL-080120-40		**LEDDEVL080/5/2**	
		EVNL-100140-40	120-277 Vac	**LEDDEVL100/1/1**	
		EVNL-100160-40		**LEDDEVL100/1/5**	
		EVNL-100180-40		**LEDDEVL100/1/2**	
		EVNL-100200-40		**LEDDEVL100/1/3**	
		EVNL-100220-40		**LEDDEVL100/1/4**	
	Glass + gasket	EVNL-060...-40	Tempered front glass and black gasket	**G-831 + G-944**	SPARE PART
		EVNL-070...-40		**G-830 + G70-955**	
		EVNL-080...-40		**G-829 + G80-955**	
		EVNL-100...-40		**G-852 + G100-955**	

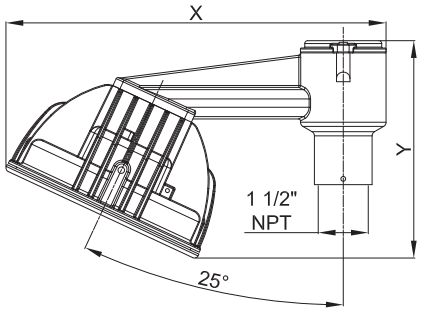
Stanchion mounting with fixed orientation at 25°





Direct connection to terminal board L, N, Pe.
Posible section 1.5mm² for loop-in/loop-out.
Input of 3 single cables up to 4mm², input-output with 6 single cables up to 1.5mm²

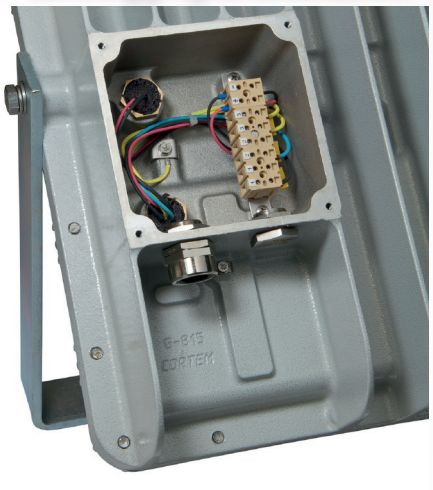
Code	X	Y	Peso kg	mm
EVNL-060...-40-IX	372	215	3,5	372x170x215
EVNL-070...-40-IX	395	226	4,1	372x327x226
EVNL-080...-40-IX	419	242	5,2	351x351x242
EVNL-100...-40-IX	478	280	9,9	412x412x280



SLED-ME

- Zone 1, 2, 21, 22
- Mechanical strength
- Reliability over time
- Instant, bright illumination
- IK11

Ex e terminal board housing for fast connection



SLED-ME series LED floodlights " square shaped beam"

SLED-ME series floodlights with LED technology combine lightweight, compact design, high performance in terms of reliability, safety, efficiency and energy saving. The finned body of the floodlight acts as a heat sink for the LED plate, allowing the installation of greater light output without incurring the deterioration of the LEDs. The flat protective glass is resistant to shocks and high temperatures and ensures an environment friendly lighting. Due to their high luminous output and to a white light with a colour rendering index greater than 70, SLED-ME series floodlights are able to replace the traditional rectangular floodlights that use discharge lamps sodium vapour or metal halide, guaranteeing lighting quality and visual comfort.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Anti light pollution | Offshore plants | Onshore plants | Perimeter lighting | Oil loading/ unloading jetties | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD - Ex db eb IIB+H_2 T... Gb - Ex tb IIIC T...°C Db - IP66			
Certification:	ATEX CML 19 ATEX 1312			
	IECEx IECEx CML 17.0004	All IEC Ex, UKEX and INMETRO certification data can be downloaded at www.cortemgroup.com		
	UKEX AVAILABLE			
	INMETRO DNV 19.0034 X For SLED-250, SLED-400, SLED-600, SLED-1000			
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-1: 2014-06, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Degree of protection:	IP66			

Ambient temperature, class. temperature, max. surface temperature:

Old code	Code	(IIB+H_2)		(only for IIB)	
SLED-250	SLED-ME-250120	-20°C +40°C T6/85°C	-20°C +60°C T5/100°C	-40°C +40°C T6/85°C	-40°C +60°C T5/100°C
SLED-401	SLED-ME-250180	-20°C +40°C T5/98°C	-	-40°C +40°C T5/99°C	-
SLED-400	SLED-ME-400200	-20°C +40°C T6/85°C	-20°C +60°C T5/100°C	-40°C +40°C T6/85°C	-40°C +60°C T5/100°C
SLED-601	SLED-ME-400300	-20°C +40°C T5/90°C	-20°C +50°C T5/100°C	-40°C +40°C T5/90°C	-40°C +50°C T5/100°C
SLED-600	SLED-ME-600300	-20°C +40°C T6/85°C	-20°C +60°C T5/100°C	-40°C +40°C T6/85°C	-40°C +60°C T5/100°C
SLED-1000	SLED-ME-600400	-20°C +40°C T5/93°C	-20°C +50°C T4/103°C	-40°C +40°C T5/93°C	-40°C +50°C T4/103°C
SLED-1001	SLED-ME-600500	-20°C +40°C T6/85°C	-20°C +55°C T5/100°C	-40°C +40°C T6/85°C	-40°C +55°C T5/100°C

SLED-ME series LED floodlights " square shaped beam"

SLED-ME-250180

SLED-ME-400300

SLED-ME-600400 ...600500

For more information on electrical connectors

EXEMPT FROM PHOTOBIOLOGICAL RISK (STANDARD IEC / EN 62471)

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body: Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face: Shock and temperature resistant tempered glass sealed with aluminium ring
Supporting bracket: Galvanised steel
Gaskets: Acid, hydrocarbon and high temperature resistant silicone
Bolts and screws: Stainless steel
Entries: 2 x ISO M20 entries (SLED-ME-250120, SLED-ME-250180);
(Floodlight kit with plug PLG1IB and cable gland NAVS20IB)
ISO M25 entries (SLED-ME-400200, SLED-ME-400300, SLED-ME-600300, SLED-ME-600400, SLED-ME-600500)
(Floodlight kit with plug PLG2IB and cable gland NAV25IB)
Coating: Polyester coating Ral 7035 (Light grey)

Corrosion Resistance: The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

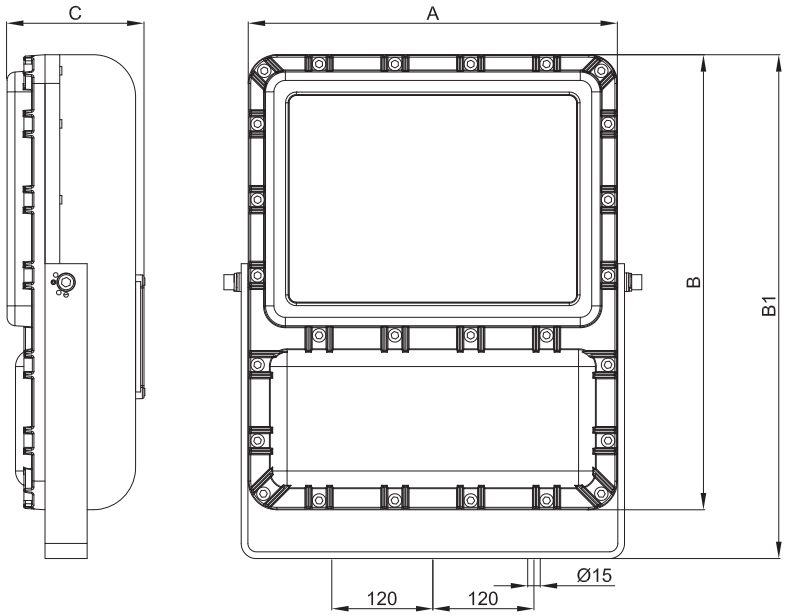
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different colour temperature (code SLED-ME-250120**/2700K**)

SLED-ME series LED floodlights " square shaped beam"

	Code	Dimensions mm A	B	B1	C	Watt	Class / Max surface temp. °C TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Weight kg	mm
Zona 1, 2, 21, 22	SLED-ME-250120	310	360	460	135	122 W	T6/85°C	-	-	T5/100°C	13,5	470x345x150
	SLED-ME-250180	310	360	460	135	180 W	T5/98°C	-	-	-	13,5	470x345x150
	SLED-ME-400200	360	444	520	145	186 W	T6/85°C	-	-	T5/100°C	20,3	540x410x180
	SLED-ME-400300	360	444	520	145	290 W	T5/90°C	T5/100°C	-	-	20,3	540x410x180
	SLED-ME-600300	440	540	600	165	290 W	T6/85°C	-	-	T5/100°C	32,4	600x465x180
	SLED-ME-600400	440	540	600	165	400 W	T5/93°C	T4/103°C	-	-	32,4	600x465x180
	SLED-ME-600500	440	540	600	165	500 W	T6/85°C	T5/95°C	T5/T100°C	-	32,4	600x465x180

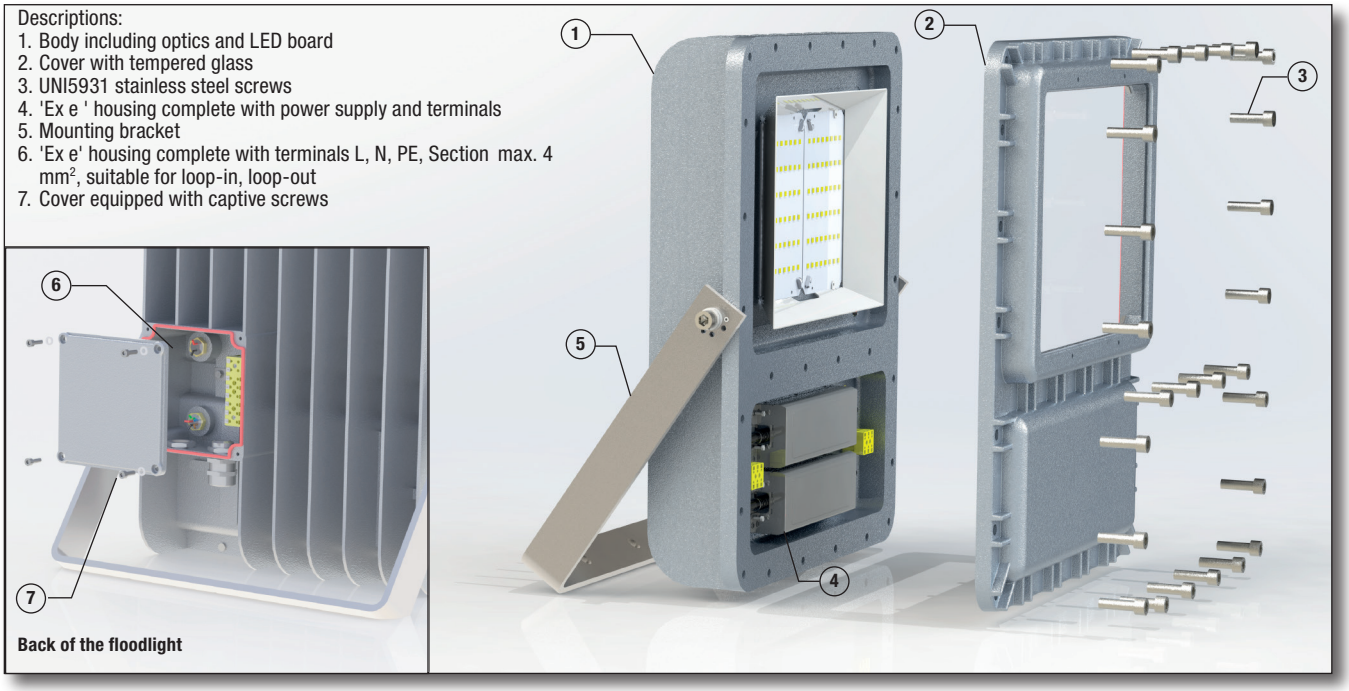
DIMENSIONAL DRAWING



Dimensions in mm

EXPLODED DIAGRAM OF SLED-ME-600300 FLOODLIGHT

Descriptions:
1. Body including optics and LED board
2. Cover with tempered glass
3. UNI5931 stainless steel screws
4. 'Ex e ' housing complete with power supply and terminals
5. Mounting bracket
6. 'Ex e' housing complete with terminals L, N, PE, Section max. 4 mm², suitable for loop-in, loop-out
7. Cover equipped with captive screws

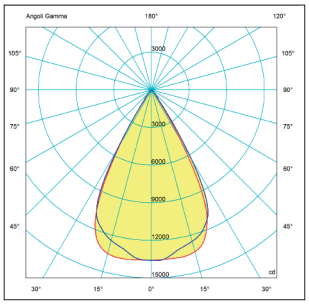


Back of the floodlight

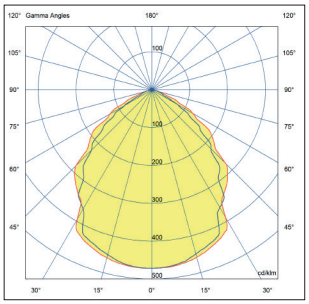
SLED-ME series LED floodlights " square shaped beam"

Electrical features	SLED-ME-250120	SLED-ME-250180	SLED-ME-400200
Power supply:	100-277 Vac ±10%	110-277 Vac ±10%	110-277 Vac ±10%
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	122 W	171 W	186 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out		
Power factor*:	>0,95	>0,95	>0,95
Rated current*:	559 mA	760 mA	820 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...		
THD (total harmonic distortion):	<10%	<10%	<10%
Over-voltage protection:	2 kV	6-10 kV	4 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection		
Dimmer (on request):	(0-10 V) o PWM	(0-10 V) o PWM	(0-10 V)
Photometric features			
LED:	Cree	Cree	Cree
Viewing angle::	60°	120°	120°
Type:	Cool White	Cool White	Cool White
Colour temperature:	~ 5700 K	~ 5000 K	~ 5000 K
CRI**:	>70	>70	>70
Instant Restrike:	YES	YES	YES
L90:	> 72600 h	109000 h	109000 h
Lumen:	**12387 lm**	**19340 lm**	**22181 lm**
Maximum light intensity:	**5206 cd**	**9128 cd**	**9705 cd**
Overall efficiency:	**101 lm/W**	**113 lm/W**	**119 lm/W**

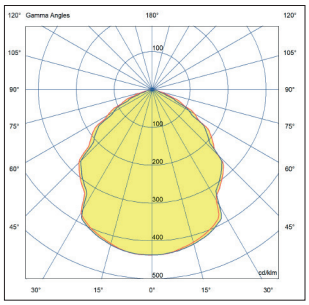
** Test at 230Vac*
*** Different CRI on request*



SLED-ME-250120
Luminous flux: 12387 lm



SLED-ME-250180
Luminous flux: 19340 lm



SLED-ME-400200
Luminous flux: 22181 lm

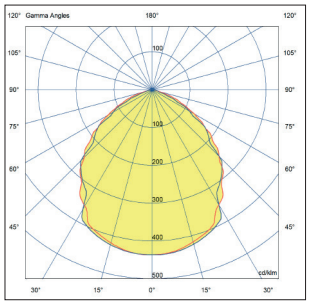
On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

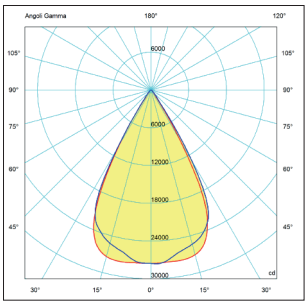
SLED-ME series LED floodlights " square shaped beam"

Electrical features	SLED-ME-400300	SLED-ME-600300	SLED-ME-600400	SLED-ME-600500
Power supply:	100-277 Vac ±10%	120-277 Vac ±10%	110-277 Vac ±10%	110-277 Vac ±10%
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	290 W	290 W	400 W	500 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out			
Power factor*:	>0,95	>0,97	>0,95	>0,95
Rated current*:	1290 mA	1303 mA	1760 mA	2150 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...			
THD (total harmonic distortion):	<10%	<10%	<10%	<10%
Over-voltage protection:	6 kV	4 kV	4-6 kV	4-6 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection			
Dimmer (on request):	(0-10 V) / PWM	(0-10 V)	(0-10 V) / PWM	(0-10 V) / PWM
Photometric features				
LED:	Cree	Cree	Cree	Cree
Viewing angle::	120°	60°	120°	120°
Type:	Cool White	Cool White	Cool White	Cool White
Colour temperature:	~ 5000 K	~ 5700 K	~ 5000 K	~ 5000 K
CRI**:	>70	>70	>70	>70
Instant Restrike:	YES	YES	YES	YES
L90:	109000 h	> 72600 h	109000 h	109000
Lumen:	**36418 lm**	**30799 lm**	**52368 lm**	**60658 lm**
Maximum light intensity:	**15912 cd**	**33976 cd**	**20577 cd**	**23922 cd**
Overall efficiency:	**125 lm/W**	**106 lm/W**	**131 lm/W**	**123 lm/W**

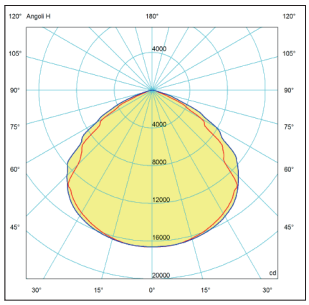
** Test at 230Vac*
*** Different CRI on request*



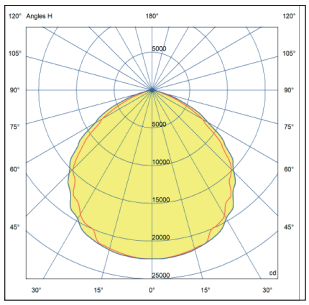
SLED-ME-400300
Luminous flux: 36418 lm



SLED-ME-600300
Luminous flux: 30799 lm



SLED-ME-600400
Luminous flux: 52368 lm

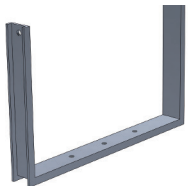
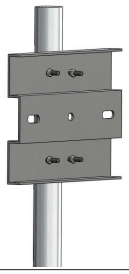
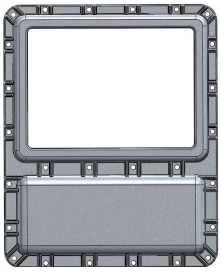
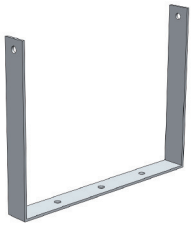
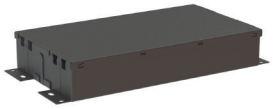


SLED-ME-600500
Luminous flux: 60658 lm

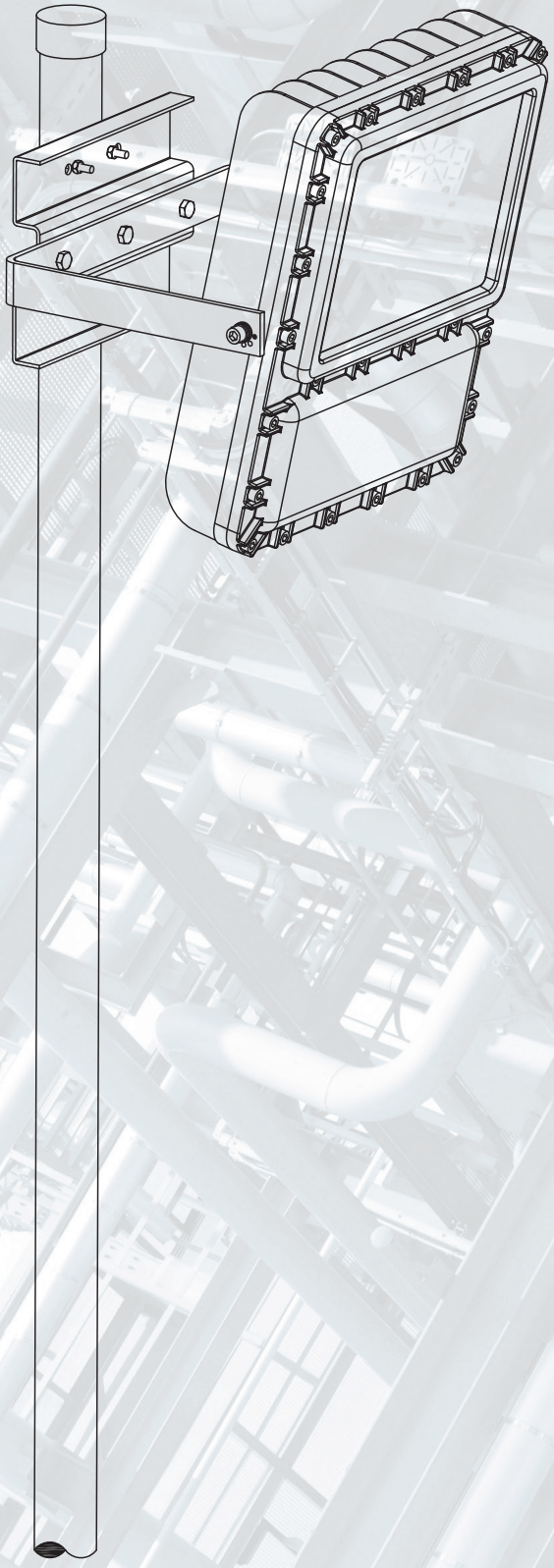
On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

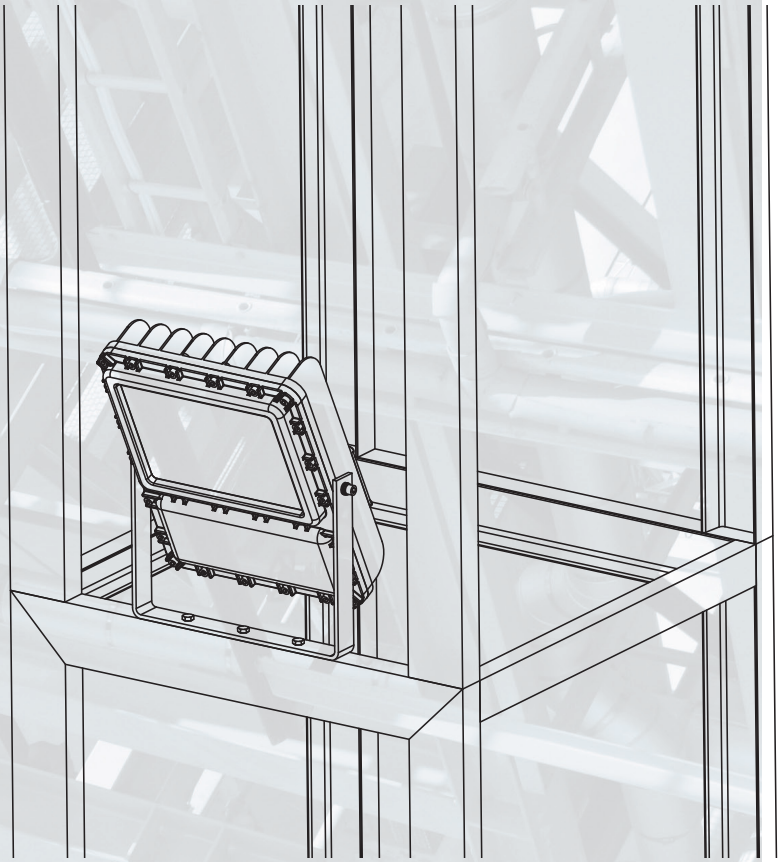
SLED-ME series Accessories and spare parts available on request

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Reinforced supporting bracket for mounting on movement facilities	SLED-ME-600...	Material: galvanised steel	**G-558/1**	ACCESSORY SPARE PART
	Frame for pole mounting	For all models	Material: galvanised steel	**G-0534**	ACCESSORY SPARE PART
	Swivel base for 360° adjustment	SLED-ME-400... SLED-ME-600...	Material: aluminum RAL 7035 painted	**G-326** **+** **G-327**	ACCESSORY SPARE PART
	Cable gland for nonarmored cables	SLED-ME-250...	std. range cable 6,3÷11,6	**NAV20SIB**	ACCESSORY SPARE PART
		SLED-ME-400... SLED-ME-600...	std. range cable 11÷20	**NAV25IB**	
	Front ring with glass	SLED-ME-250...	Low copper content aluminium alloy with tempered glass	**G250-0622**	SPARE PART
		SLED-ME-400...		**G400-0622**	
		SLED-ME-600...		**G-0622**	
	Supporting bracket	SLED-ME-250...	Material: galvanised steel	**G-901**	SPARE PART
		SLED-ME-400...		**G-896**	
		SLED-ME-600...		**G-558**	
	Electonic driver	SLED-ME-250120	100-277 Vac	**LEDDEVL100**	RECAMBIO
		SLED-ME-400200	110-277 Vac	**LEDDEVL100/1/1**	
		SLED-ME-600300	120-277 Vac	**LEDDSLED600**	
		SLED-ME-250180	110-277 Vac	**LEDDEVL100/1/9**	
		SLED-ME-400300	100-277 Vac	**LEDDSLED601/1-990MA**	
		SLED-ME-600400	110-277 Vac	**LEDDEVL100/1/12 (X2)**	
		SLED-ME-600500	110-277 Vac	**LEDDEVL100/1/2 (X2)**	

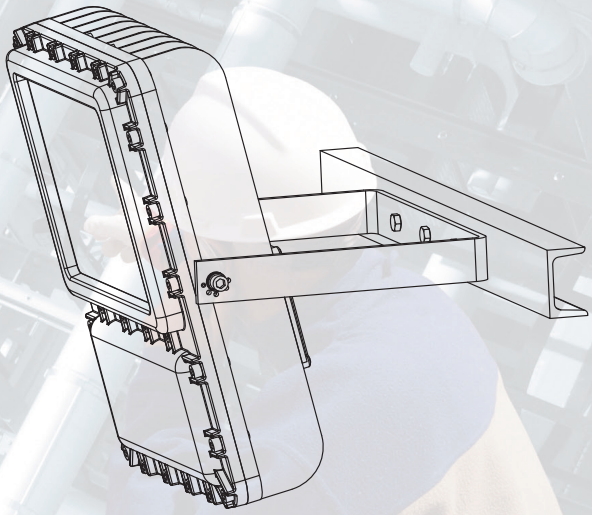
Example of pole mounting



Example of vertical mounting on structure



Example of horizontal mounting on structure



SLED-MN

- Zone 2, 21, 22
- Mechanical strength
- Reliability over time
- Instant, bright illumination

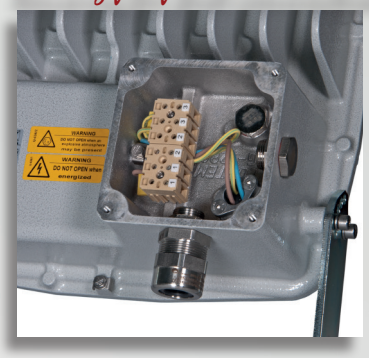
Cooling fins

Tempered glass

Painted aluminium body and cover

Mounting bracket

Ex e terminal board housing for fast connection



SLED-MN series LED floodlights

The SLED-MN series LED floodlights are designed with the 'Ex nR' and 'Ex tb' protection method to be installed in ATEX classified areas "Zone 2" and "Zone 21", where the equipment must guarantee a level of normal protection in the presence of mixtures of gases, vapors, and mists (Zone 2), and a high level of protection against dust and combustible particles (Zone 21). SLED-MN series floodlights are equipped with LED light sources that allow for a diffused light beam and an exceptional Lumen Output. The finned body acts as a heat dissipator for the LED plate and allows greater circulation of the air and water present in the surrounding environment, thus minimizing the deposit of combustible dust.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Anti light pollution | Offshore plants | Onshore plants | Perimeter lighting | Oil loading/ unloading jetties | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 3GD/2D		
Installation: EN 60079.14	zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 3GD - Ex nR IIC T... Gc - Ex tc IIIC T...°C Dc - IP66			
	CE Ex II 2D - Ex tb IIIC T... °C Db - IP 66			
Certification:	ATEX CML 19 ATEX 1312 ATEX CML 23 ATEX 4028X			
	IECEx IECEx CML 17.0004	All IEC Ex, UKEX certification data can be downloaded at www.cortemgroup.com		
	UKEX AVAILABLE			
Standards:	CENELEC EN 60079-0: 2018, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-15: 2010, IEC 60079-31: 2013 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Ambient temperature:	-60°C +60°C	For all permitted ambient temperature ranges, please see the "Selection tables"		
Degree of protection:	IP66			

SLED-MN series LED floodlights

EXEMPT FROM PHOTOBIOLOGICAL RISK (STANDARD IEC / EN 62471)

ORIGINAL PRODUCT

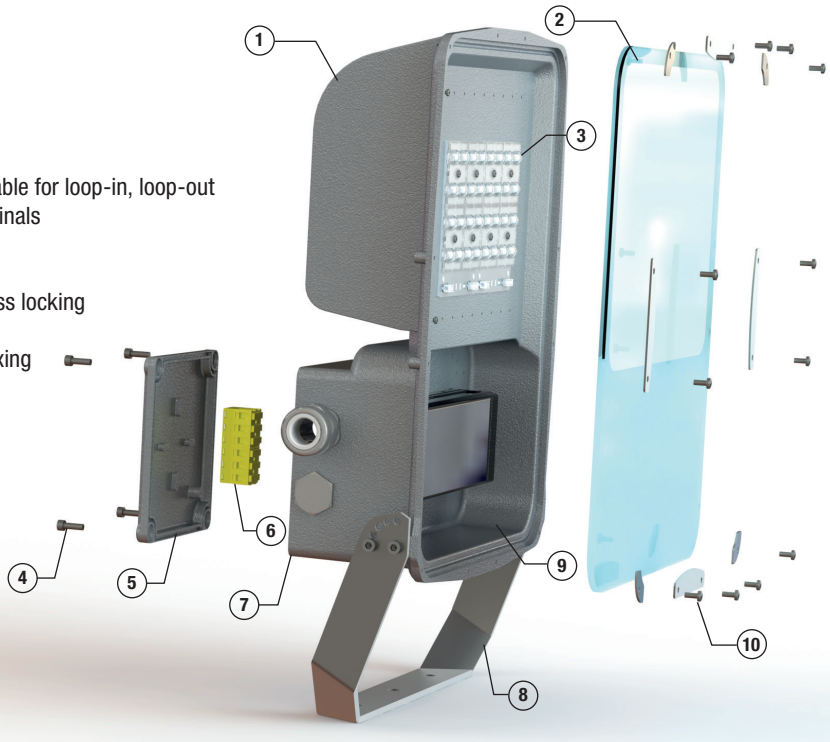
For more information on electrical connectors

MECHANICAL FEATURES

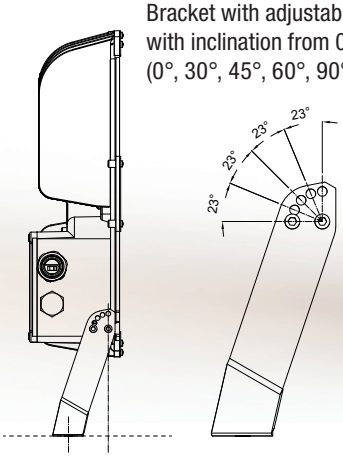
Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face:	Shock and temperature resistant tempered glass sealed with aluminium ring
Supporting bracket:	Galvanised steel
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Bolts and screws:	Stainless steel
Entries:	SLED-400...: 2 x ISO M20 entries. (Floodlight kit with plug PLG1IB and cable gland NAV20IB) SLED-600...: 2 x ISO M25 entries. (Floodlight kit with plug PLG2IB and cable gland NAV25IB)
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

EXPLODED DIAGRAM OF SLED-MN-600300 FLOODLIGHT

Descriptions:
1. Painted body
2. Tempered glass
3. LED board
4. Stainless steel screws
5. Cover for "Ex e" housing
6. Terminals L, N, PE, Section max. 4 mm², suitable for loop-in, loop-out
7. 'Ex e' housing complete with connection terminals
8. Mounting bracket
9. 'Ex nR' housing complete with power supply
10. Brackets and screws in stainless steel for glass locking

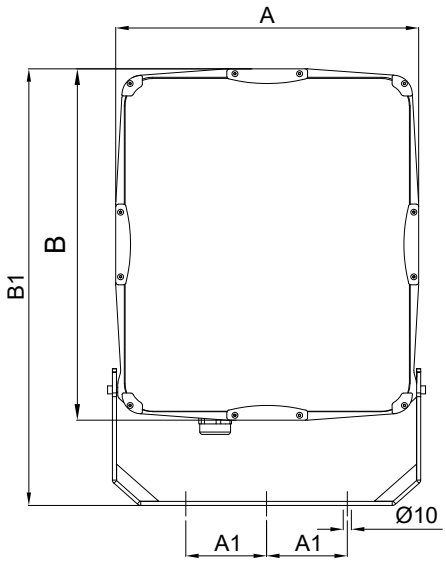


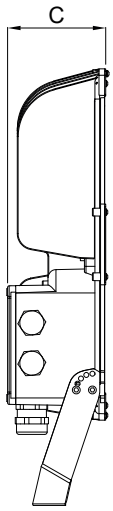
Bracket with adjustable offset fixing with inclination from 0° to 90° (0°, 30°, 45°, 60°, 90°)



	Code	Dimensions mm A	B	B1	C	A1	Watt	Class / Max surface temp. °C TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Weight kg	mm
Zona 2, 21, 22	SLED-MN-400100	315	304	395	121	70	104 W	T6/81	T5/91	T5/96	T4/101	7	420x355x145
	SLED-MN-400150	315	304	395	121	70	155 W	T5/85	T5/95	T4/100	T4/105	7,8	420x355x145
	SLED-MN-400200	315	304	395	121	70	190 W	T5/85	T5/95	T4/100	T4/105	7,8	420x355x145
	SLED-MN-600300	375	435	540	121	100	290 W	T5/83	T5/93	T4/98	T4/103	13,6	565x425x167
	SLED-MN-600400	375	435	540	121	100	394 W	T5/91	T4/101	T4/110	T4/111	13,6	565x425x167
	SLED-MN-600500	375	435	540	121	100	485 W	T5/95	T4/105	T4/110	T4/115	15,6	565x425x167

DIMENSIONAL DRAWING



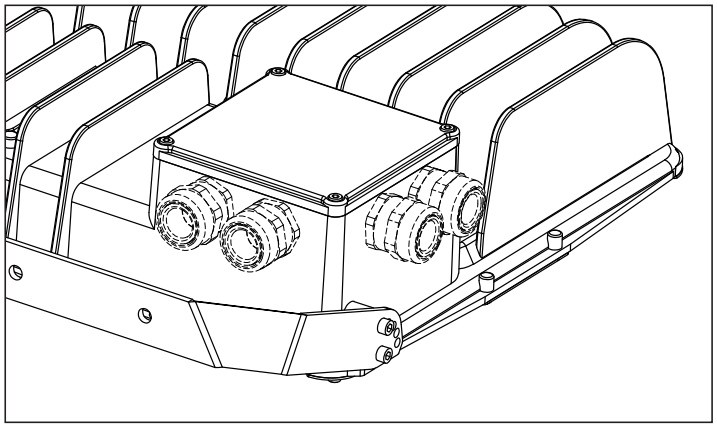


Dimensions in mm

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different colour temperature (code SLED-MN-250120**/2700K**)
Additional cable gland model NAV25SIB for unarmoured cable

Drilling for different standard cable gland entries

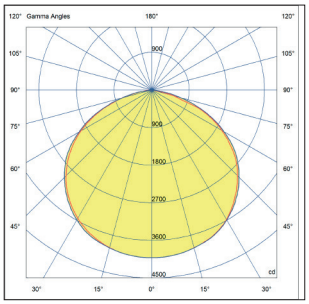


Standard drilling

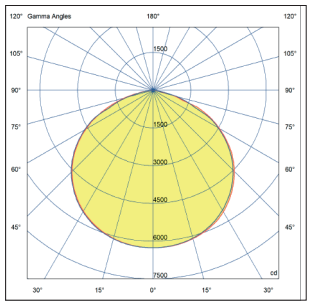
SLED-MN series LED floodlights

Electrical features	SLED-MN-400100	SLED-MN-400150	SLED-MN-400200
Power supply:	110-277 Vac ±10%	110-277 Vac ±10%	110-277 Vac ±10%
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	104 W	155 W	190 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm², suitable for loop-in/loop-out		
Power factor*:	>0,95	>0,95	>0,95
Rated current*:	460 mA	690 mA	840 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...		
THD (total harmonic distortion):	<10%	<10%	<10%
Over-voltage protection:	4-6 kV	4-6 kV	4-6 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection		
Dimmer (on request):	(0-10 V) or PWM	(0-10 V) or PWM	(0-10 V) or PWM)
Photometric features			
LED:	Cree	Cree	Cree
Viewing angle:	120°	120°	120°
Type:	Cool White	Cool White	Cool White
Colour temperature:	~ 5000 K	~ 5000 K	~ 5000 K
CRI**:	>70	>70	>70
Instant Restrike:	SI	SI	SI
L90:	109000 h	109000 h	109000 h
Lumen:	**13640 lm**	**20353 lm**	**24848 lm**
Maximum light intensity:	**4834 cd**	**7208 cd**	**8955 cd**
Overall efficiency:	**131 lm/W**	**131 lm/W**	**130 lm/W**

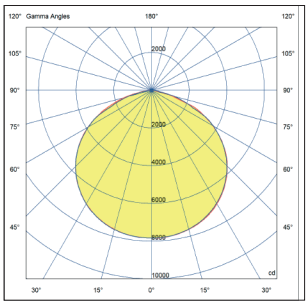
** Test at 230Vac*
*** Different CRI on request*



SLED-MN-400100
Luminous flux: 13640 lm



SLED-MN-400150
Luminous flux: 20353 lm



SLED-MN-400200
Luminous flux: 24848 lm

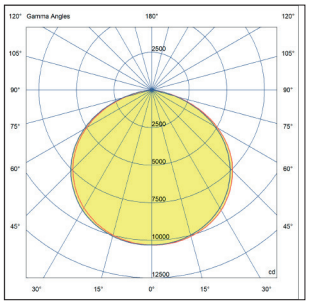
On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

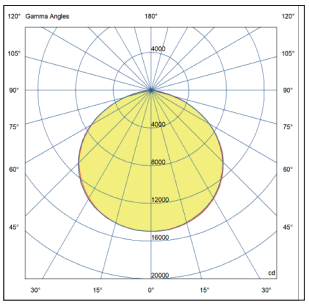
SLED-MN series LED floodlights

Electrical features	SLED-MN-600300	SLED-MN-600400	SLED-MN-600500
Power supply:	100-277 Vac ±10%	110-277 Vac ±10%	110-277 Vac ±10%
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Power consumption*:	290 W	394 W	485 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm², suitable for loop-in/loop-out		
Power factor*:	>0,95	>0,95	>0,95
Rated current*:	1300 mA	1740 mA	2130 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...		
THD (total harmonic distortion):	<10%	<10%	<10%
Over-voltage protection:	6 kV	4-6 kV	4-6 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection		
Dimmer (on request):	(0-10 V) or PWM	(0-10 V) or PWM	(0-10 V) or PWM
Photometric features			
LED:	Cree	Cree	Cree
Viewing angle:	120°	120°	120°
Type:	Cool White	Cool White	Cool White
Colour temperature:	~ 5000 K	~ 5000 K	~ 5000 K
CRI**:	>70	>70	>70
Instant Restrike:	SI	SI	SI
L90:	109000 h	109000 h	109000 h
Lumen:	**44807 lm**	**56323 lm**	**64751 lm**
Maximum light intensity:	**15858 cd**	**19954 cd**	**22936 cd**
Overall efficiency:	**154 lm/W**	**143 lm/W**	**133 lm/W**

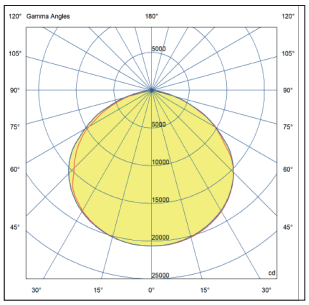
* *Test at 230Vac*
** *Different CRI on request*



SLED-MN-600300
Luminous flux: 44807 lm



SLED-MN-600400
Luminous flux: 56323 lm

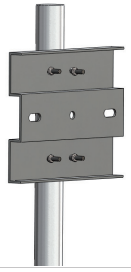
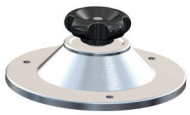
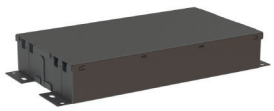


SLED-MN-600500
Luminous flux: 64751 lm

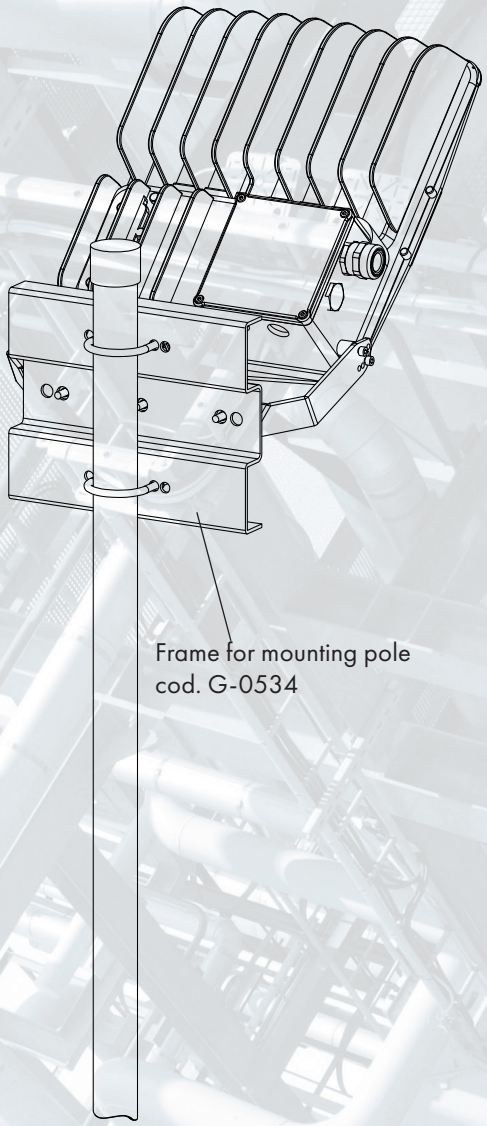
On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

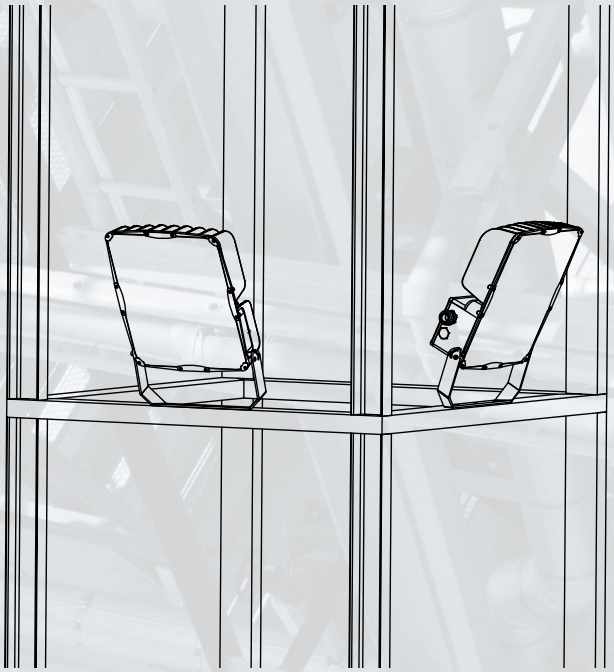
SLED-MN series Accessories and spare parts available on request

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Frame for pole mounting	For all models	Material: galvanised steel	**G-0534**	ACCESSORY SPARE PART
	Swivel base for 360° adjustment	SLED-MN-...	Material: aluminum RAL 7035 painted	**G-153 + G-161**	ACCESSORY SPARE PART
	Cable gland for nonarmored cables	SLED-MN-...	std. range cable 6,5÷14	**NAV20IB**	ACCESSORY SPARE PART
			std. range cable 11÷20	**NAV25IB**	
	Front glass	SLED-MN-400...	Material: tempered glass	**G-1283**	SPARE PART
		SLED-MN-600...		**G-1275**	
	Supporting bracket	SLED-MN-400...	Material: galvanised steel	**G-1282**	SPARE PART
		SLED-MN-600...		**G-1276**	
	LED board	SLED-MN-400100		**G-1373/2**	SPARE PART
		SLED-MN-400150		**G-1373/2 (x2)**	
		SLED-MN-400200		**G-1373/2 (x2)**	
		SLED-MN-600300		**G-1371**	
		SLED-MN-600400		**G-1371 (X2)**	
		SLED-MN-600500		**G-1371 (X2)**	
	Power supply	SLED-MN-400100	110-277 Vac	**LEDDEVL080/4/4**	SPARE PART
		SLED-MN-400150	110-277 Vac	**LEDDEVL100/1/11**	
		SLED-MN-400200	110-277 Vac	**LEDDEVL100/1/3**	
		SLED-MN-600300	100-277 Vac	**LEDDSLED601/1-990MA**	
		SLED-MN-600400	110-277 Vac	**LEDDEVL100/1/12 (X2)**	
		SLED-MN-600500	110-277 Vac	**LEDDEVL100/1/2 (X2)**	

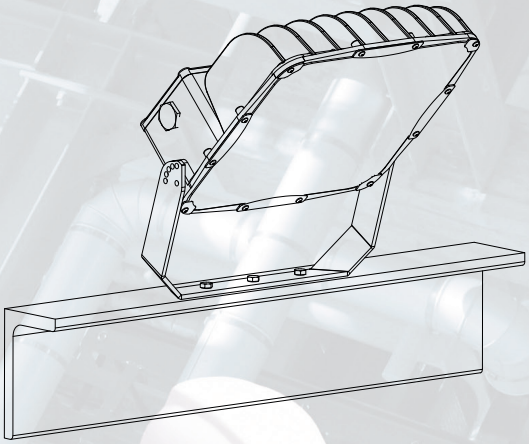
Example of pole mounting



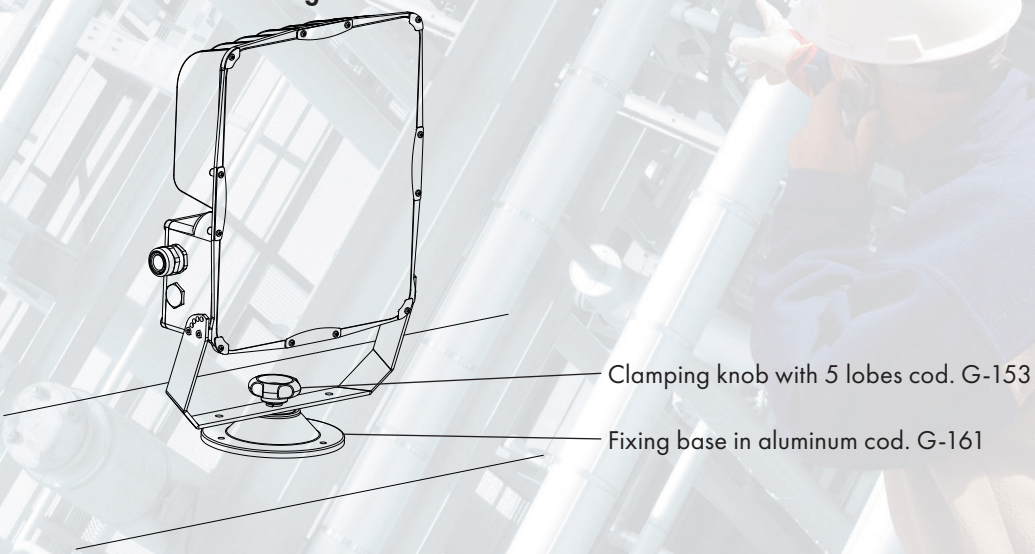
Example of vertical mounting on structure



Example of horizontal mounting on structure



Example with base for swivel fixing



Lifex-M

- Complete with high efficiency LED strip lights
- Low consumption
- Compact size
- Easy to install
- Zone 1, 2, 21, 22
- 5 years warranty
- IK09 (IK10 with protective cage)

PATENTED

Fastening brackets adjustable

Aluminium alloy extrusion

Metal cable glands

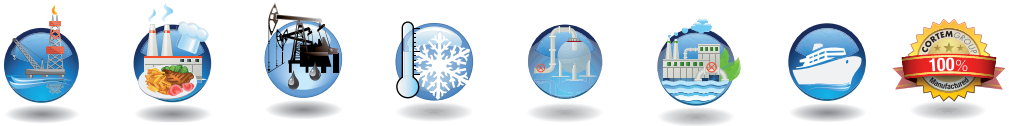
Fastening brackets with 2 holes M8, adjustable 0° to ±30°
"Cortem Group Technology"

CORTEM GROUP®

LifEx-M series Linear LED lighting fixture in aluminum

LifEx-M lighting fixtures are the first LED native linear fixtures, featuring an innovative design by Cortem Group, created in response to customer requirements.
The product architecture has been carefully designed. The aim is to manage the full product lifecycle optimally as part of a circular economy, and maximise the product's useful life. The result is a compact, lightweight lighting fixture that is easy to install, while also being robust and long lasting.
They feature a high-quality anodised aluminium body and a glass diffuser which is resistant to impact and high temperatures. They have an innovative bracket mechanism, with no fixed interaxis spacing limitations, which makes them easy to install or retrofit and means the lighting fixture can be rotated to -30°/0°/+30°. The LifEx range comes in different lengths with a wide array of voltage and power specifications. The range has been optimally designed and certified according to the installation zone and, in addition to passing all tests required by the regulations, it has passed additional mechanical and electrical tests such as vibration testing, IP66, soft start, surge testing and more.
The use of high-power LED strip lights provides a lumen output from 1,000 lm to 15,500 lm, making the range highly efficient and long lasting in terms of its electronics and light engineering.

Sectors of application:



Offshore facilities | Agribusiness facilities | Onshore facilities | Low temp. environments | Chemical and petrochemical facilities | Waste water treatment plants | Naval installations | 100% produced by Cortem

CERTIFICATE DATA

Classification:	Group II	Category 2GD/3G	
Installation: EN 60079.14	zone 1, 2, 21, 22 *LifEx-ME*	zone 2, 21, 22 *LifEx-MN*	
Marking:	CE 0722 Ex II 2GD - Ex db eb mb IIC T.. Gb - Ex tb IIIC T..°C Db - IP66		*LifEx-ME*
	CE Ex II 3G - Ex nR IIC T.. Gc CE 0722 Ex II 2D - Ex tb IIIC T..°C Db - IP66		*LifEx-MN*
Certificate:	ATEX CML 20 ATEX 3018X		*LifEx-ME*
	ATEX CML 20 ATEX 3019X ATEX CML 20 ATEX 3018X		*LifEx-MN*
	IEC Ex CML 20.0008X	For all IEC Ex, INMETRO, TR CU and UKEX certificate data download the certificate from www.cortemgroup.com	
	UKEX AVAILABLE		
	INMETRO AVAILABLE		
	UL PENDING		
Standards:	CENELEC EN60079-0: 2018, EN60079-1: 2014, EN60079-7: 2015-18, EN60079-15: 2019, EN60079-18: 2015-17, EN60079-31: 2024, EN60598-2-22 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-15: 2017, IEC60079-18: 2017, IEC60079-31: 2022, IEC60079-7: 2017 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS		
Temperature class:	For all permitted ambient temperature classes, please see the "Selection tables"		
Ambient temperature:	-60°C for models without a battery -20°C or -60°C* for versions with a battery	For all permitted ambient temperature ranges, please see the "Selection tables"	
Degree of protection:	IP66		

-60°C

* Emergency lighting fixture with special battery for -60°C

LifEx-M series Linear LED lighting fixture in aluminum

NO PHOTOBIOLOGICAL RISK
(IEC / EN 62471 STANDARD)

ORIGINAL PRODUCT

For more information on electrical connectors

MECHANICAL FEATURES

Body:	Aluminium alloy extrusion and end caps, resistant to atmospheric and marine corrosion
Clear part:	Tempered glass resistant to shocks, impact and UV rays
Gaskets:	Acid and hydrocarbon resistant silicone
Internal frame:	Aluminium extrusion
Screws:	Stainless steel
Entry points:	Max. 4 entries Ø25.5. Standard version with 2 holes Ø20.5 side (1) complete with 1 NAV20IB and 1 PLG1IB. For the other versions, plugs and cable glands are on request
Assembly:	Fastening brackets for M8 holes, adjustable 0° to ±30°

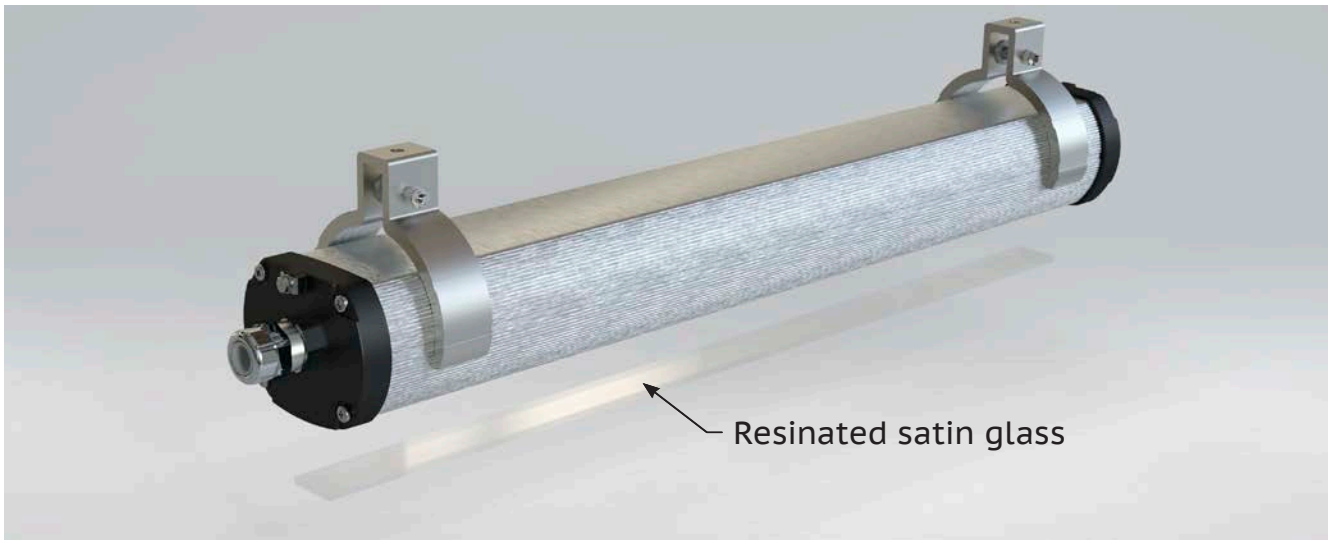
ELECTRICAL FEATURES

Power unit:	Electronic
Rated voltage:	110-277 Vac (for more information, see the Selection tables)
Rated frequency:	50/60 Hz
Connection:	Directly to the terminal board L, N, Pe cross sec. max. 4 mm^2 jumpered terminal board suitable for in-out from a single side
Emergency unit:	Electronic inverter 110/277 Vac 50/60 Hz, 110/270 Vdc. Batteries Ni/Mh, 1.8 Ah or 3 Ah, 6V Battery charging monitored by high luminosity green LED
Cabling:	Rigid cables for high temperatures

ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Pole fastening mechanism
Cage
Coloured LED strip lights
Emergency lighting fixture with battery box to facilitate battery maintenance/replacement operations (example code: LifEx-ME-1230N-A**E**)
Emergency lighting fixture with battery heater (internal component) for ambient temperatures of -60°C, supplied voltage 230Vac. (example code: LifEx-ME-1230N**H**)
Connection through wiring (code example: LifEx-ME-1230-AA**T**)
Dimming of lighting fixtures with DALI standard (Contact our Sales Office for availability)
Driver multirange
Vdc voltage range
Cable gland and plugs
Electrical connectors

The LifEx is a range of tubular LED lighting fixtures that are available in two different configurations for different applications, designated as the LifEx-ME and LifEx-MN.



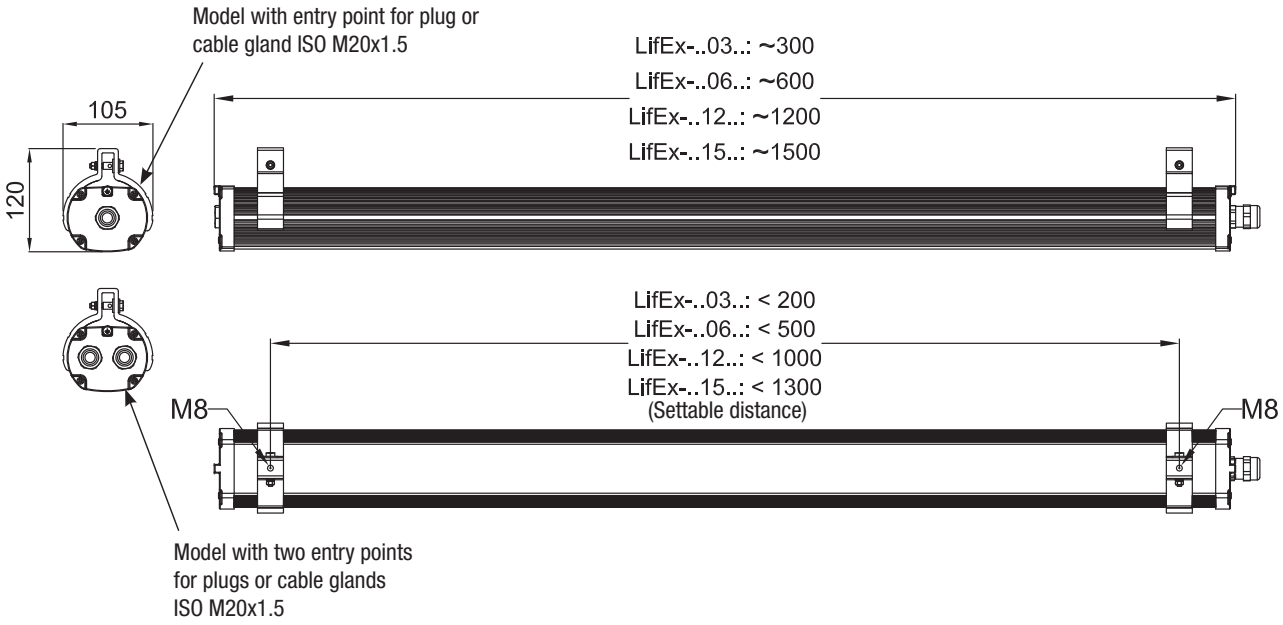
LifEx-ME

The "ME" versions are designed to be used in ATEX areas classified as "Zone 1-2" and "Zone 21-22", that is where the equipment installed must guarantee a high level of protection both in the presence of mixtures of gases, vapours and mists (Zone 1) and in the presence of combustible dusts and particles (Zone 21). LifEx-ME has an EPL (Equipment Protection Level) Gb, Db.
This safety is guaranteed by a combination of protection methods 'Ex db eb mb' for gas and 'Ex tb' for dust.

LifEx-MN

The "MN" versions are designed to be used in ATEX areas classified as "Zone 2" and "Zone 21-22", that is where the equipment installed must guarantee a normal level of protection in the presence of mixtures of gases, vapours and mists (Zone 2), and a high level of protection against dusts and combustible particles (Zone 21). LifEx-MN has an EPL (Equipment Protection Level) Gc, Db.
This safety is guaranteed by the 'Ex nR' protection methods for gases and 'Ex tb' for dusts.

DIMENSIONAL DRAWING



LifEx-M series Linear LED lighting fixture in aluminum

Selection table.

Temperature classes and maximum surface temperatures.

Normal operation

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
LifEx-ME-0315	13,9	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	1865	738	134	1,5	541x103x132
LifEx-ME-0330	26,6	30,0	220-240 Vac	T58°C/T6	T68°C/T6	T78°C/T5	3697	1345	140	1,5	541x103x132
LifEx-ME-0615	15,0	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	2008	777	134	2,5	840x103x132
LifEx-ME-0630	26,2	30,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	3677	1345	140	2,5	840x103x132
LifEx-ME-0645	43,5	45,0	110-277 Vac	T83°C/T5	T93°C/T5	-	6200	2248	143	2,5	840x103x132
LifEx-ME-0660	54,5	60,0	110-277 Vac	T95°C/T5	-	-	8011	2924	147	2,5	840x103x132
LifEx-ME-1230	29,0	30,0	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	4112	1451	142	3,5	1398x103x132
LifEx-ME-1260	55,7	60,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	8316	2930	149	3,5	1398x103x132
LifEx-ME-1290	79,3	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	12228	4323	154	3,5	1398x103x132
LifEx-ME-12120	102,6	120,0	220-277 Vac	T91°C/T5	T101°C/T4	-	16029	5662	156	3,4	1398x103x132
LifEx-ME-1590	78,6	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	11926	4204	152	4,0	1738x103x132

Normal operation + emergency

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm **	Discharge time in minutes	Weight kg	mm
LifEx-ME-0615N	15,0	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	980	90	3,0	840x103x132
LifEx-ME-0630N	26,2	30,0	220-240 Vac	T80°C/T6	T90°C/T5	T100°C/T4	980	90	3,0	840x103x132
LifEx-ME-1230N*	29,0	30,0	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	994	180	4,5	1398x103x132
LifEx-ME-1260N*	55,7	60,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	994	180	4,5	1398x103x132
LifEx-ME-1590N*	78,6	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	932	180	5,0	1738x103x132

Emergency operation only

Code	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm	Discharge time in minutes	Weight kg	mm
LifEx-ME-0615E*	110-277 Vac	T57°C/T6	T67°C/T6	T77°C/T6	1167	90	2,5	840x103x132
LifEx-ME-1230E*	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	1151	90	3,5	1398x103x132

* Models with emergency feature available -60°C

** Lumen in emergency operation.
The lumens in normal operation are the same as the versions without "N".

ORDER CODE LOGIC

LifEx-ME [ ][ ][ ] Options [ ][ ][ ]

LifEx-ME Fixed code
Zone 1, 2, 21, 22

Lighting fixture length
03 300 mm per 15W, 30W
06 600 mm per 15W, 30W, 45W, 60W,
12 1200 mm per 30W, 60W, 90W, 120W
15 1500 mm per 90W

Lighting fixture power
15 15W **60** 60W
30 30W **90** 90W
45 45W **120** 120W

Operation
n.a. Normal
N Normal + emergency
E Emergency only
NH Normal + emergency for -60°C. Supplied voltage 230Vac.
EH Emergency only for -60°C. Supplied voltage 230Vac.

Position of internal connection terminals

(1) Number and type of holes for side cable entry (1)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5

(2) Number and type of holes for side cable entry (2)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5
X Without holes
E Battery box

n.a. Standard lighting fixture with 2 holes ∅20,5 on the side (1) (with 1xNAV20IB 1xPLG1IB) cover without holes on the side (2) Example code LifEx-ME-0615 **n.a.**

Assembly
n.a. N ° 2 fixings (Standard)
IX Pole mount mechanism

CORTEM GROUP®

LifEx-M series Linear LED lighting fixture in aluminum

Selection table.

Temperature classes and maximum surface temperatures.

Normal operation

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
LifEx-MN-0315	13,9	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	1865	738	134	1,5	541x103x132
LifEx-MN-0330	26,6	30,0	220-240 Vac	T58°C/T6	T68°C/T6	T78°C/T5	3697	1345	140	1,5	541x103x132
LifEx-MN-0615	15,0	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	2008	777	134	2,0	840x103x132
LifEx-MN-0630	26,2	30,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	3677	1345	140	2,0	840x103x132
LifEx-MN-0645	43,5	45,0	110-277 Vac	T83°C/T5	T93°C/T5	-	6200	2248	143	2,0	840x103x132
LifEx-MN-0660	54,5	60,0	110-277 Vac	T95°C/T5	-	-	8011	2924	147	2,0	840x103x132
LifEx-MN-1230	29,0	30,0	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	4112	1451	142	3,0	1398x103x132
LifEx-MN-1260	55,7	60,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	8316	2930	149	3,0	1398x103x132
LifEx-MN-1290	79,3	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	12228	4323	154	3,0	1398x103x132
LifEx-MN-12120	102,6	120,0	220-277 Vac	T91°C/T5	T101°C/T4	T111°C/T4	16029	5662	156	3,4	1398x103x132
LifEx-MN-1590	78,6	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	11926	4204	152	3,5	1738x103x132

Normal operation + emergency

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm **	Discharge time in minutes	Weight kg	mm
LifEx-MN-0615N	15,0	15,0	220-240 Vac	T57°C/T6	T67°C/T6	T77°C/T6	980	90	3,0	840x103x132
LifEx-MN-0630N	26,2	30,0	220-240 Vac	T80°C/T6	T90°C/T5	T100°C/T4	980	90	3,0	840x103x132
LifEx-MN-1230N*	29,0	30,0	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	994	180	4,5	1398x103x132
LifEx-MN-1260N*	55,7	60,0	110-277 Vac	T80°C/T6	T90°C/T5	T100°C/T4	994	180	4,5	1398x103x132
LifEx-MN-1590N*	78,6	90,0	120-277 Vac	T89°C/T5	T99°C/T4	T109°C/T4	932	180	5,0	1738x103x132

Emergency operation only

Code	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm	Discharge time in minutes	Weight kg	mm
LifEx-MN-0615E*	110-277 Vac	T57°C/T6	T67°C/T6	T77°C/T6	1167	90	2,0	840x103x132
LifEx-MN-1230E*	110-277 Vac	T60°C/T6	T70°C/T6	T80°C/T6	1151	90	3,0	1398x103x132

* Models with emergency feature available -60°C

** Lumen in emergency operation. The lumens in normal operation are the same as the versions without "N".

ORDER CODE LOGIC

LifEx-MN | | | | Options | | |
(1) (2)

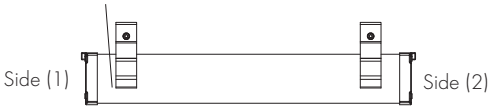
LifEx-MN Fixed code
Zone 2, 21, 22

Lighting fixture length
03 300 mm per 15W, 30W
06 600 mm per 15W, 30W, 45W, 60W,
12 1200 mm per 30W, 60W, 90W, 120W
15 1500 mm per 90W

Lighting fixture power
15 15W **60** 60W
30 30W **90** 90W
45 45W **120** 120W

Operation
n.a. Normal
N Normal + emergency
E Emergency only
NH Normal + emergency for -60°C. Supplied voltage 230Vac.
EH Emergency only for -60°C. Supplied voltage 230Vac.

Position of internal connection terminals



Number and type of holes for side cable entry (1)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5

Number and type of holes for side cable entry (2)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5
X Without holes
E Battery box

n.a. Standard lighting fixture with 2 holes ∅20,5 on the side (1) (with 1xNAV20IB 1xPLG1IB) cover without holes on the side (2) Example code LifEx-ME-0615 **n.a.**

Assembly
n.a. N ° 2 fixings (Standard)
IX Pole mount mechanism

LifEx-M series Linear LED lighting fixture in aluminum

Electrical features	LifEx-ME-03..	LifEx-ME-06..	LifEx-ME-12..	LifEx-ME-15..
Supply voltage:	**..15** 220-240 Vac	**..15** 220-240 Vac	**..30** 110-277 Vac	**..90** 120-277 Vac
	..30 220-240 Vac	**..30** 110-277 Vac	**..60** 110-277 Vac	-
	-	**..45** 110-277 Vac	**..90** 120-277 Vac	-
	-	**..60** 110-277 Vac	**..120** 220-277 Vac	-
	-	-	-	-
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Lamp real power consumption:	**..15** 13,9 W	**..15** 15,0 W	**..30** 29,0 W	**..90** 78,6 W
	..30 26,6 W	**..30** 26,2 W	**..60** 55,7 W	-
	-	**..45** 43,5 W	**..90** 79,3 W	-
	-	**..60** 54,5 W	**..120** 102,6 W	-
	-	-	-	-
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out			
Power factor:	**..15** 0,96	**..15** 0,97	**..30** 0,93	**..90** 0,98
	..30 0,99	**..30** 0,93	**..60** 0,96	-
	-	**..45** 0,93	**..90** 0,98	-
	-	**..60** 0,96	**..120** 0,98	-
	-	-	-	-
Rated current:	**..15** 70 mA	**..15** 70 mA	**..30** 150 mA	**..90** 350 mA
	..30 150 mA	**..30** 150 mA	**..60** 250 mA	-
	-	**..45** 200 mA	**..90** 350 mA	-
	-	**..60** 250 mA	**..120** 500 mA	-
	-	-	-	-
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3			
THD (Total Harmonic Distortion):	<4% 230 Vac, 50 Hz			
Over-voltage protection: (values valid for lamps in normal operation)	**..15** 2-4 kV	**..15** 2-4 kV	**..30** 4 kV	**..90** 4 kV
	..30 2-4 kV	**..30** 4 kV	**..60** 4 kV	-
	-	**..45** 4 kV	**..90** 4 kV	-
	-	**..60** 4 kV	**..120** 4 kV	-
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection			
Dimmer (on request):	0-10V PWM			
Photometric features				
Multichip LED:	Mid power			
Viewing angle:	120°			
Colour temperature:	5000 K			
CRI:	>80			
Instant Restrike:	YES			
L90:	> 54000 hours			

Electrical features	LifEx-MN-03..	LifEx-MN-06..	LifEx-MN-12..	LifEx-MN-15..
Supply voltage:	**..15** 220-240 Vac	**..15** 220-240 Vac	**..30** 110-277 Vac	**..90** 120-277 Vac
	..30 220-240 Vac	**..30** 110-277 Vac	**..60** 110-277 Vac	-
	-	**..45** 110-277 Vac	**..90** 120-277 Vac	-
	-	**..60** 110-277 Vac	**..120** 220-277 Vac	-
	-	-	-	-
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Lamp real power consumption:	**..15** 13,9 W	**..15** 15,0 W	**..30** 29,0 W	**..90** 78,6 W
	..30 26,6 W	**..30** 26,2 W	**..60** 55,7 W	-
	-	**..45** 43,5 W	**..90** 79,3 W	-
	-	**..60** 54,5 W	**..120** 102,6 W	-
	-	-	-	-
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out			
Power factor:	**..15** 0,96	**..15** 0,97	**..30** 0,93	**..90** 0,98
	..30 0,99	**..30** 0,93	**..60** 0,96	-
	-	**..45** 0,93	**..90** 0,98	-
	-	**..60** 0,96	**..120** 0,98	-
	-	-	-	-
Rated current:	**..15** 70 mA	**..15** 70 mA	**..30** 150 mA	**..90** 350 mA
	..30 150 mA	**..30** 150 mA	**..60** 250 mA	-
	-	**..45** 200 mA	**..90** 350 mA	-
	-	**..60** 250 mA	**..120** 500 mA	-
	-	-	-	-
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3			
THD (Total Harmonic Distortion):	<4% 230 Vac, 50 Hz			
Over-voltage protection: (values valid for lamps in normal operation)	**..15** 2-4 kV	**..15** 2-4 kV	**..30** 4 kV	**..90** 4 kV
	..30 2-4 kV	**..30** 4 kV	**..60** 4 kV	-
	-	**..45** 4 kV	**..90** 4 kV	-
	-	**..60** 4 kV	**..120** 4 kV	-
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection			
Dimmer (on request):	0-10V PWM			
Photometric features				
Multichip LED:	Mid power			
Viewing angle:	120°			
Colour temperature:	5000 K			
CRI:	>80			
Instant Restrike:	YES			
L90:	> 54000 hours			

LifEx-M series Linear LED lighting fixture in aluminum

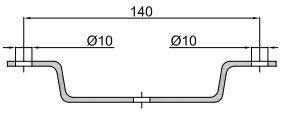
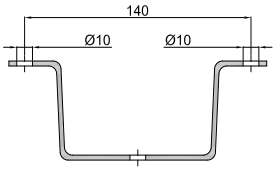
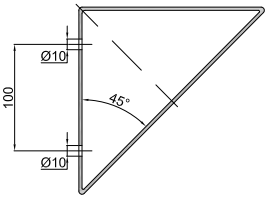
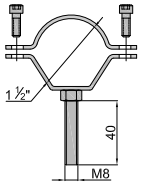
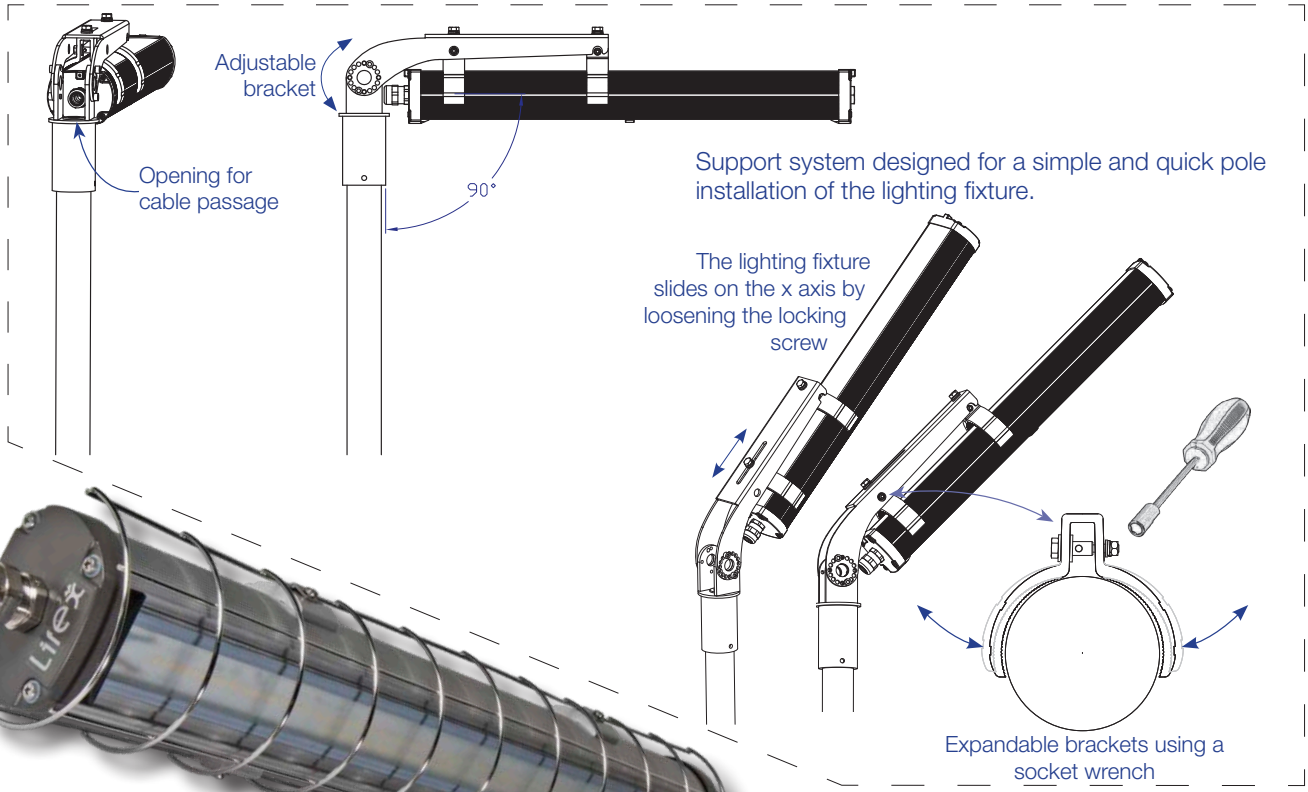
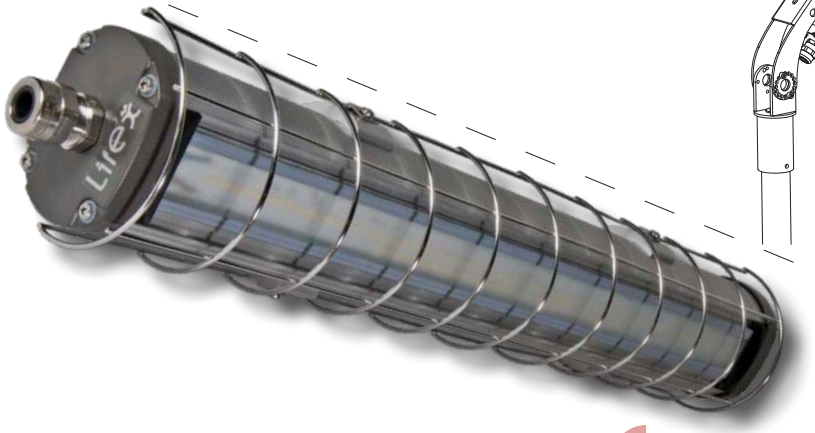
ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Rod	Length: 250 mm	Material: stainless steel	**BRF8MIN/250**	
	O-type eye bolt		Material: galvanized steel	**GOF-8**	
	Bracket type U complete with screws		Material bracket: galvanized steel screws: stainless steel	**G-0609**	
	Bracket type V complete with screws		Material bracket: galvanized steel screws: stainless steel	**G-0610**	
	Bracket type D complete with screws		Material bracket: galvanized steel screws: stainless steel	**G-0611**	
	Bracket type P		Material: galvanized steel	**G-0480**	
	Cable gland		For cable gland models and codes, please see www.cortemgroup.com	**NAV20IB**	
	Resinated electronic power unit	LifEx-ME-0615		**EBM-30L/350**	
		LifEx-ME-0330		**EBM-30L/700**	
		from LifEx-ME-0630 to LifEx-ME-1590		**EBM-100L/350**	
	Electronic power unit and inverter	LifEx-MN-0315 LifEx-MN-0330 LifEx-MN-0615		**LEDDLIFEX10**	
		from LifEx-MN-0630 to LifEx-MN-1590		**LEDDLIFEX100**	
	Electronic power unit and inverter	LifEx-ME-0615N..		**EBL4040-2-15N**	
		LifEx-ME-0630N..		**EBL4040-2-30N**	
	Resinated inverter(LifEx-ME)	LifEx-ME-1230N.. LifEx-ME-1260N.. LifEx-ME-1590N.. LifEx-ME-0615E.. LifEx-ME-1230E..		**EIM-30L**	
	Not resinated (LifEx-MN	LifEx-MN-0615N.. LifEx-MN-1630N.. LifEx-MN-1230N.. LifEx-MN-1260N.. LifEx-MN-1590N.. LifEx-MN-0615E.. LifEx-MN-1230E..		**INVERTER/LED/NM**	

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Battery for -60°C	Duration 180 minutes	3 Ah	**G-0698**	RICAMBIO
	Battery unit	LifEx-M...-...E LifEx-ME-06-...N	NiMH, 1.8Ah	**G-1096/B**	RICAMBIO
		LifEx-MN-06...N LifEx-M...-12...N LifEx-M...-15...N	NiMH, 3Ah	**G-1097/F**	
	Battery box	Duration 180 minutes	3 Ah	**G-0707/3AH**	RICAMBIO
		Duration 90 minutes	1.8 Ah	**G-0707/1.8AH**	
	Pole bracket Ø1 1/2"	LifEx-M....	Material: galvanized steel	**G-0686**	ACCESSORIO RICAMBIO
	Protective cage kit	LifEx-M...-03...	Material: Stainless steel AISI 316L with electropolishing treatment	**G01-0675**	ACCESSORIO RICAMBIO
		LifEx-M...-06...		**G1-0675**	
		LifEx-M...-12...		**G2-0675**	
		LifEx-M...-15...		**G3-0675**	
	Electrical connectors	LifEx-M....	For models and codes, visit www.cortemgroup.com	**FASTEX...**	ACCESSORIO RICAMBIO

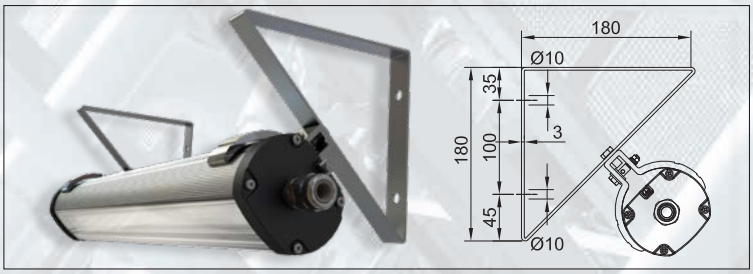
Pole mount mechanism, code G-0686





LifEx-M series lighting fixture with Kit for additional protection cage complete with support brackets and screws in stainless steel.

Typical assemblies with installation accessories



45° corner mount TYPE "D"

Ceiling mount, tall model TYPE "U"

Ceiling mount, tall model TYPE "V"

Suspended mount with eye bolt TYPE "O"

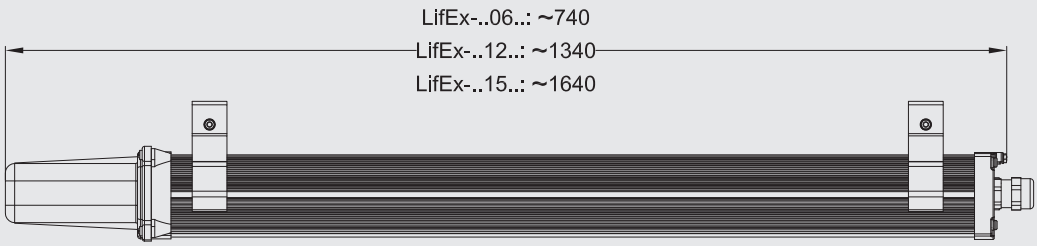
Ceiling mount with 250 mm rod

Adjustable 0° to ±30°

Mount with metal clamps 1 1/2" TYPE "P"

Emergency lighting fixture with battery box

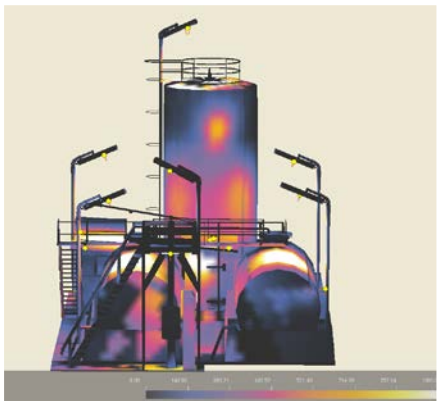
Version to facilitate battery maintenance/replacement operations.

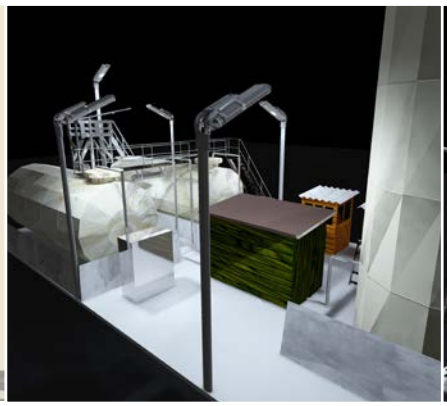


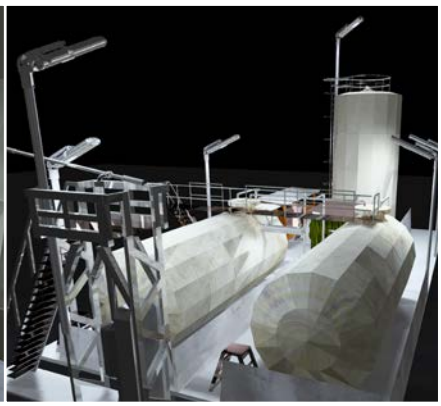
Versions available with cable entry in SIDE 1 only

Possible codes:
LifEx-M..-AE
LifEx-M..-BE
LifEx-M..-CE
LifEx-M..-DE

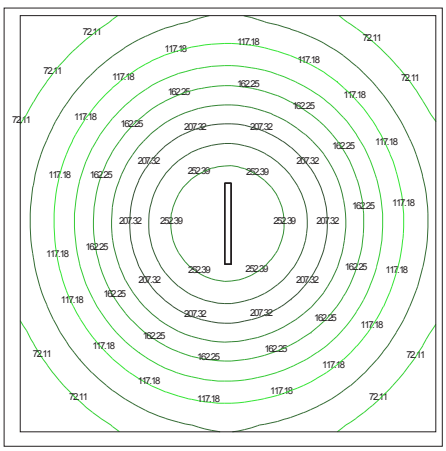
Example of light engineering study performed with LifEx lighting fixtures.

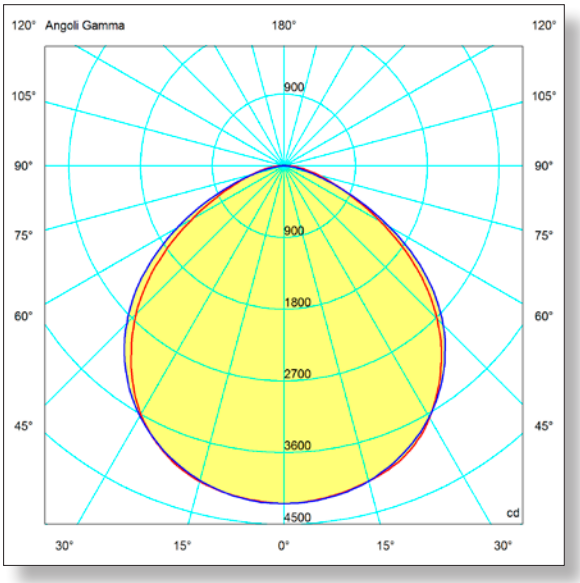






Floor lighting relating to **LifEx-ME-1590** expressed in lux in a room 6 m x 6 m with fixture at the centre at a height of **3.5 cm**.





The lighting solution files for the design, planning and simulation of lighting levels in 2D-3D, rendering and ray-tracing are available from www.cortemgroup.com.

= level 90270
= level 0180

FLFE..L

FLF..L

- Zone 1, 2, 21, 22
- With LED tubes
- Easy re-lamping
- Designed to last over time

"Ex e" terminal board housing

4 Joule shock resistant borosilicate glass

White painted reflector/frame

Simplified maintenance

Ex d execution type FLF..L

CORTEM GROUP®

FLFE...L, FLF...L series Lighting fixtures with LED tubes

Lighting fixtures for LED tubes FLFE-...L (Ex de) and FLF-...L (Ex d) series have two low copper content aluminium heads fitted with G13 lamp holder, a tempered borosilicate glass tube that is resistant to changes in heat and a white painted aluminium reflector. The 'Ex de' lighting fixture features an "Ex e" terminal board housing that allows entry to the lamp with a cable gland with an "Ex" seal (normal) as specified in installation standard (EN/IEC 60079.14). The entry to the 'Ex d' lighting fixtures must be through an Ex "barrier" cable gland (sealed) or, in the case of a conduit system, with an EYS, EZS series sealing fittings. The round cross section of the lamp provides a better "Cx" co-efficient with less resistance to the wind and less accumulation of dust. For this reason, these units are recommended for use in hazardous places where climatic and environmental conditions are severe and as they require less maintenance thanks to a very high ageing index. As the electrical components are housed on a frame with guides, re-lamping is quick and efficient. The fact that the fixture is fitted with a glass tube as opposed to a plastic material, makes it more effective and with a longer lifespan.

Application sectors:

Oil refineries | Chemical and petro-chemical plants | Oil and combustible liquid depots | Offshore plants | Onshore plants | Stair handrails | Farm produce applications | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex db op is IIC T6 Gb - Ex tb op is IIIC T71÷T80°C Db IP66 (FLF)			
	CE 0722 Ex II 2GD Ex db eb op is II C T6 Gb - Ex tb op is IIIC T71÷T80°C Db IP66 (FLFE)			
Certification:	ATEX CESI 09 ATEX 008			
	IECEx CES 11.0021	All IEC Ex, INMETRO certification data can be downloaded at www.cortemgroup.com		
	INMETRO DNV 12.0159			
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015/A1: 2018, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0:2004, IEC 60079-1:2007, IEC 60079-7:2006, IEC 61241-0:2004, IEC 61241-1:2004 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	85°C (T6)	85°C (T6)		
Ambient temperature:	Standard -20°C +55°C	With emergency -20°C +50°C		
Degree of protection:	IP66			

FLFE...L, FLF...L series Lighting fixtures with LED tubes

FLFE-...L (Ex de)

FLF-...L (Ex d)

MECHANICAL FEATURES

ORIGINAL PRODUCT

Body:	Low copper content aluminium alloy heads
External tube:	Shock and high temperature resistant borosilicate glass
Gaskets:	Acid/hydrocarbon resistant NBR on covers
Inner frame:	White painted aluminium that acts as reflector
Bolts and screws:	Stainless steel
Cap chain:	Stainless steel
Mounting:	2 x M8 holes
Entries:	2 x ISO M25 entries for FLFE, fixture kit with PLG2IB plug and NAV25IB cable gland 2 x 3/4" threaded NPT for FLF. Fixture set with 1 x PLG2NA plug
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

Lamp holders:	Bi-pin G13
Rated voltage:	220/240 V AC
Rated frequency:	50/60 Hz
LED tubes:	11-22-31 W max.
Connection:	Direct to the terminal board L, N, Pe section 4 mm^2 with jumpers suitable for input/output
Power factor:	0,98
Wiring:	Silicone rubber cables with glass braid insulation for high temperatures
Safety:	Internal safety switch installed for emergency lighting fixtures

NOTE: The technical and electrical specifications may be changed without notice due to continuous developments of LED technology.

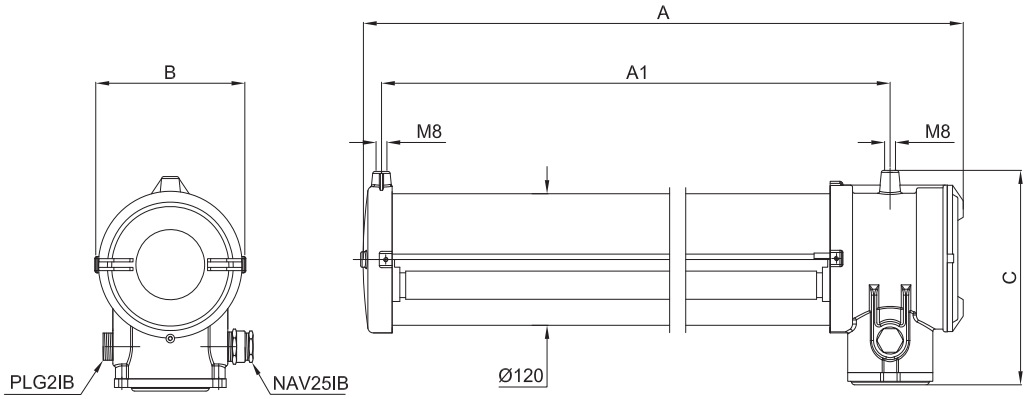
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different rated voltages
Installation mounting brackets
Stainless steel or galvanized steel guard with external aluminium protection
External aluminium protection recommended for outdoor installations
Re-lamping bracket for use on in-line lighting fixtures
Cable gland: NEVB2NB for armoured cable or NAVB2NB for non-armoured cable (only for FLF...L)
Cable entry: 2 x ISO M20 holes. Lighting fixture with 1 model PLG1IB plugs and 1 model NAV20SIB cable glands for non-armoured cable (code FLFE-111L/**20**)

Ex de lighting fixtures										
Code	Dimensions mm				LED tubes n°	Power supply	Lumen*	Watt*	Weight kg	mm
	A	A1	B	C						
FLFE-111L	725	640	142	197	1	220/240 Vac	925	11	5,0	240x230x800
FLFE-211L	725	640	142	197	2	220/240 Vac	1850	11	5,0	240x230x800
FLFE-122L	1325	1240	142	197	1	220/240 Vac	2150	22	7,8	240x230x1410
FLFE-222L	1325	1240	142	197	2	220/240 Vac	4300	22	7,8	240x230x1410
FLFE-131L	1625	1540	142	197	1	220/240 Vac	2700	31	9,5	240x230x1700
FLFE-231L	1625	1540	142	197	2	220/240 Vac	5400	31	9,5	240x230x1700

* Indicative information depending on the installed tube

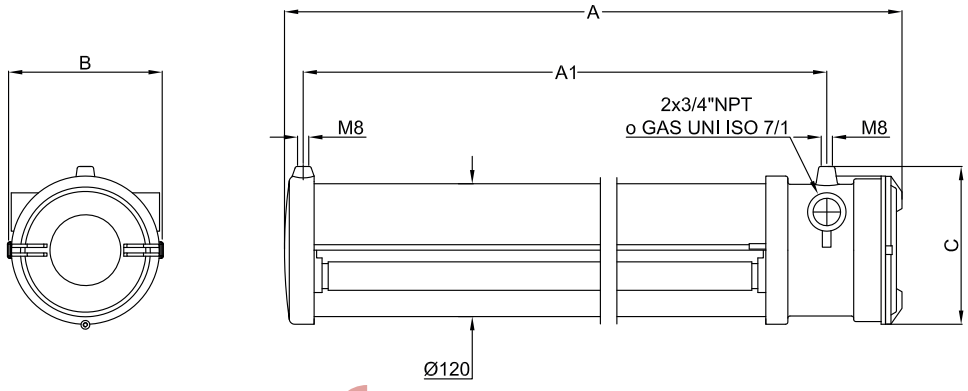
DIMENSIONAL DRAWING



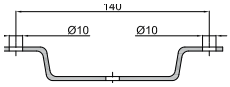
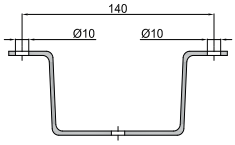
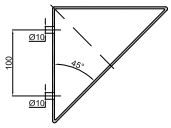
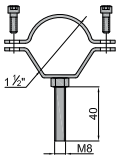
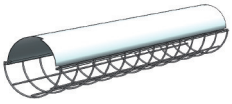
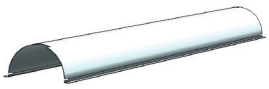
Ex d lighting fixtures										
Code	Dimensions mm				LED tubes n°	Power supply	Lumen*	Watt*	Weight kg	mm
	A	A1	B	C						
FLF-111L	725	640	142	145	1	220/240 Vac	925	11	4,5	240x230x800
FLF-211L	725	640	142	145	2	220/240 Vac	1850	11	4,5	240x230x800
FLF-122L	1325	1240	142	145	1	220/240 Vac	2150	22	7,3	240x230x1410
FLF-222L	1325	1240	142	145	2	220/240 Vac	4300	22	7,3	240x230x1410
FLF-131L	1625	1540	142	145	1	220/240 Vac	2700	31	9,0	240x230x1700
FLF-231L	1625	1540	142	145	2	220/240 Vac	5400	31	9,0	240x230x1700

* Indicative information depending on the installed tube

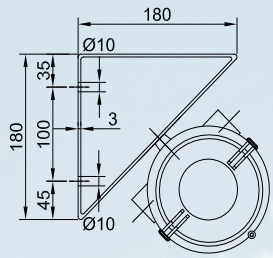
DIMENSIONAL DRAWING



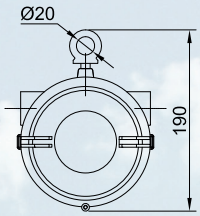
FLFE...L, FLF...L series Accessories and spare parts available

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	LED tubes G13 fitting	11 W Max. 22 W Max. 31 W Max.	Contact our Sales Office for availability		
	Tige	Longitud: 250 mm	Material: stainless steel	**BRF8MIN/250**	
	Type O eyebolt		Material: galvanised steel	**GOF-8**	
	Type U bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	**G-0609**	
	Type V bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	**G-0610**	
	Type D bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	**G-0611**	
	Type P bracket		Material: galvanised steel	**G-0480**	
	Guard with Light blue/white painted 10/10 aluminium external protection	11 W 22 W 31 W	Stainless steel guard	**G18-0529** **G36-0529** **G58-0529**	
		11 W 22 W 31 W	Galvanised steel guard	**G18-0529G** **G36-0529G** **G58-0529G**	
	External protection	11 W 22 W 31 W	Light blue/white painted 10/10 aluminium external protection	**G18-568** **G36-568** **G58-568**	
		11 W 22 W 31 W	10/10 stainless steel AISI 304 external protection	**G18-568IN** **G36-568IN** **G58-568IN**	
	Cable gland	FLF...L	For models and codes, visit www.cortemgroup.com	**NAVB2NB** **NEVB2NB**	
	Lamp holder	FLF..-1..L FLF..-2..L	G13 250 V, 4 A	**STU3249-12/S**	
	Re-lamping bracket with clip system for use on in-line lighting fixtures		Material: galvanised steel	**G-0318** **+** **G-0318/1**	

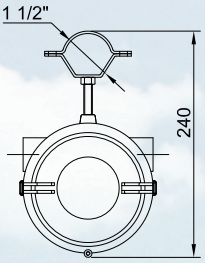
Installation and mounting methods and photometric diagrams



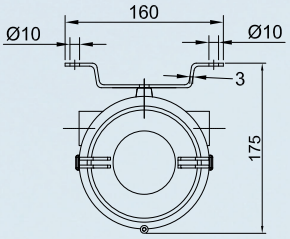
45° angle mounting
TYPE "D"



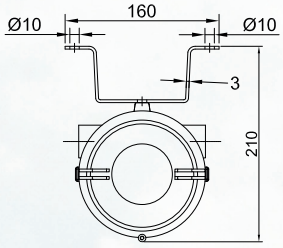
Pendant mounting with
eyebolt TYPE "O"



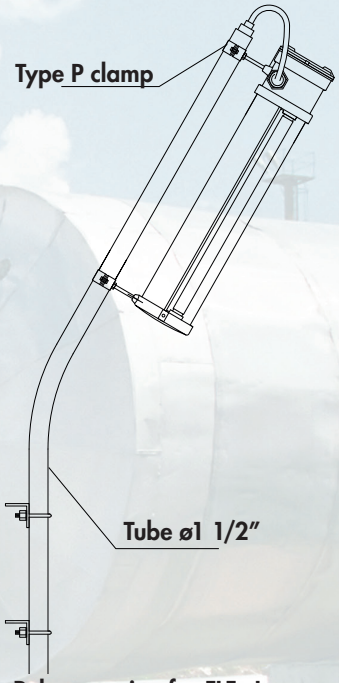
Mounting using 1.1/2"
metal clamps TYPE "P"



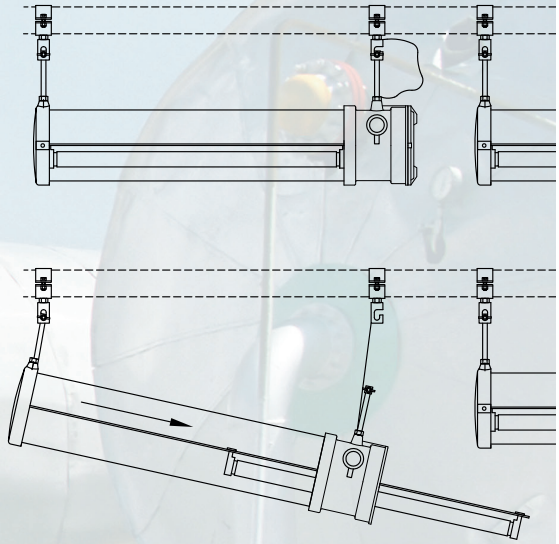
Low ceiling mounting with
clamp TYPE "U"



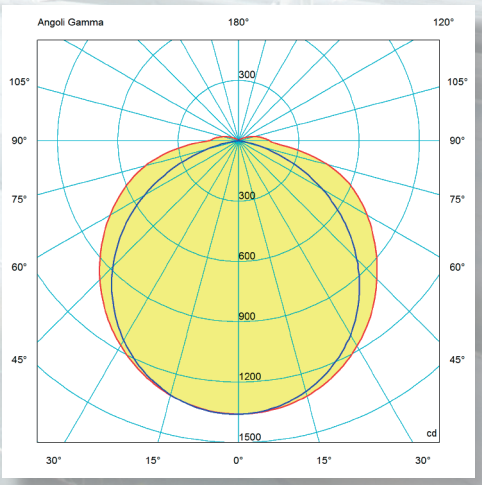
High ceiling mounting with
clamp TYPE "V"



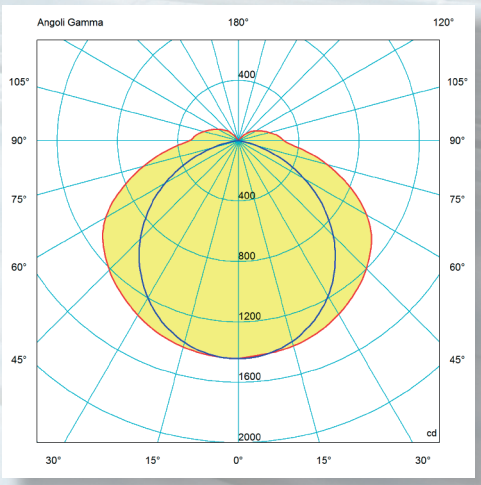
Pole mounting for FLF...L
with barrier cable gland



Mounting system with quick release clip for easy fluorescent tube replacement. System suitable for installing in-line lighting fixtures.



FLFE-222L / FLF-222L



FLFE-231L / FLF-231L

On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

Lifex-P

- Complete with high efficiency LED strip lights
- Low consumption
- Compact size
- Easy to install
- Zone 1, 2, 21, 22
- 5 years warranty
- IK09

PATENTED

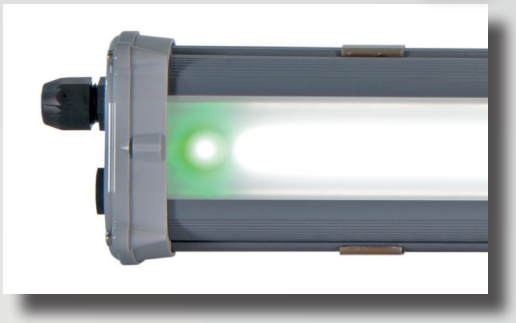
Screws, bolts and nuts: Stainless steel

Low installation costs

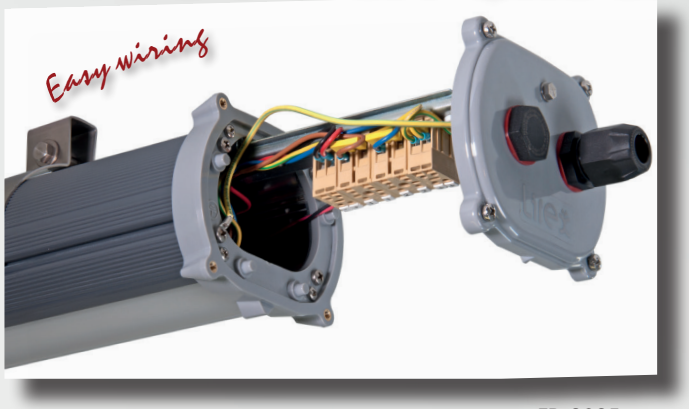
Fastening brackets

Polyamide cable gland

Battery charge level LED



Electrical part removable thanks to the frame inserted on special rails



LifEx-P series Linear LED lighting fixtures - plastic material

The LifEx-P series lighting fixtures are characterised by an impact (IK09) and UV-resistant polycarbonate and GRP body with a transparent part for light transmission.
Thanks to a carefully designed architecture which aims to manage the full product lifecycle optimally as part of a circular economy, and maximize the service life, LifEx-P is a small, lightweight, easy-to-install yet robust and highly corrosion-resistant lighting fixture.
An innovative bracket mechanism, with no fixed interaxis spacing limitations, makes them easy to install or retrofit. Available in different lengths and with a wide range of voltage and power features, the LifEx-P series is optimally designed and certified for the area of installation.
Versions with emergency operation can be accessorized with battery boxes to facilitate maintenance and/or battery replacement, or with special batteries for applications with ambient temperatures down to -60° C.
The use of high-power LED strips provides lumen output ranging from 1,500 lm to 12,500 lm with high efficiency and guaranteed durability.

Sectors of application:

Offshore facilities | Agribusiness facilities | Onshore facilities | Low temp. environments | Distillation industries | Stair handrails | Perimeter zone lighting | 100% produced by Cortem

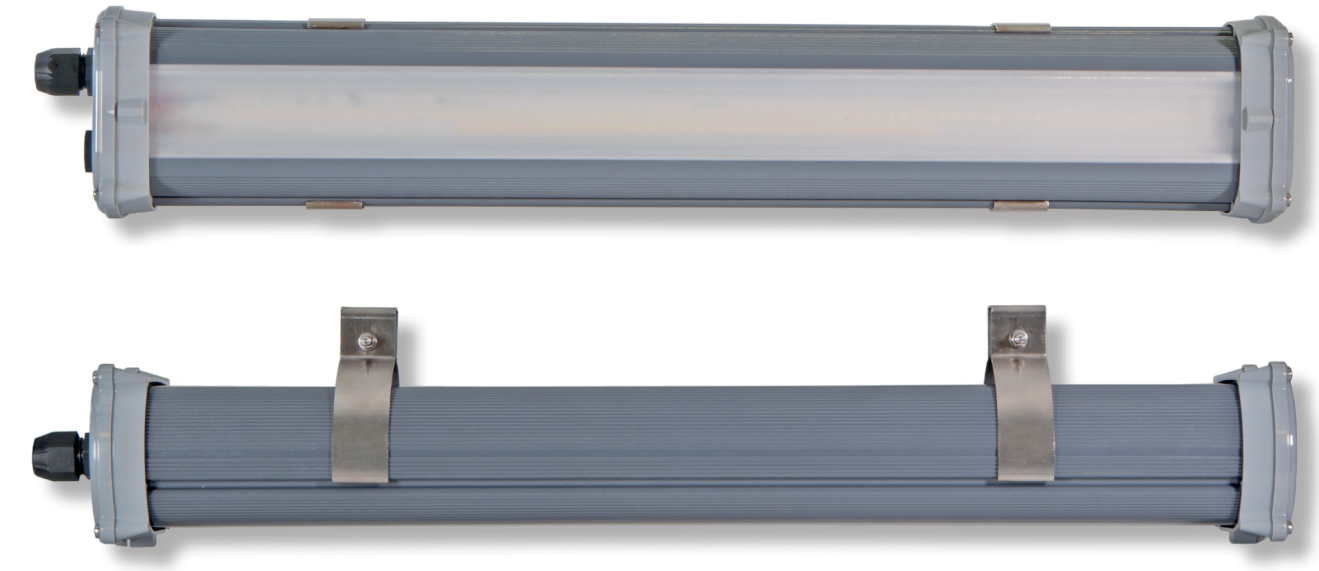
CERTIFICATE DATA

Classification:	Group II	Category 2GD/3G	
Installation: EN 60079.14	zone 1, 2, 21, 22 *LifEx-PE*	zone 2, 21, 22 *LifEx-PN*	
Marking:	CE 0722 Ex II 2GD - Ex db eb mb IIC T.. Gb - Ex tb IIIC T..°C Db - IP66		*LifEx-PE*
	CE Ex II 3G - Ex nR IIC T.. Gc CE 0722 Ex II 2D - Ex tb IIIC T..°C Db - IP66		*LifEx-PN*
Certificate:	ATEX CML 21 ATEX 31405X		*LifEx-PE*
	ATEX CML 21 ATEX 31406X ATEX CML 21 ATEX 31405X		*LifEx-PN*
	IEC Ex IECEx CML 21.0168X		For all IEC Ex and UKEX certificate data, download the certificate from www.cortemgroup.com
	UKEX AVAILABLE		
	UL PENDING		
Standards:	CENELEC EN60079-0: 2018, EN60079-1: 2014, EN60079-7: 2015-18, EN60079-15: 2019, EN60079-18: 2015-17, EN60079-31: 2024, EN60598-2-22 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-15: 2017, IEC60079-18: 2017, IEC60079-31: 2022, IEC60079-7: 2017 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS		
Temperature class:	For all permitted ambient temperature classes, please see the "Selection tables"		
Temp. Temperature:	-60°C for models without a battery -20°C or -60°C* for versions with a internal battery	For all permitted ambient temperature ranges, please see the "Selection tables"	
Degree of protection:	IP66		

-60°C

* Emergency lighting fixture with special battery for -60°C

LifEx-P series Linear LED lighting fixtures - plastic material



NO PHOTOBIOLOGICAL RISK (IEC / EN 62471 STANDARD)

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Gray shock and UV resistant fibreglass reinforced polyester resin and polycarbonate, impact resistant IK09. Gray colors RAL 7015 and 7045
Transparent part:	Transparent satin polycarbonate UV and impact resistant IK09
Gaskets:	Acid and hydrocarbon resistant silicone, IPX9
Internal frame:	Aluminium extrusion
Screws:	Stainless steel
Entry points:	Max. 4 entry points Ø25.5. Standard version with 2 holes Ø20.5 side (1) complete with n.1 NAVP20IXE and n.1 PLG1ILXE7 for LifEx-PE, n.1 NAV20IB and n.1 PLG1IB for LifEx-PN. For other versions the plugs and cable glands are available upon request
Assembly:	Fastening brackets for M8 holes

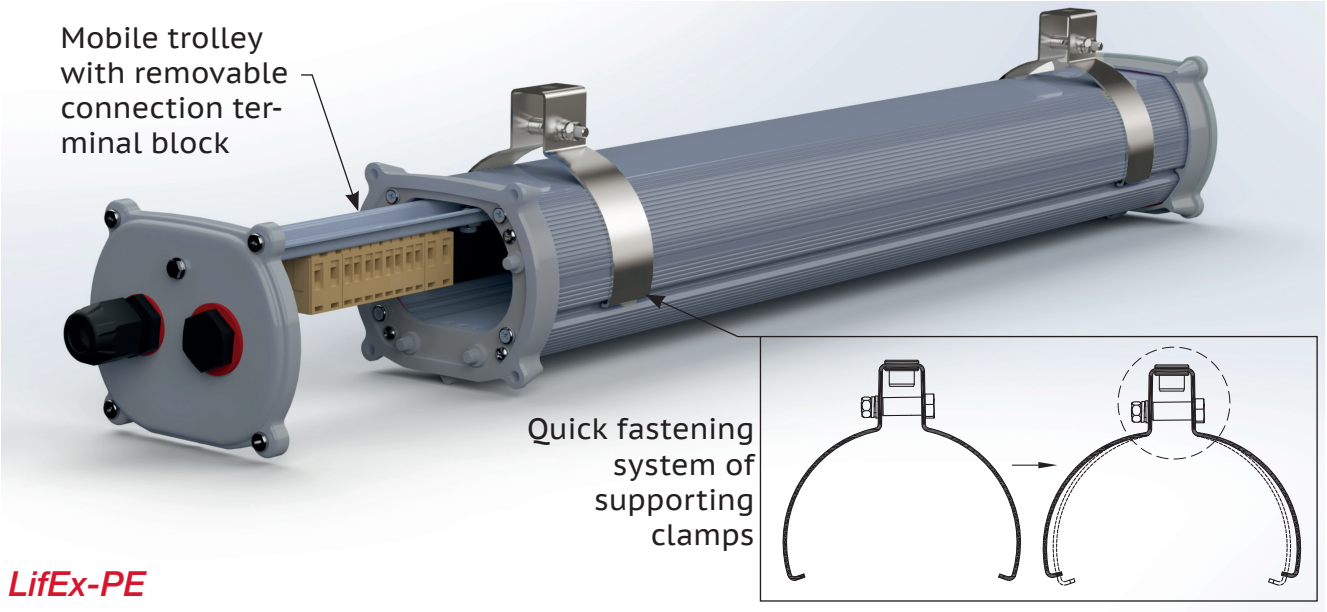
ELECTRICAL FEATURES

Power unit:	Electronic
Rated voltage:	110-277 V AC (for details, see the Selection table)
Rated frequency:	50/60 Hz
Connection:	Directly to the terminal board L, N, Pe cross sec. max. 4 mm^2 jumpered terminal board suitable for in-out, from a single side
Emergency unit:	Electronic inverter 110/277 V AC 50/60 Hz, 110/270 Vdc. Batteries Ni/Mh, 1.8 Ah or 3 Ah, 6V Battery charge indicated by the green LED
Cabling:	Rigid cables for high temperatures

ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Coloured LED strip lights
Emergency lighting fixture with battery box to facilitate battery maintenance/replacement operations (example code: LifEx-PE-1230N-A**E**)
Emergency lighting fixture with battery heater (internal component) for ambient temperatures of -60°C, supplied voltage 230Vac. (example code: LifEx-PE-1230N**H**)
Wiring connection (example code: LifEx-PE-1230-AA**T**)
Dimming of lighting fixtures with DALI standard (Contact our Sales Office for availability)
Driver multirange
Vdc voltage range
Cable gland and plugs
Earthing continuity plates for metal cable glands (In the case of one cable glands, the earthing ring is required, code: A1311IB for cablegland M20, A2312IB for cablegland M25)

LifEx-P series lighting fixtures are available in two different configurations for different applications, LifEx-PE and LifEx-PN



LifEx-PE

The "PE" versions are designed for use in ATEX zones classified as "Zone 1-2" and "Zone 21-22," i.e. where the installed equipment must provide a high level of protection both in the presence of gas, vapour and mist mixtures (Zone 1) and in the presence of combustible dust and particles (Zone 21). LifEx-PE has Equipment Protection Level Gb, Db

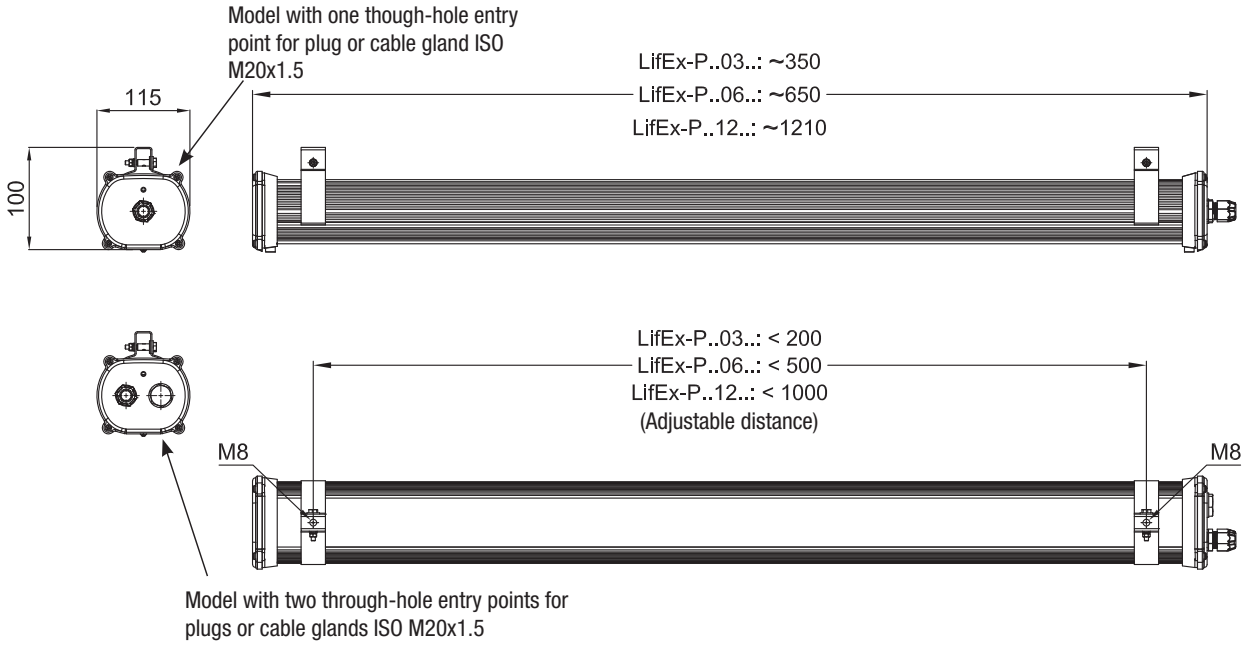
This safety feature is ensured by a combination of Ex db eb mb protection modes for gases and Ex tb for dust.

LifEx-PN

The "PN" versions are designed for use in ATEX zones classified as "Zone 2" and "Zone 21-22", i.e. where installed equipment must provide a normal level of protection in the presence of gas, vapour and mist mixtures (Zone 2), and a high level of protection against combustible dust and particles (Zone 21). LifEx-PN has Equipment Protection Level Gc, Db

This safety feature is ensured by Ex nR protection modes for gases and Ex tb for dust.

DIMENSIONAL DRAWING



LifEx-P series Linear LED lighting fixtures - plastic material

Selection table.

Temperature classes and maximum surface temperatures.

Normal operation

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+55°C	+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
LifEx-PE-0315	13,4	15	220-240 Vac	T53°C/T5	T63°C/T5	T68°C/T4	T73°C/T4	1586	642	119	2,2	550x115x165
LifEx-PE-0330	26,5	30	220-240 Vac	T53°C/T5	T63°C/T5	T68°C/T4	T73°C/T4	2957	1196	111	2,2	550x115x165
LifEx-PE-0615	13,3	15	220-240 Vac	T57°C/T6	T67°C/T5	T72°C/T5	T77°C/T4	1637	659	123	2,5	860x115x165
LifEx-PE-0630	29,3	30	110-277 Vac	T57°C/T6	T67°C/T5	T72°C/T5	T77°C/T4	3220	1297	110	2,8	860x115x165
LifEx-PE-0645	42,9	45	110-277 Vac	T57°C/T6	T67°C/T5	-	-	5037	2022	118	2,8	860x115x165
LifEx-PE-0660	54,1	60	110-277 Vac	T57°C/T6	T67°C/T5	-	-	6548	2625	121	2,8	860x115x165
LifEx-PE-1230	27,8	30	110-277 Vac	T55°C/T6	T65°C/T5	T70°C/T5	T75°C/T5	3091	1247	111	4,3	1415x115x165
LifEx-PE-1260	54,8	60	110-277 Vac	T55°C/T6	T65°C/T5	T70°C/T5	T75°C/T5	6390	2584	117	4,3	1415x115x165
LifEx-PE-1290	78,4	90	120-277 Vac	T55°C/T6	T65°C/T5	-	-	9503	3818	121	4,3	1415x115x165
LifEx-PE-12120	101,4	120	220-277 Vac	T55°C/T6	T65°C/T5	-	-	12449	4994	123	4,3	1415x115x165

Normal operation + emergency

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm **	Discharge time in minutes	Weight kg	mm
LifEx-PE-0615N	13,3	15	220-240 Vac	T57°C/T6	T67°C/T5	T77°C/T4	797	90	3,4	860x115x165
LifEx-PE-0630N	29,3	30	220-240 Vac	T57°C/T6	T67°C/T5	T77°C/T4	793	90	3,4	860x115x165
LifEx-PE-1230N*	27,8	30	110-277 Vac	T55°C/T6	T65°C/T5	T75°C/T5	667	180	5,2	1415x115x165
LifEx-PE-1260N*	54,8	60	110-277 Vac	T55°C/T6	T65°C/T5	T75°C/T5	659	180	5,2	1415x115x165

Emergency operation only

Code	Supply voltage Volt	Temperature class / Maximum surface temperature +40°C	+50°C	+60°C	Lumen lm	Discharge time in minutes	Weight kg	mm
LifEx-PE-0615E*	110-277 Vac	T57°C/T6	T67°C/T5	T77°C/T4	1027	90	3,0	860x115x165
LifEx-PE-1230E*	110-277 Vac	T55°C/T6	T65°C/T5	T75°C/T5	1013	90	4,4	1415x115x165

* Models with emergency feature available -60°C

** Lumen in emergency operation.
The lumens in normal operation are the same as the versions without "N".

ORDER CODE LOGIC

LifEx-PE- [ ][ ][ ] | Options [ ][ ]

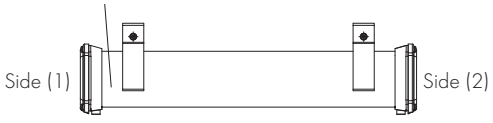
LifEx-PE Fixed code
Zone 1, 2, 21, 22

Lighting fixture length
03 300 mm for 15W, 30W
06 600 mm for 15W, 30W, 45W, 60W
12 1200 mm for 30W, 60W, 90W, 120W

Lighting fixture power
15 15W **60** 60W
30 30W **90** 90W
45 45W **120** 120W

Operation
n.a. Normal
N Normal + emergency
E Emergency only
NH Normal + emergency for -60°C. Supplied voltage 230Vac.
EH Emergency only for -60°C. Supplied voltage 230Vac.

Position of internal connection terminals



(1) Quantity and type of cable holes side (1)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5

(2) Quantity and type of cable holes side (2)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5
X No holes
E Battery box

n.a. Standard lighting fixture with 2 Ø20.5 holes side (1) (with 1xNAVP20IXE 1xPLG1LXE7) Lid with no holes side (2) Example code LifEx-PE-0615 **n.a.**

Selection table.

Temperature classes and maximum surface temperatures.

Normal operation

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+55°C	+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
LifEx-PN-0315	13,4	15	220-240 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	1742	686	130	2,2	550x115x165
LifEx-PN-0330	26,5	30	220-240 Vac	T54°C/T6	T64°C/T6	T69°C/T6	T74°C/T6	3203	1271	120	2,2	550x115x165
LifEx-PN-0615	13,3	15	220-240 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	1790	703	134	2,2	860x115x165
LifEx-PN-0630	29,3	30	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	3471	1366	118	2,2	860x115x165
LifEx-PN-0645	43,1	45	110-277 Vac	T47°C/T6	T57°C/T6	-	-	5472	2141	127	2,2	860x115x165
LifEx-PN-0660	54,2	60	110-277 Vac	T54°C/T6	T64°C/T6	-	-	7109	2780	131	2,2	860x115x165
LifEx-PN-1230	28,0	30	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	3424	1345	122	3,4	1415x115x165
LifEx-PN-1260	54,8	60	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	7083	2775	129	3,4	1415x115x165
LifEx-PN-1290	78,4	90	120-277 Vac	T47°C/T6	T57°C/T6	-	-	10390	4074	133	3,4	1415x115x165
LifEx-PN-12120	101,3	120	220-277 Vac	T68°C/T6	T78°C/T6	-	-	13649	5337	135	4,3	1415x115x165

Normal operation + emergency

Code	Real power Watt	Rated power Watt	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+55°C	+60°C	Lumen lm	Discharge time in minutes	Weight kg	mm
LifEx-PN-0615N	13,3	15	220-240 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	927	90	2,8	860x115x165
LifEx-PN-0630N	29,3	30	220-240 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	945	90	2,8	860x115x165
LifEx-PN-1230N*	28,0	30	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	954	180	4,0	1415x115x165
LifEx-PN-1260N*	54,8	60	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	869	180	4,0	1415x115x165

Emergency operation only

Code	Supply voltage Volt	Maximum surface temperature +40°C	+50°C	+55°C	+60°C	Lumen lm	Discharge time in minutes	Weight kg	mm
LifEx-PN-0615E*	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	1125	90	2,4	860x115x165
LifEx-PN-1230E*	110-277 Vac	T47°C/T6	T57°C/T6	T62°C/T6	T67°C/T6	1109	90	3,6	1415x115x165

* Models with emergency feature available -60°C

** The lumens in normal operation are the same as the versions without "N".

ORDER CODE LOGIC

LifEx-PN- [ ][ ][ ] Options [ ](1) [ ](2)

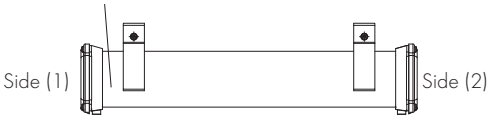
LifEx-PN Fixed code
Zone 2, 21, 22

Lighting fixture length
03 300 mm per 15W, 30W
06 600 mm for 15W, 30W, 45W, 60W,
12 1200 mm for 30W, 60W, 90W

Lighting fixture power
15 15W **60** 60W
30 30W **90** 90W
45 45W **120** 120W

Operation
n.a. Normal
N Normal + emergency
E Emergency only
NH Normal + emergency for -60°C. Supplied voltage 230Vac
EH Emergency only for -60°C. Supplied voltage 230Vac

Position of internal connection terminals



Quantity and type of cable holes side (1)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5

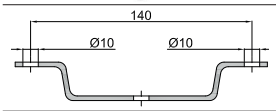
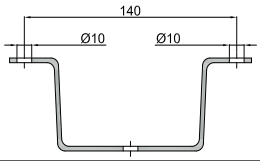
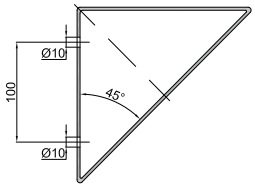
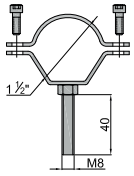
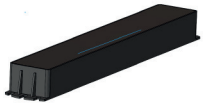
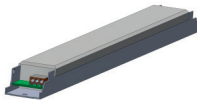
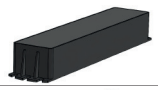
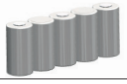
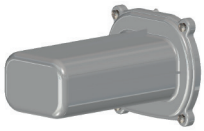
Quantity and type of cable holes side (2)
A N°1 hole Ø20,5
B N°2 holes Ø20,5
C N°1 hole Ø25,5
D N°2 holes Ø25,5
X No holes
E Battery box

n.a. Standard lighting fixture with 2 Ø20.5 holes side (1) (with 1xNAV20IB 1xPLG1IB) Lid with no holes side (2) **n.a.**
Example code LifEx-PN-0615

Electrical features	LifEx-PE-03..	LifEx-PE-06..	LifEx-PE-12..
Supply voltage:	**..15** 220-240 Vac	**..15** 220-240 Vac	**..30** 110-277 Vac
	..30 220-240 Vac	**..30** 110-277 Vac	**..60** 110-277 Vac
	-	**..45** 110-277 Vac	**..90** 120-277 Vac
	-	**..60** 110-277 Vac	**..120** 220-277 Vac
	-	-	-
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Lamp real power consumption:	**..15** 13,4 W	**..15** 13,3 W	**..30** 27,8 W
	..30 26,5 W	**..30** 29,3 W	**..60** 54,8 W
	-	**..45** 42,9 W	**..90** 78,4 W
	-	**..60** 54,1 W	**..120** 101,4 W
	-	-	-
Connection:	Cable entry directly to the terminal board L, N, PE. Max. 4sq^{mm} cross-section, suitable for in-out connections		
Power factor:	**..15** 0,97	**..15** 0,97	**..30** 0,95
	..30 0,99	**..30** 0,95	**..60** 0,97
	-	**..45** 0,98	**..90** 0,99
	-	**..60** 0,97	**..120** 0,99
	-	-	-
Rated current:	**..15** 60 mA	**..15** 60 mA	**..30** 127 mA
	..30 117 mA	**..30** 134 mA	**..60** 246 mA
	-	**..45** 190 mA	**..90** 344 mA
	-	**..60** 243 mA	**..120** 445 mA
	-	-	-
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3		
THD (Total Harmonic Distortion):	<4% 230 Vac, 50 Hz		
Over-voltage protection: (values valid for lamps in normal operation)	**..15** 2-4 kV	**..15** 2-4 kV	**..15** 4 kV
	..30 2-4 kV	**..30** 4 kV	**..30** 4 kV
	-	**..45** 4 kV	-
	-	**..60** 4 kV	-
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection		
Dimmer (on request):	0-10V PWM		
Photometric features			
Multichip LED:	Mid power		
Viewing angle:	120°		
Colour temperature	5000 K		
CRI:	>80		
Instant Restrike:	YES		
L90:	> 54000 hours		

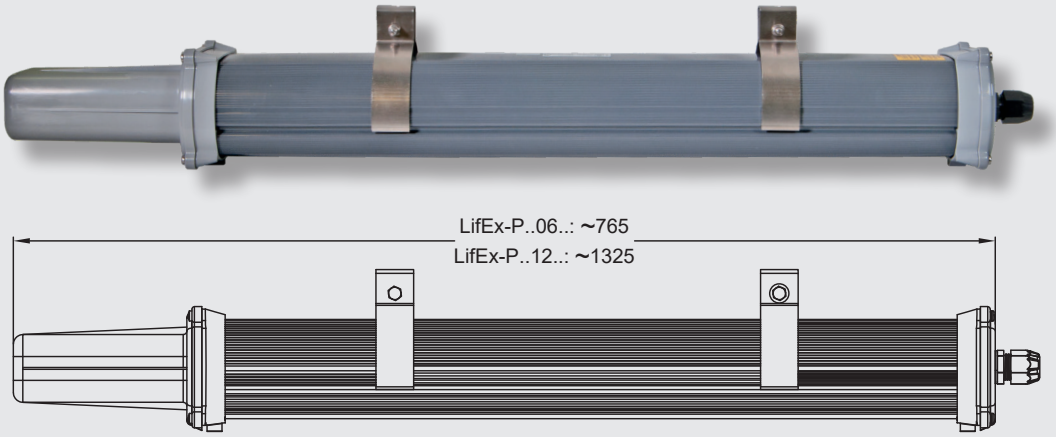
Electrical features	LifEx-PN-03..	LifEx-PN-06..	LifEx-PN-12..
Supply voltage:	**..15** 220-240 Vac	**..15** 220-240 Vac	**..30** 110-277 Vac
	..30 220-240 Vac	**..30** 110-277 Vac	**..60** 110-277 Vac
	-	**..45** 110-277 Vac	**..90** 120-277 Vac
	-	**..60** 110-277 Vac	**..120** 220-277 Vac
	-	-	-
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Lamp real power consumption:	**..15** 13,4 W	**..15** 13,3 W	**..30** 27,8 W
	..30 26,5 W	**..30** 29,3 W	**..60** 54,8 W
	-	**..45** 42,9 W	**..90** 78,4 W
	-	**..60** 54,1 W	**..120** 101,4 W
	-	-	-
Connection:	Cable entry directly to the terminal board L, N, PE. Max. 4sq^{mm} cross-section, suitable for in-out connections		
Power factor:	**..15** 0,97	**..15** 0,97	**..30** 0,95
	..30 0,99	**..30** 0,95	**..60** 0,97
	-	**..45** 0,98	**..90** 0,99
	-	**..60** 0,97	**..120** 0,99
	-	-	-
Rated current:	**..15** 60 mA	**..15** 60 mA	**..30** 127 mA
	..30 117 mA	**..30** 134 mA	**..60** 246 mA
	-	**..45** 190 mA	**..90** 344 mA
	-	**..60** 243 mA	**..120** 445 mA
	-	-	-
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3		
THD (Total Harmonic Distortion):	<4% 230 Vac, 50 Hz		
Over-voltage protection: (values valid for lamps in normal operation)	**..15** 2-4 kV	**..15** 2-4 kV	**..15** 4 kV
	..30 2-4 kV	**..30** 4 kV	**..30** 4 kV
	-	**..45** 4 kV	-
	-	**..60** 4 kV	-
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection		
Dimmer (on request):	0-10V PWM		
Photometric features			
Multichip LED:	Mid power		
Viewing angle:	120°		
Colour temperature	5000 K		
CRI:	>80		
Instant Restrike:	YES		
L90:	> 54000 hours		

LifEx-P series Linear LED lighting fixtures - plastic material

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Rod	Length: 250 mm	Material: stainless steel	BRF8MIN/250	ACCESSORIO RICAMBIO
	O-type eye bolt		Material: galvanized steel	GOF-8	ACCESSORIO RICAMBIO
	U-bracket complete with screws		Material bracket: galvanized steel screws: stainless steel	G-0609	ACCESSORIO RICAMBIO
	V-bracket complete with screws		Material bracket: galvanized steel screws: stainless steel	G-0610	ACCESSORIO RICAMBIO
	D-bracket complete with screws		Material bracket: galvanized steel screws: stainless steel	G-0611	ACCESSORIO RICAMBIO
	Bracket type P		Material: galvanized steel	G-0480	ACCESSORIO RICAMBIO
	Polyamide cable glands	LifEx-PE	For cable gland models and codes, please see www.cortemgroup.com	NAVP20IXE	ACCESSORIO RICAMBIO
	Nickel plated brass cable gland	LifEx-PN		NAV20IB	
	Earthing continuity plates for metal cable glands	For cableglands M20x1.5	Material: brass	B-564	ACCESSORIO RICAMBIO
		For cableglands M25x1.5		B-564/1	
	Electronic power unit	LifEx-PE-0315 LifEx-PE-0615 LifEx-PE-0615N	LED driver Ex mb	EBM-30L/350	RICAMBIO
		LifEx-PE-0330 LifEx-PE-0630N		EBM-30L/700	
		LifEx-PE-0630 LifEx-PE-0645 LifEx-PE-0660 LifEx-PE-12...		EBM-100L/350	
	Electronic power unit	LifEx-PN-0315 LifEx-PN-0330/ 0630N LifEx-PN-0615/0615N	LED driver	LEDDLIFEX10	RICAMBIO
		From LifEx-PN-0630 to LifEx-PN-12120		LEDDLIFEX100	
	Fibreglass inverter	LifEx-PE-...N LifEx-PE-...E	Inverter Ex mb	EIM-30L	RICAMBIO
	Inverter	LifEx-PN-...N LifEx-PN-...E	Inverter LED	INVERTER/LED/NM	RICAMBIO
	Battery unit	LifEx-P..-..E LifEx-P..-06..N	NiMH, 1.8Ah	G-1096/B	RICAMBIO
		LifEx-P..-12..N LifEx-P..-1590N	NiMH, 3Ah	G-1097/F	
	Battery box	Duration 180 minutes	3 Ah	G-0697/3AH	RICAMBIO
		Duration 90 minutes	1.8 Ah	G-0697/1.8AH	
	Battery for -60°C	Duration 180 minutes	3 Ah	G-0698	RICAMBIO

Emergency lighting fixture with battery box

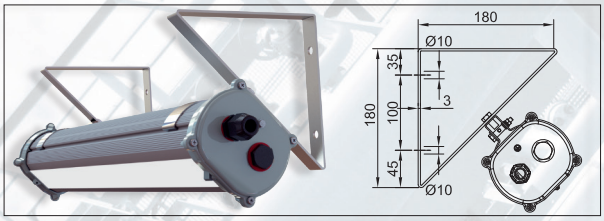
Version to facilitate battery maintenance/replacement operations.



Versions available with cable entry in SIDE 1 only

Possible codes:
LifEx-P..-AE
LifEx-P..-BE
LifEx-P..-CE
LifEx-P..-DE

Typical assemblies with installation accessories



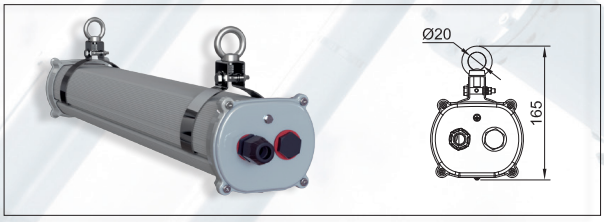
45° corner mount TYPE "D"

Ceiling mount with 250 mm rod

Ceiling mount, tall model TYPE "U"

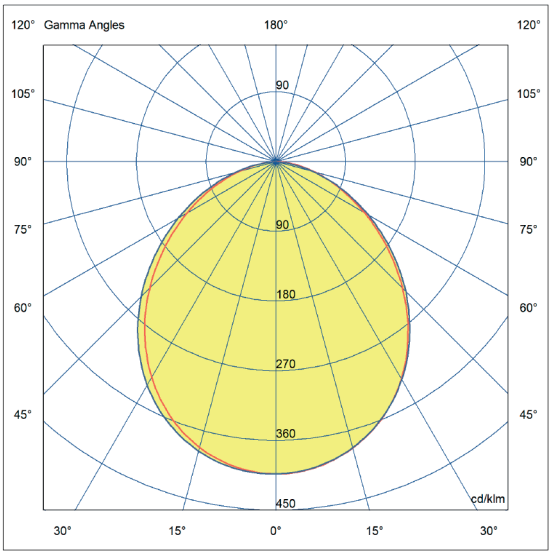
Mount with metal clamps 1 1/2" TYPE "P"

Ceiling mount, tall model TYPE "V"



Suspended mount with eye bolt TYPE "O"

LIFEX-PE-1230
Luminous flux 3091 lm



= level 90270
= level 0180

The lighting solution files for the design, planning and simulation of lighting levels in 2D-3D, rendering and ray-tracing are available from www.cortemgroup.com.

L-3000P, L-5P, L-5RP

- High efficiency
- Smart energy saving
- IP67 protection rating
- Exceptional ergonomic design
- Zone 0, 1, 2

L-5P series adapts to fit a variety of hard hats and helmets

CORTEM GROUP®

L-3000P portable LED torch

The L-3000P torch has been designed to combine efficient lighting with user-selected operating time settings. It features high-performance LEDs, a new built-in dual optic system, a digital monitor showing battery status and a lighting management system, making it one of the most in-demand torch models in the industry.
The distinguishing feature of this torch is the option of controlling lighting based on individual user requirements: there are three different light output presets, allowing you to choose between a 5, 7.5 or 10 hour operating time. Held by hand or adapted in its holster, the rotating head provides versatility at all times while you are working. Its external clip means
you can hang the torch off your belt, jacket or anything else, freeing up your hands.

Application sectors:

Oil refineries | Chemical and petro-chemical plants | Agriculture and food plants | Offshore plants | Pharmaceutical industries | Powder magazines | Onshore plants | Fuel depots

CERTIFICATION DATA

Classification:	Group II	Category 1GD			
Installation:	zone 0 - 1 - 2 (Gas)	zone 20 - 21 - 22 (Dust)			
Marking:	CE Ex II 1GD Ex ia op is IIC T4 Ga - Ex ia op is IIIC T85°C Da IP67				
Certificate:	ATEX LOM 12 ATEX 2087X	Portable LED torch: L-3000P			
Standards:	EN 60079-0: 2013; EN 60079-11: 2012; EN 60079-28: 2015 ed alla DIRETTIVA EUROPEA 2014/34/UE				
Temperature class:	135°C (T4)				
Ambient Temp.:	-20°C +40°C				
Degree of protection:	IP67				

L-3000P portable LED torch

Impact resistance and mechanical strength

Battery run time in hours and minutes

Rechargeable batteries

Revolutionary optics

0° / 45° / 90° rotating head

FEATURES

Torch L-3000P

Body:	Thermoplastic resin with high impact strength and resistance to extreme temperatures and corrosive substances
LEDs:	3 x 150 lm LEDs (total light output 400 lm)
Front lens:	Shatterproof clear polycarbonate with built-in dual optics
Head:	Rotates to 3 positions: 0° / 45° / 90°
Operation:	Operating time of both LEDs can be set to 4, 6 or 8 hours: - maximum light output > 5hrs - maximum light output > 7,5h - low light output > 10h
Operation monitoring:	Digital display located on rotating head indicating remaining hours and minutes of light
Operation test:	Warning given in the last 15 minutes when battery charge is running low
Switches:	Two ergonomically designed buttons made from a soft-touch material; oversized to ensure ease of use, even with gloved hands
Battery:	3.7V lithium ion battery; easy for user to replace

Battery charger:

Marking:	CE, e9
Protection:	IP54
Switch off:	Automatic end of charging
Charge indicators:	Red LED: charging Green LED: batteries charged
Power supply:	CC:12 V 24 V or AC: 100/240 V, 50/60 Hz
Types and dimensions:	Single: 76x131x57 mm Battery charger for 3 torches: 205x105x60 mm Battery charger for 5 torches: 405x105x60 mm

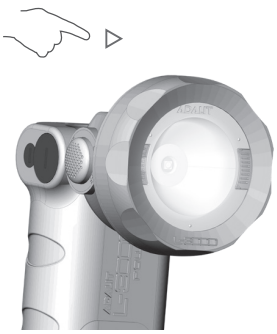
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Holster
Battery charger for 1, 3 or 5 torches

L-3000P portable LED torch

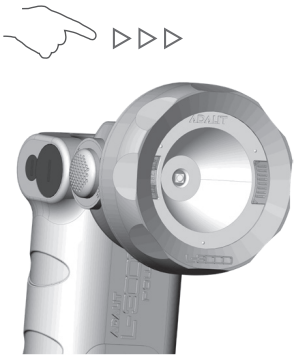
Code	Dimension mm		Light output	Light intensity	Discharge time	Weight kg
	L	Ø				
L-3000P	225	70	Tot. 400 lm	20.000 cd	Max. 10 ore	0,5

MODES

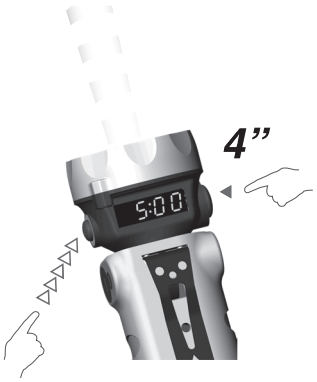


Switch on and maximum light intensity
Press button once.
LEDs are on, offering diffused light and a focussed beam all at once. At the same time, the display comes on, showing the remaining operating time.

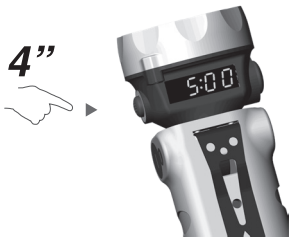
Diffused light
Press button twice.
Only the LED located behind the optical diffuser is kept on, giving the light beam a wider angle.
The special design of the optics means the LED manages to even light the area underneath, near the user's feet.

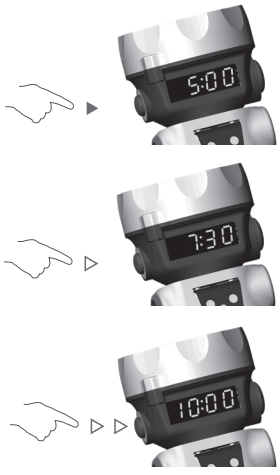


Torch and display switch off
Press button thrice.



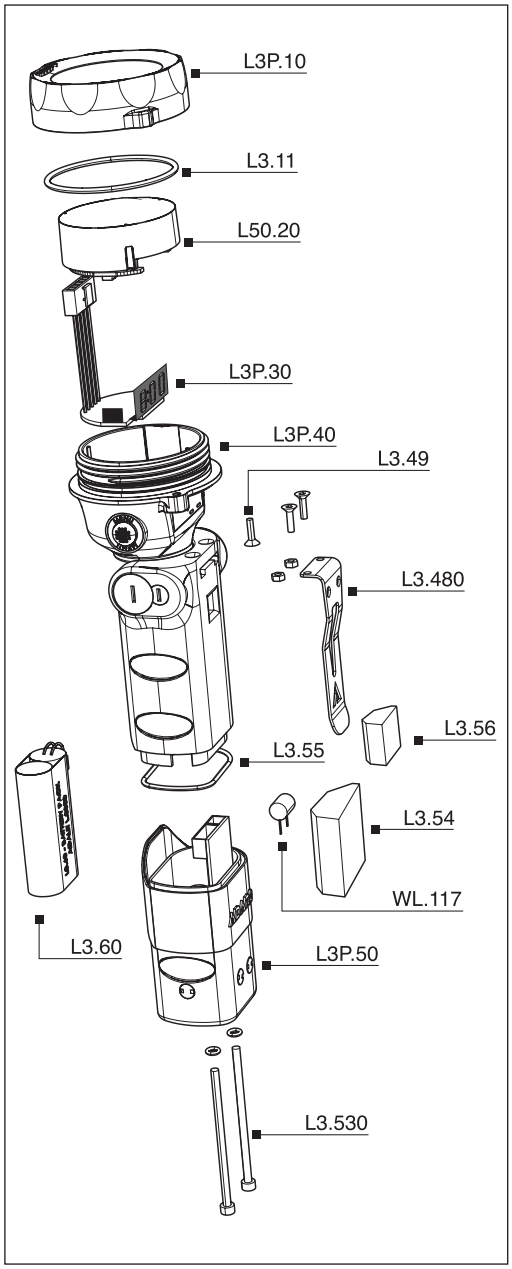
Strobe light
Menu button.
Holding the On|Off button down for four seconds sets the torch to strobe mode. Using the Menu button, you can select up to five different flashing rates.





Consumption map
Holding the Menu button down for 4 seconds activates programming mode for setting the torch's operating time and light output. Based on the 5, 7.5 or 10 hour setting, the electronics automatically adjust the light output level and consequently consumption levels.

L-3000P portable LED torch



DESCRIPTION	CODE	KEY
Torch end cap with clear lens	L3P.10	
End cap O-ring	L3.11	
Optics and LED card	L50.20	
PCB and display	L3P.30	
Complete clip	L3.480	
Body O-ring	L3.55	
Battery pack	L3.60	
Torch body with battery charger PCB	L3P.50	

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Torch L-3000P + Battery charger C.1000 + other...see key

ILLUSTRATION	DESCRIPTION	FEATURES	CODE	KEY
	Single battery charger	Voltage 100-240V	C-1000	
		Voltage 12V	CV-1000-12V	
		Voltage 24V	CV-1000-24V	
	Battery charger for three torches	Voltage 100-240V	C-3000	
		Voltage 12/24V	CV-3000	
	Battery charger for five torches	Voltage 100-240V	C-5000	
		Voltage 12/24V	CV-5000	
	Holster		58606580	

L-5P and L-5RP portable LED torch

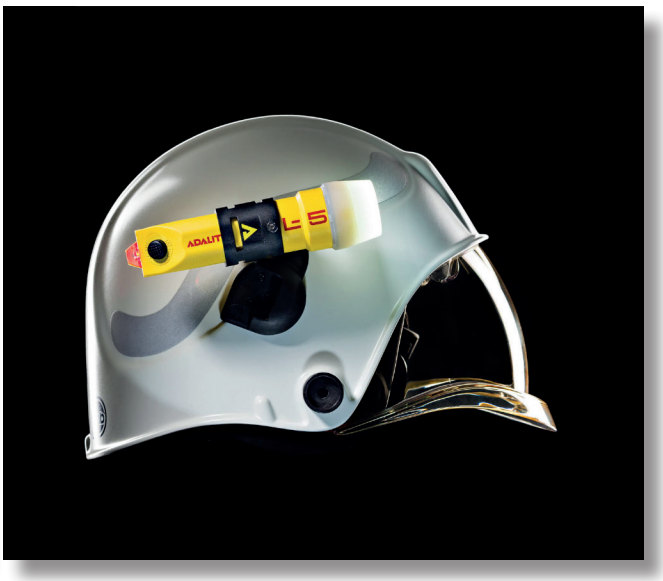
The L-5P hard hat torch and L-5RP rechargeable portable torch have been developed with the aim of reducing consumption and increasing light quality and output. To achieve this goal, we have fitted the torches with the latest generation LEDs and an automatic system to adjust light output based on input from a sensor. Designed mainly for use on hard hats and helmets, they are accessorized with fittings of various kinds, making them a valuable aid when used in conjunction with the L-3000P portable torch.

Application sectors:

Oil refineries | Chemical and petro-chemical plants | Agriculture and food plants | Offshore plants | Pharmaceutical industries | Powder magazines | Onshore plants | Fuel depots

CERTIFICATION DATA

Classification:	Group II	Category 1GD		
Installation:	zone 0 - 1 - 2 (Gas)	zone 20 - 21 - 22 (Dust)		
Marking:	CE ⟨Ex⟩ II 1GD Ex ia op is IIC T4 Ga - Ex ia op is IIIC T85°C Da IP67			
Certificate:	ATEX LOM 12 ATEX 2004	Portable LED torch : L-5P and L-5RP		
Standards:	EN 60079-0: 2013; EN 60079-11: 2012; EN 60079-28: 2015 and EUROPEAN DIRECTIVE 2014/34/UE			
Temperature class:	135°C (T4)			
Ambient Temp.:	-20°C +40°C			
Protection rating:	IP67			



L-5P and L-5RP portable LED torch

FEATURES

Torch

Body:	Thermoplastic resin with high impact strength and resistance to extreme temperatures and corrosive substances
LEDs:	1 x 135lm LED
Front lens:	Shatterproof clear polycarbonate
Sensor:	Light sensor for automatic light output adjustment
Batteries:	4xAAA/R0 alkaline batteries; 3.6V with L-5P torch Rechargeable lithium batteries; 3.6V with L-5RP torch
Battery run time:	4 h, L-5P torch 30 h, L-5RP torch
Operation test:	Warning given in the last 15 minutes when battery charge is running low
Switch:	Ergonomically designed button; oversized to ensure ease of use, even with gloved hands

Battery charger:

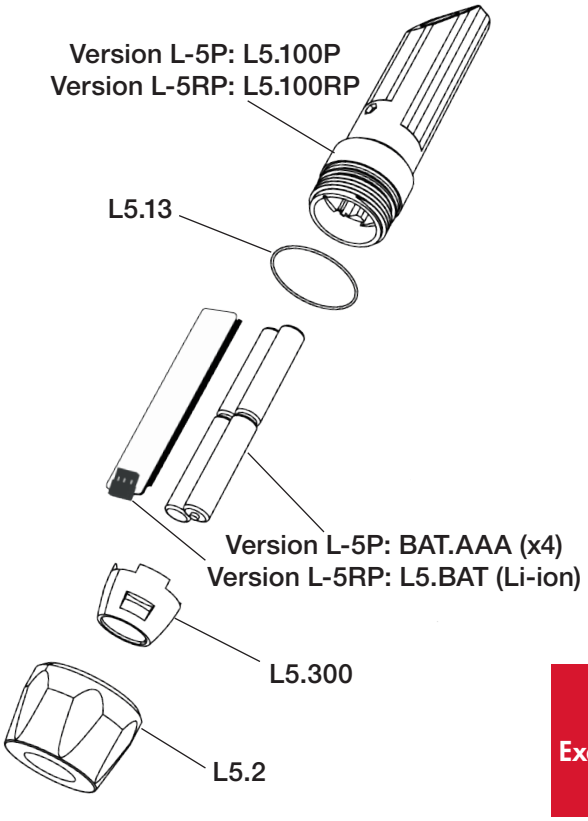
Marking:	CE, e9
Protection:	IP54
Charge duration:	Max. 4-5 hrs
Switch off:	Automatic end of charging
Charge indicators:	Red LED: charging Green LED: batteries charged
Power supply:	DC: 12V AC: 100/240 V, 50/60 Hz
Types and dimensions:	Single: 75x100x120 mm
Battery charger for 3 torches:	230x100x120 mm
Battery charger for 5 torches:	410x100x120 mm

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Battery charger for 1, 3 or 5 torches
Holster

L-5P and L-5RP portable LED torch

Code	Dimensions mm L	Dimensions mm Ø	Light output	Light intensity	Description	Weight kg
L-5P	150	44	Max. 150 lm	2.300 cd	Helmet flashlight	0,145
L-5RP	150	44	Max. 150 lm	2.300 cd	Rechargeable flashlight	0,125



DESCRIPTION	MODEL	CODE	KEY
Torch body	L-5P	L5.100P	
	L-5RP	L5.100RP	
End cap O-ring		L5.13	
Batteries	L-5P	BATT.AAA (x4)	SPARE PART
	L-5RP	L5.BAT	
LED module		L5.300	
Torch end cap with clear lens		L5.2	

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Torch L-5RP + Battery charger CL5-1 + other...see key ACCESSORY

ILLUSTRATION	DESCRIPTION	CODE	KEY
	Single battery charger	CL5.1	ACCESSORY SPARE PART
	Battery charger for three torches	CL5.3	ACCESSORY SPARE PART
	Battery charger for five torches	CL5.5	ACCESSORY SPARE PART
	Holster	CL5.8	ACCESSORY SPARE PART
	Hard hat adapters	Please seek advice on models from our sales department	ACCESSORY SPARE PART

LHL

- Zone 1, 2, 21, 22
- LED lamp
- Energy saving
- Lightweight and ergonomic
- Lighting comfort

LED circuit sealed with transparent resin

PVC handle grip

LED hand-lamp LHL-...P series

The hand-lamp LHL-...P series for LED tubes of 9/17 Watt have been designed for the work of inspection and maintenance in all those potentially explosive places for the presence of gas and dust as petrochemical industries, off-shore facilities, the areas of tank control and the process areas.
They are robust and easy to handle at the same time with a high degree of IP protection and excellent performance in light output.
The LED modules used for LHL-...P series hand-lamp allow to get an excellent color spectrum thanks to the type of light emitted by the LED.

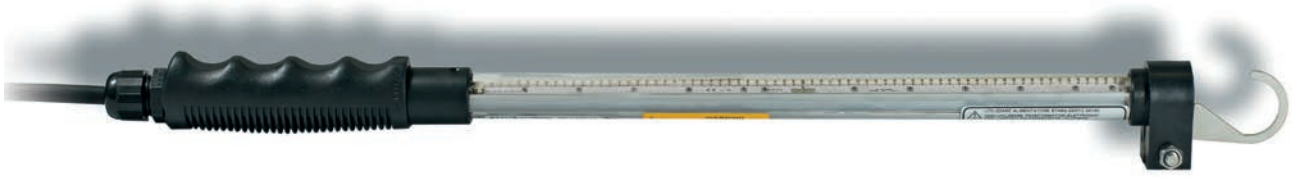
Application sectors:

Oil refineries | Gas Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Fuel liquid depots | Fuel tanker loading/ unloading areas | Perimeter lighting

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zona 1 - 2 (Gas)	zona 21 - 22 (Dust)		
Marking:	CE Ex II 2 G Ex e mb IIC T5/T4 (Gb)			
	CE Ex II 2 D Ex mb IIIC T95°C/T130°C (Db) IP66			
Certification:	ATEX CEC 13 ATEX 043			
Standards:	CENELEC EN 60079-0: 2009; EN 60079-7: 2007; EN 60079-18: 2009; EN 60079-31: 2009			
Class temperature:	135°C (T4)	100°C (T5)		
Ambient temperature:	-20°C +50°C	Special -20°C +60°C		
Degree of protection:	IP66			

LED hand-lamp LHL-...P series



ORIGINAL PRODUCT

MECHANICAL FEATURES

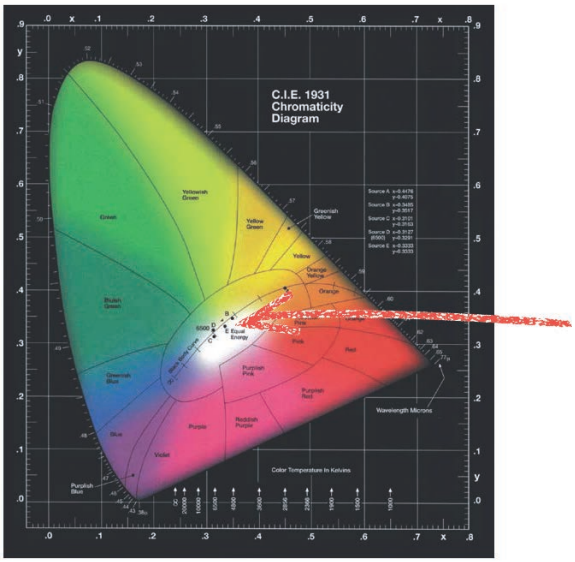
Body: Transparent tube in polycarbonate, V0 (UL94) resistant to shock and UV rays
Handle: Non-slip P.V.C. (polyvinyl chloride plasticized with non-toxic plasticizers)
Mounting: Hand-held lamp with stainless steel hook
Cable gland: Model UNI01 in polyammide

ELECTRICAL FEATURES

Power supply: 24 Vdc
Cable: H07RN-F 2x1 mm^2 lenght 5 m
LED source: Module with 72 LED)
Lifetime: > 50.000 hours

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different cable lengths



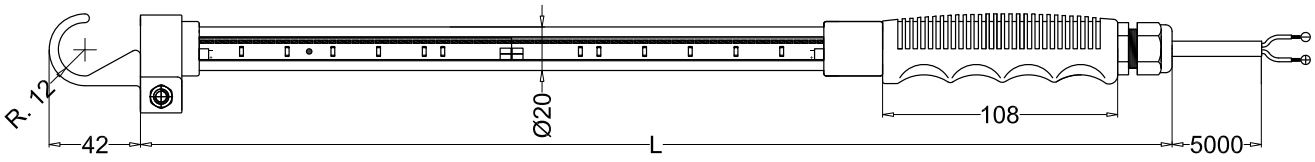
	LHL-10P	LHL-20P
Luminous flux (lm)	790	1580
Colour rendering index (Ra)	80	80
Luminous efficiency (lm/w)	87,78	92,94

The color temperature of the light produced is around 5500 K, almost the color temperature of day-light.
The pure white, also called achromatic point of reference corresponding to the point of equal energy in the C.I.E. diagram, is placed between 5455 K and 5500 K.

LHL-...P series selection chart

Code	Dimensions mm L	Type Lamp	Power supply	Watt	Class Ta =+40°C	Class Ta =+50°C	Class Ta =+60°C	Weight kg	mm
LHL-10P	475	LED	24 Vdc	9	T5	T5	T4	1,4	
LHL-20P	760	LED	24 Vdc	17	T5	T5	T4	2,3	

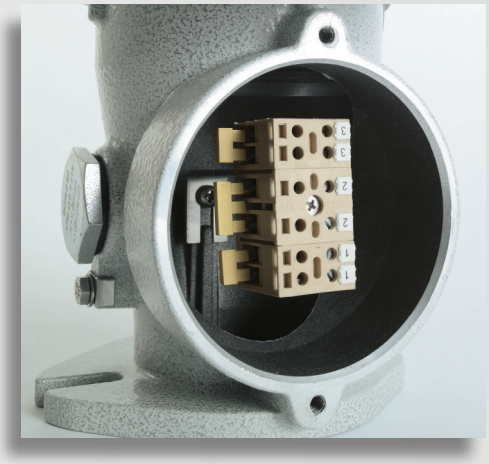
DIMENSIONAL DRAWING



XLFE-LIB

- Zone 1, 2, 21, 22
- Obstruction warnings
- LOW INTENSITY LED technology
- Lamp lifespan more than 10 years
- Complies with ICAO, FAA

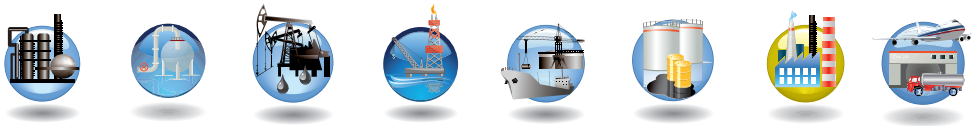
Ex e terminal box for fast connection



Low intensity XLFE-LIB LED Obstruction lighting fixtures

XLFE-LIB series low intensity lighting fixtures are suitable to be installed on towers or high buildings as obstacle signalling devices at night thanks to the high power and luminous efficiency light source developed by Cortem Group. The XLFE-LIB lighting fixture, red in color with a luminous intensity of more than 32 candles, complies for light distribution with the ICAO Annex 14 standard for low intensity aviation warning lamps type B (corresponding to the FAA L-810). Type B low intensity obstacle warning lights are designed for buildings with low extension and height above the ground of less than 45 meters. The XLFE-LIB series can be supplied to satisfy also the requests for obstacle warning lights low intensity type A since satisfies the photometric and light intensity requirements. They are also available for industrial signalling in flashing operation and with different light colors upon request. It is equipped with an internal reflector in chromium-plated anticorodal aluminium alloy.

Application sectors:



Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Combustible liquid depots | High buildings | Aircraft storage facilities Hangars

CERTIFICATION DATA

Classification:	Gruppo II	Categoria 2GD			
Installation: EN 60079.14	zona 1 - zona 2 (Gas)	zona 21 - zona 22 (Polveri)			
Marking:	CE 0722 Ex II 2GD Ex db eb IIC T6 Gb; Ex tb IIIC T75°C Db IP66				
Certification:	ATEX CML 19 ATEX 1333X				
	IECEx IECEx CML 19.0102X				
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-31: 2014, EN 60079-28: 2015, EN 60079-7: 2015 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-1: 2014-06, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS				
Class temperature:	75°C (T6)				
Ambient temperature:	-40°C +60°C (T6)				
Degree of protection:	IP66				

Low intensity XLFE-LIB LED Obstruction lighting fixtures

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
Glass face:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Internal reflector:	In chromed aluminum
Gaskets:	Silicone acid/hydrocarbon and high temperatures resistant
Mounting:	See "XLFE-LIB series dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	2 ISO M25 entries
Coating:	Epoxy coating Ral 7035 (light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

LEDs: 4 x LEDs fitted to electronic plate with single circuit

- High resistance to vibration (longer lifespan if installed in severe operating conditions)
- Estimated lifespan 100,000 hours (12 hours per day for 20 years)

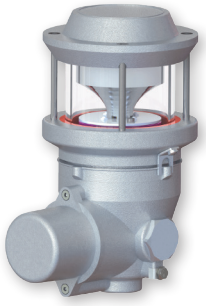
Obstruction lighting fixtures	Rated voltage	Rated frequency
XLFE-LIB-R230F	100-240 Vac ±10%	50/60 Hz
XLFE-LIB-R024F	18-32 Vdc ±10%	-

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: NAV25IB for armoured cable or NEV25IB for non-armoured cable

Ex or watertight protected control panel

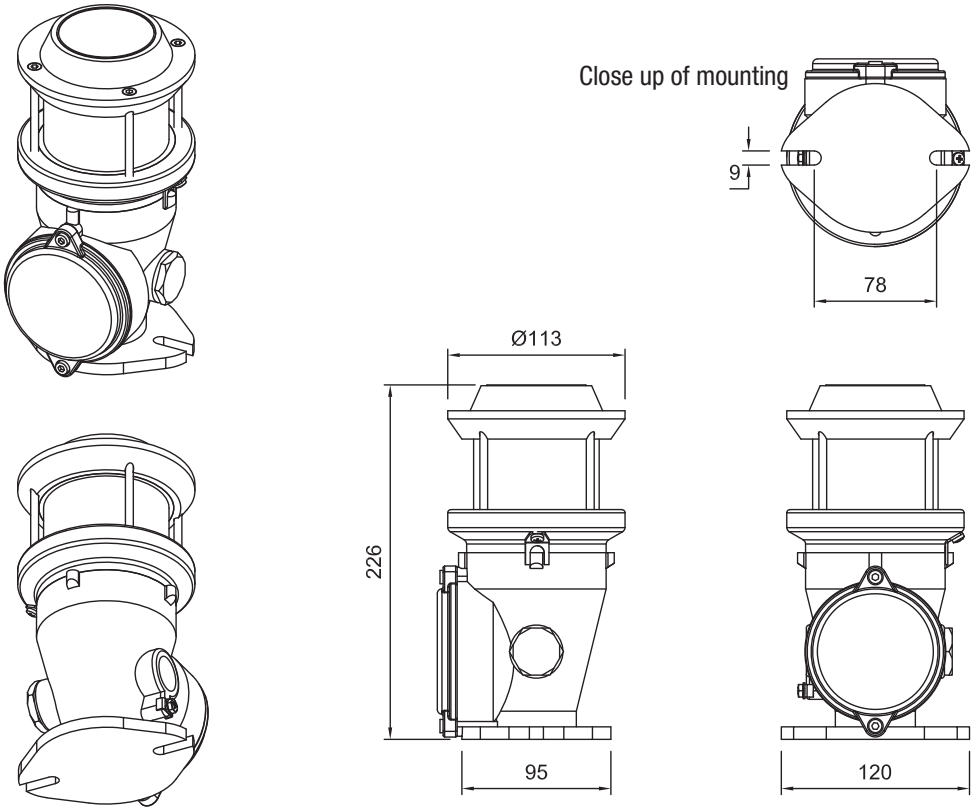
Version with 3 entries ISO M25 complete with 2 plugs PLG2IB (example code XLFE-LIB-R024L/**S**)



Low intensity XLFE-LIB LED Obstruction lighting fixtures

Code	Colour light	Type of light	Type of circuit	Power	Weight kg	mm
XLFE-LIB-R230F	Red	Fixed	Individual	6 W	2 Kg	232x125x125
XLFE-LIB-R024F	Red	Fixed	Individual	6 W	2 Kg	232x125x125

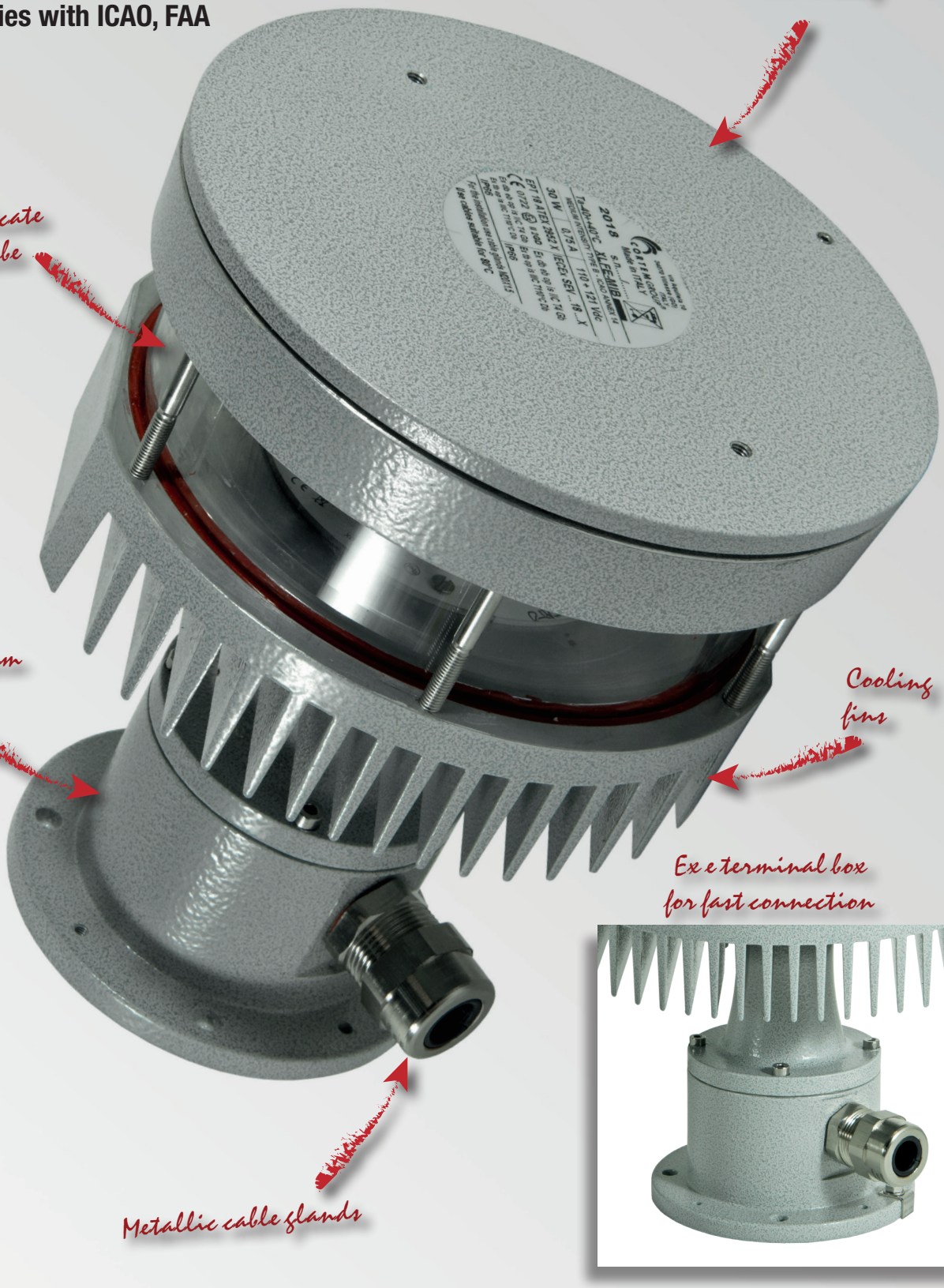
DIMENSIONAL DRAWING



Features	XLFE-LIB
Type of product:	Obstruction lighting fixture Low intensity
Light source:	LED
Color:	Red
Typical use:	Night hours
Power consumption:	6 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm^2, suitable for loop-in/loop-out
Vertical beam spread:	> 10°
Minimum light intensity (360°):	>32 cd in nighttime
Horizontal coverage:	360°

XLFE-MIB/1

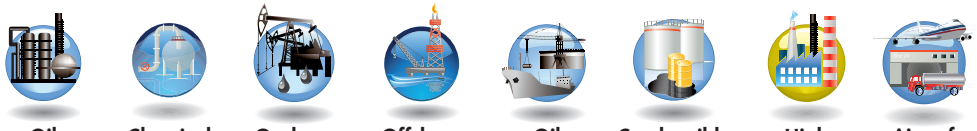
- Zone 1, 2, 21, 22
- Obstruction warnings MEDIUM INTENSITY type B
- LED technology
- Lifespan more than 10 years
- Complies with ICAO, FAA



XLFE-MIB/1 Medium intensity LED Obstruction lighting fixtures

XLFE-MIB/1 series Medium intensity LED Obstruction lighting fixtures can be installed in hazardous areas of industrial plants classified as Zone 1, Zone 2, Zone 21, Zone 22.
The light source was developed by Cortem Group upon the experience of the past in the world of LED lighting. In fact, the use of a new LED generation and of the reflector internally designed has allowed the reduction of external dimensions to Ø176x205mm. The red XLFE-MIB/1 series lighting fixture, with an intensity of more than 2000 candles and flashing operation, complies for light distribution with the requirements of the ICAO Annex 14 for aviation obstruction warning lights of medium-intensity B type.
The XLFE-MIB/1 series has been designed for Zone 1 with an 'Ex db' optical source. The particular design avoids any type of optical error typical of the glass globes.
As required by the ICAO regulations, the XLFE-MIB/1 series has a flashing operation, standard at 20 fpm, upon request at 40 fpm.
The installation is facilitated by the reduced dimensions, the wiring is done with cable gland in a 'Ex e' enclosure, avoiding the use of sealed cable glands or the resin finishing at high heights.
The signalling device is not a stand-alone device but it is part of a system that provides power from a panel. This choice reduces maintenance operations by making the power supplies accessible from the management panel.

Application sectors:

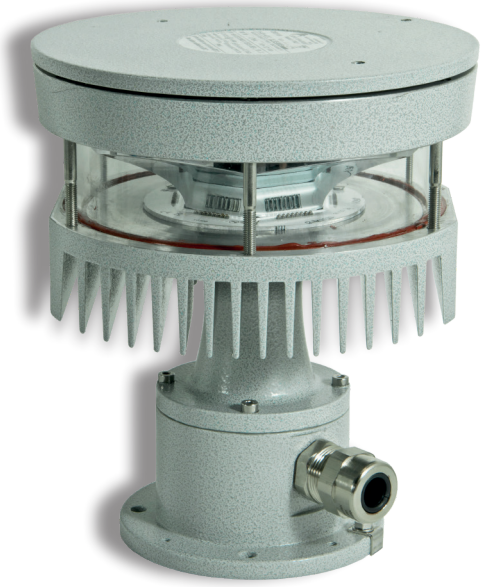


Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Combustible liquid depots | High buildings | Aircraft storage facilities Hangars

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation:: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex db eb IIC T4 Gb; Ex tb IIIC T110°C Db IP66			
Certification:	ATEX CML 19 ATEX 1333X			
	IECEx IECEx CML 19.0102X			
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-31: 2014, EN 60079-28: 2015, EN 60079-7: 2015 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-1: 2014-06, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	110°C (T4)	130°C (T4)		
Ambient temperature:	XLFE-MIB/1 -40°C +60°C			
Degree of protection:	IP66			

XLFE-MIB/1 Medium intensity LED Obstruction lighting fixtures



ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Internal reflector:	Chrome-plated aluminum
Gaskets:	Silicone acid/hydrocarbon and higt temperatures resistant
Mounting:	See "XLFE-MIB/1 series dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	1 ISO M20 entry complete with NAV20SIB
Coating:	Polyester coating Ral 7035 (light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Ex or watertight protected control panel

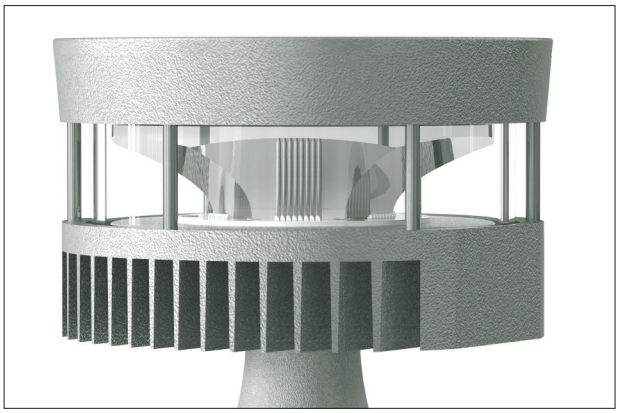
Cable gland: NAV25IB for non-armoured cable or NEV25IB for armoured cable
Birds deterrent **(G-1010)**

COMPLIANCE

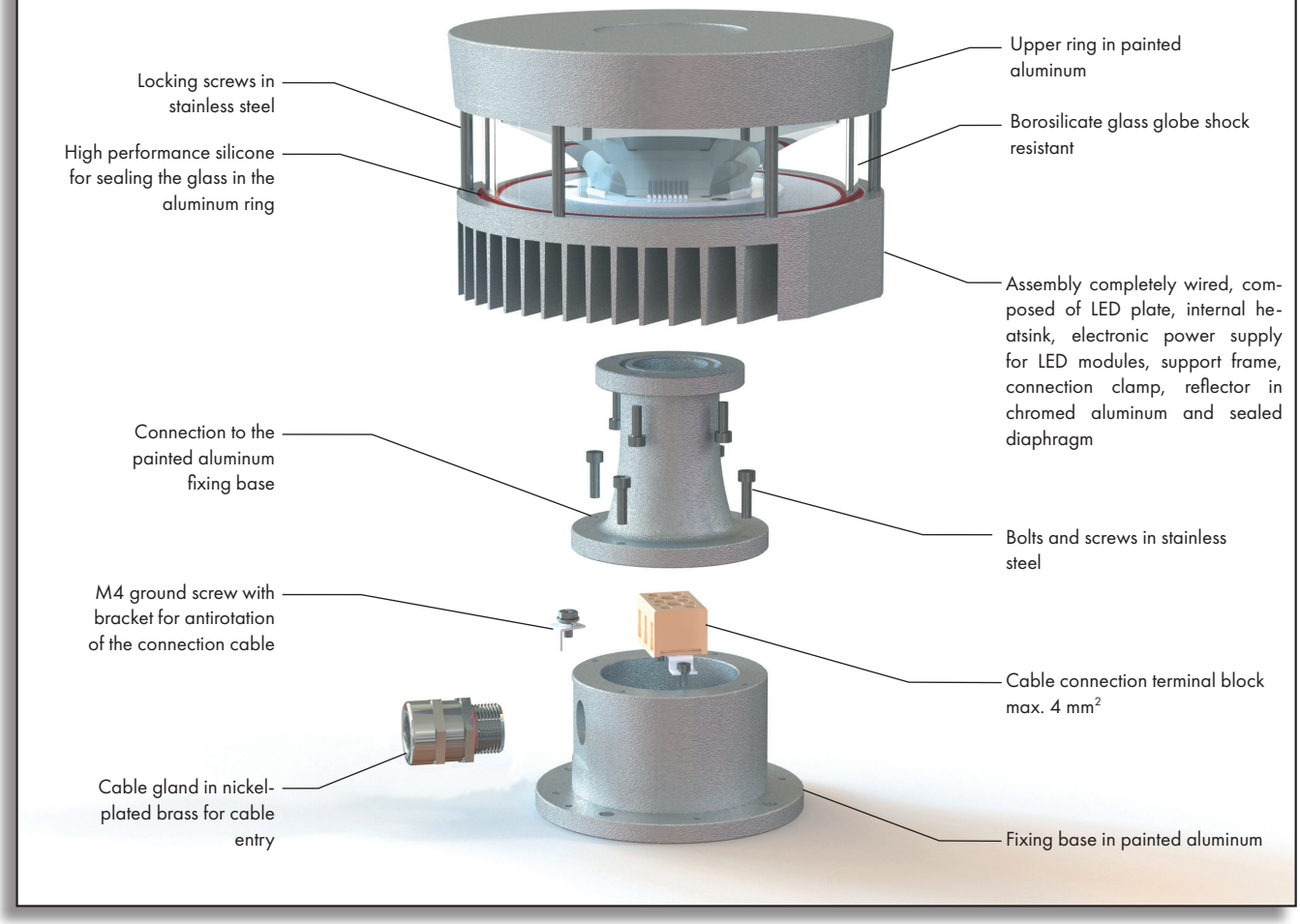
ICAO Regulations, FAA. The red XLFE-MIB/1 series lighting fixtures with luminous intensity of more than 2000 candles complies for light distribution with the ICAO Annex 14 Aerodromes vol. I. June 2016 (corresponding to the FAA model, L-864 code). In accordance with the provisions of this standard, the luminous flux of the lighting fixture on the horizontal plane is 360° while on the vertical plane it is 3°.

PATENTED

Patent Pending



EXPLODED DIAGRAM OF XLFE-MIB/1 OBSTRUCTION LIGHTING FIXTURE

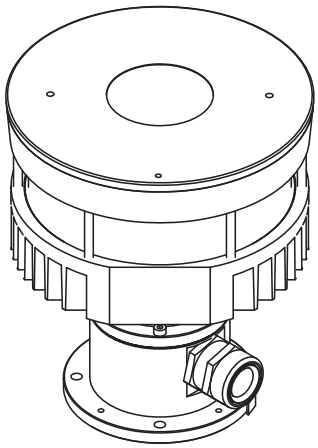


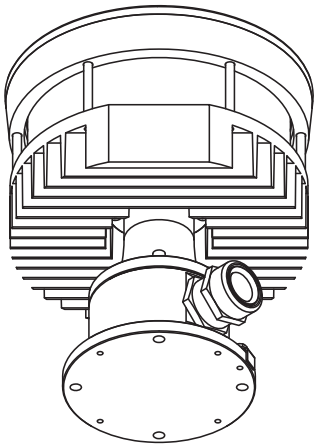
Features	XLFE-MIB/1
Type of product:	Obstruction lighting fixture Medium intensity Type B
Light source:	LED
Color:	Red
Typical use:	Night
Power consumption:	30 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm²
Flashing rate:	20 - 40 fpm (flash per minute)
Vertical beam spread:	3°
Minimum light intensity (360°):	2000 cd
Horizontal coverage:	360°

XLFE-MIB/1 Medium intensity LED Obstruction lighting fixtures

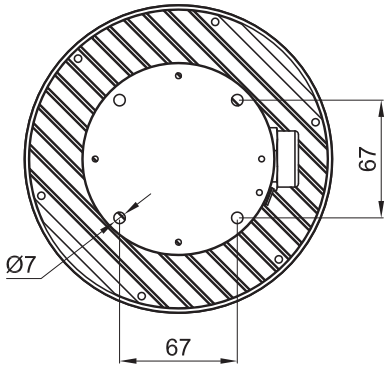
Code	Colour light	Type of light	Type of circuit	Power consumption	Ambient Temperature	Weight kg	mm
XLFE-MIB/1	Red	Flash	Single	30 W	-40°C +60°C	5	260x250x300

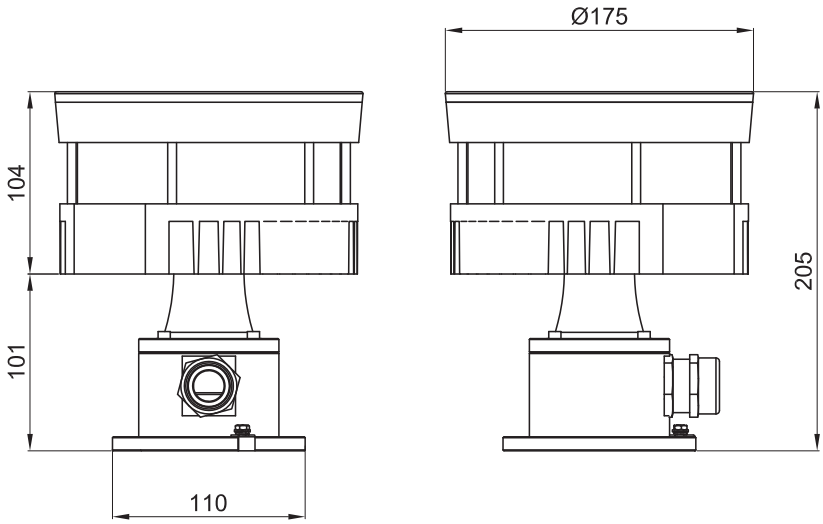
DIMENSIONAL DRAWING



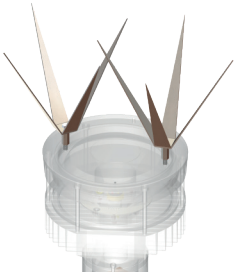


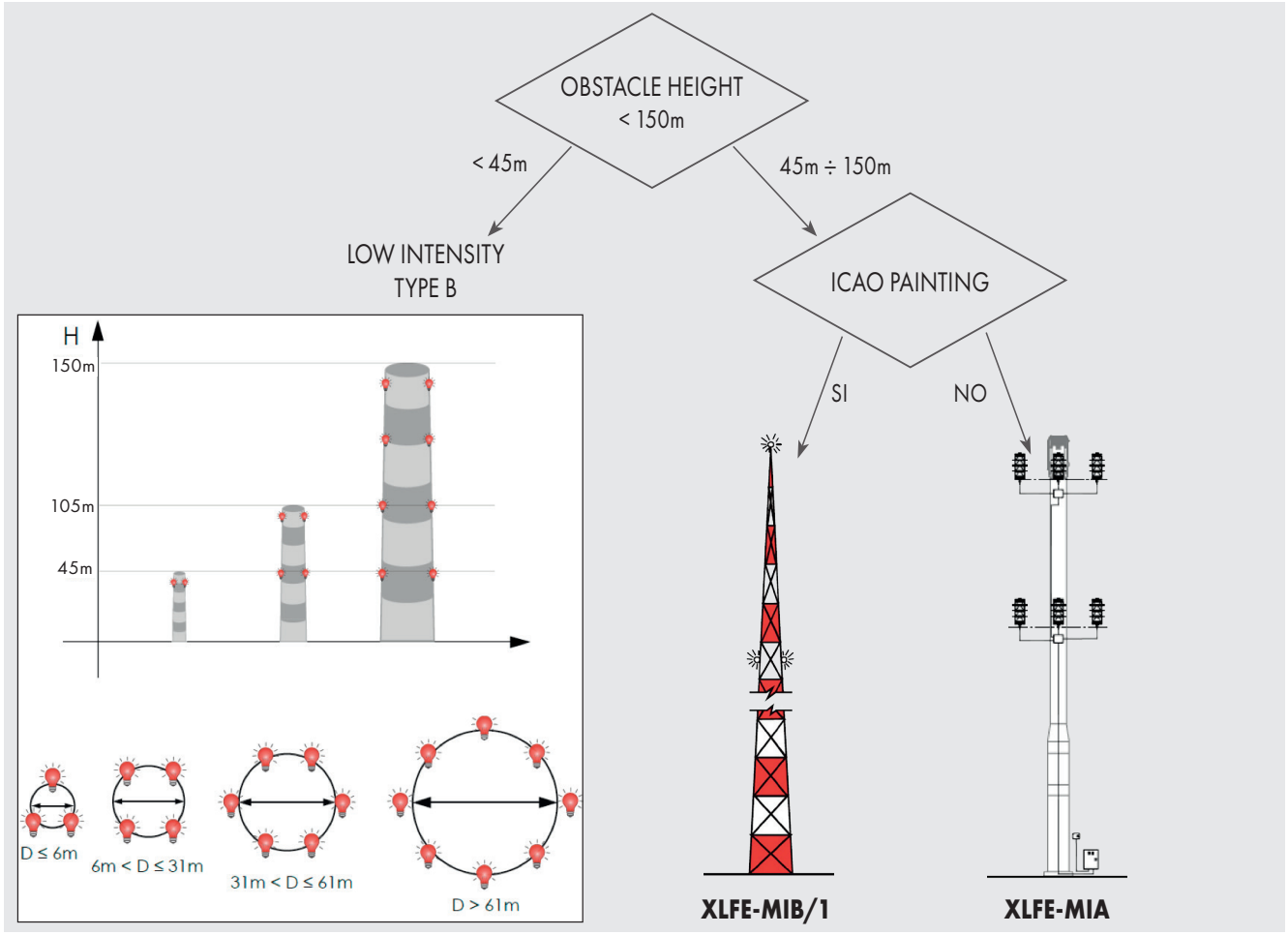
Close up of mounting





Dimensions in mm

ILLUSTRATION	DESCRIPTION	FEATURES	CODE	KEY
	Bird dissuader	Material: Stainless steel AISI 316L	**G-1010**	SPARE PART


OBSTACLE HEIGHT
< 150m
< 45m
45m ÷ 150m
LOW INTENSITY
TYPE B
ICAO PAINTING
SI
NO
H
150m
105m
45m
D ≤ 6m
6m < D ≤ 31m
31m < D ≤ 61m
D > 61m
XLFE-MIB/1
XLFE-MIA


H=105
H/2
H/2
H=150
H/4
H/4
H/4
H/4

XLFE-MIA
XLFE-MIC

- Zone 1, 2, 21, 22
- Obstruction warnings MEDIUM INTENSITY type A or C
- LED technology
- Lifespan more than 10 years
- Easy to install
- Complies with ICAO

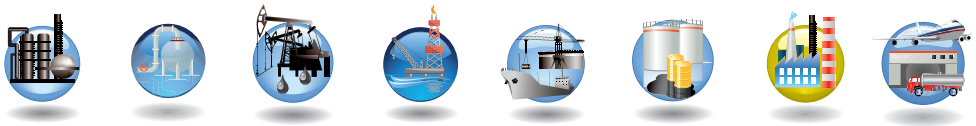
Ex e terminal box for fast connection

CORTEM GROUP®

XLFE-MIA Medium intensity LED Obstruction lighting fixtures

XLFE-MIA and XLFE-MIC series medium intensity LED Obstruction lighting fixtures can be installed in hazardous areas of industrial plants classified as Zone 1, Zone 2, Zone 21, Zone 22.
The flashing white color XLFE-MIA, with an intensity greater than 20,000 candles in daytime operation and greater than 2,000 candles in night-time operation, complies with ICAO annex 14 for aviation obstruction warning lights of medium-intensity type A.
The fixed RED color XLFE-MIC, with an intensity greater than 2,000 candles, complies with ICAO annex 14 for aviation obstruction warning lights of medium-intensity type C.
The XLFE-MIA and XLFE-MIC series have been designed for Zone 1 with an 'Ex db' optical source. The particular design avoids any type of optical error typical of the glass globes. The lamp body performs both the function of explosion protection and heat sink, thus avoiding the use of resin-coated optics, which are subject to deterioration over time.
The signalling device is not a stand-alone device but it is part of a system that provides power from a control panel. This choice reduces maintenance operations by making the power supplies accessible from the control panel.
With this system it is possible to manage the control of the lighting equipment failures, the eventual switching on of the spare indicators, the synchronization between different control panels also via cable or GPS technology.

Application sectors:



Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Combustible liquid depots | High buildings | Aircraft storage facilities Hangars

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex db eb IIC T4 Gb; Ex tb IIIC T110°C Db IP66			
Certification:	ATEX CML 19 ATEX 1333X			
	IECEx IECEx CML 19.0102X	For all IEC Ex and UKEX certificate data download the certificate from www.cortemgroup.com		
	UKEX AVAILABLE			
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-31: 2014, EN 60079-28: 2015, EN 60079-7: 2015 and DIRETTIVA EUROPEA 2014/34/UE IEC 60079-0: 2017, IEC 60079-1: 2014-06, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2017 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	70°C (T6)	90°C (T5)		
Ambient temperature:	-40°C +40°C (T6)	-40°C +60°C (T5)		
Degree of protection:	IP66			

XLFE-MIA Medium intensity LED Obstruction lighting fixtures

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Finish:	Anodic oxidation surface treatment suitable for structural parts with high corrosion resistance requirements.
Glass face:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Internal reflector:	Chrome-plated aluminum
Gaskets:	Silicone acid/hydrocarbon and higt temperatures resistant
Mounting:	See "XLFE-MIA series dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	1 ISO M20 entry

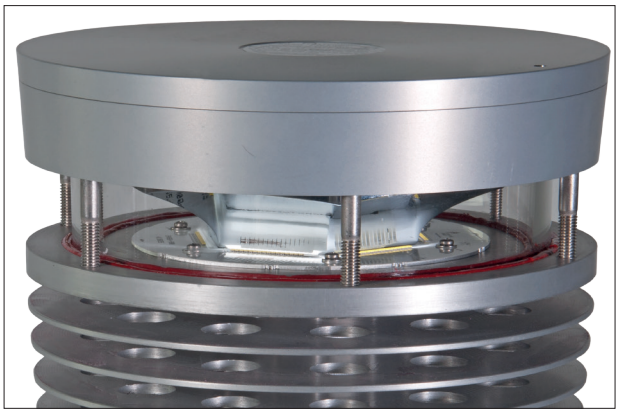
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

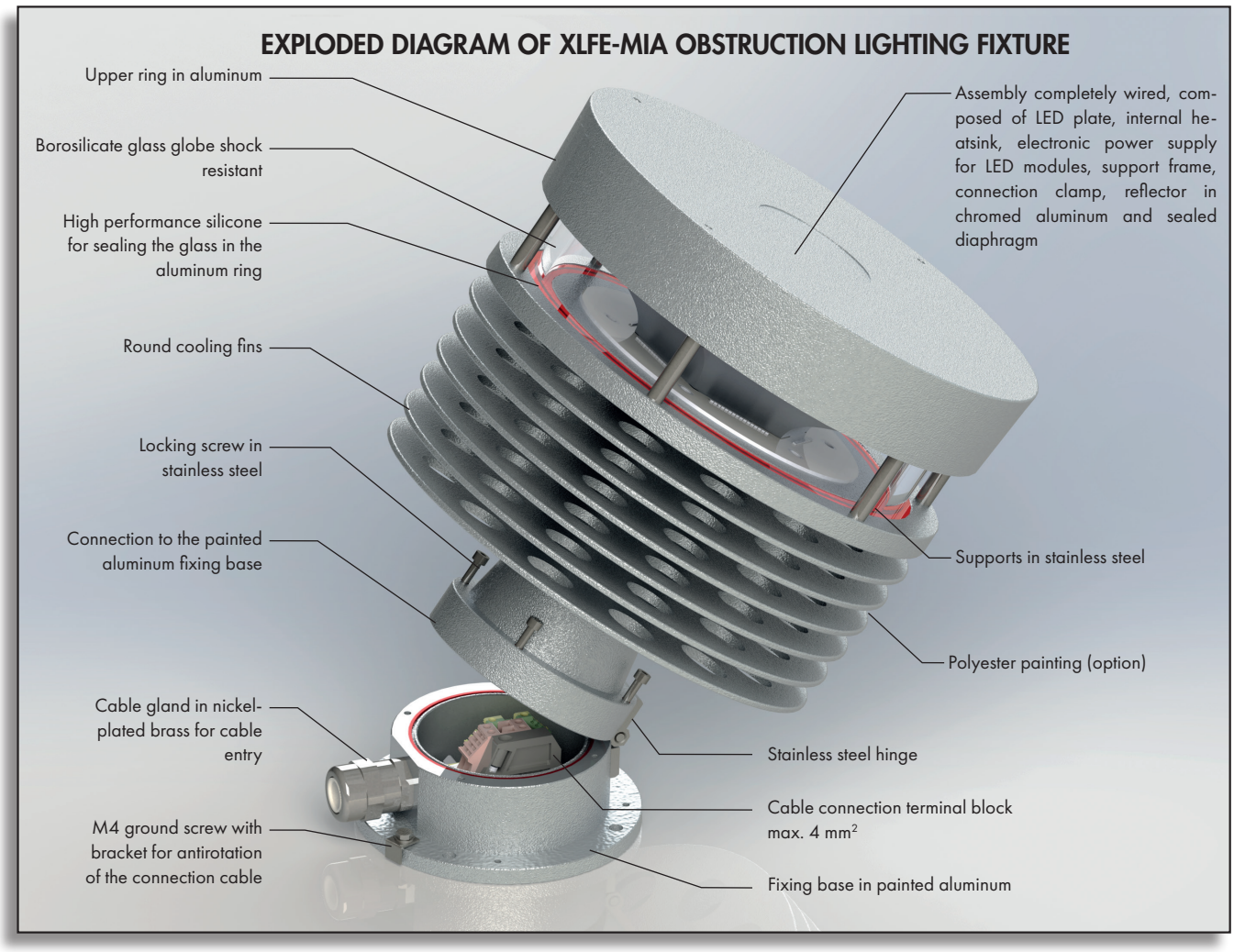
The fixed RED color **XLFE-MIC**, with an intensity greater than 2,000 candles, complies with ICAO annex 14 for aviation obstruction warning lights of medium-intensity type C.
Ex or watertight protected control panel
Cable gland: NAV20IB for non-armoured cable or NEV20IB for armoured cable
Heat shield
Polyester painting

COMPLIANCE

ICAO Regulations. The white XLFE-MIA series lighting fixtures, with an intensity greater than 20,000 candles in daytime operation and greater than 2,000 candles in nighttime operation, complies with ICAO annex 14 vol I. June 2016 for aviation obstruction warning lights of medium-intensity type A. In accordance with the provisions of this standard, the luminous flux of the lighting fixture on the horizontal plane is 360° while on the vertical plane it is 3°.

PATENTED



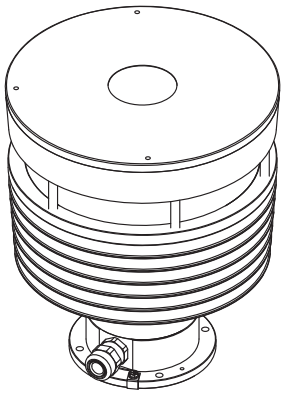


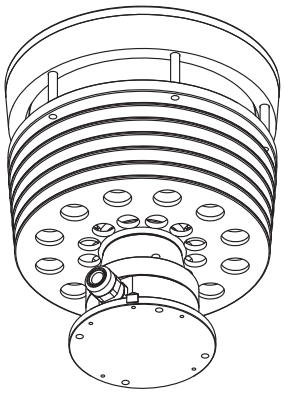
Features	XLFE-MIA	XLFE-MIC
Type of product:	Obstruction lighting fixture Medium intensity Type A	Obstruction lighting fixture Medium intensity Type C
Light source:	LED	LED
Color:	White	Red
Typical use:	Day and night hours	Night hours
Power consumption:	60 W	72 W
Connection:	Direct connection to terminal board ⊕, ⊖, PE. Section 4 mm²	Direct connection to terminal board ⊕, ⊖, PE. Section 4 mm²
Flashing rate:	20 - 40 fpm (flash for minute)	STEADY
Vertical beam spread:	3°	3°
Minimum light intensity (360°):	20.000 cd daytime operation 2.000 cd in nighttime	2.000 cd in nighttime
Horizontal coverage:	360°	360°

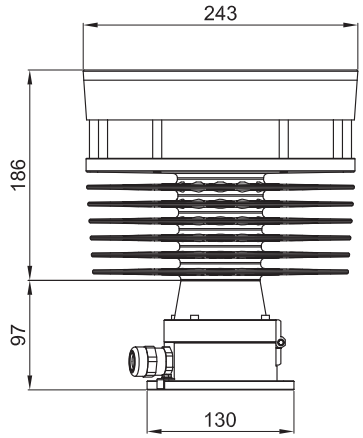
XLFE-MIA Medium intensity LED Obstruction lighting fixtures

Code	Colour light	Type of light	Type of circuit	Power	Weight kg	mm
XLFE-MIA	White	Flash	Single	60 W	8,5	260x250x300

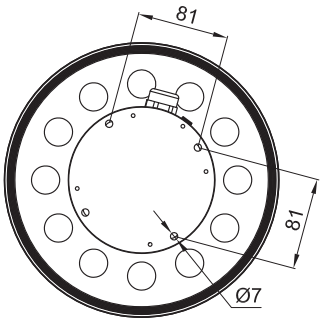
DIMENSIONAL DRAWING

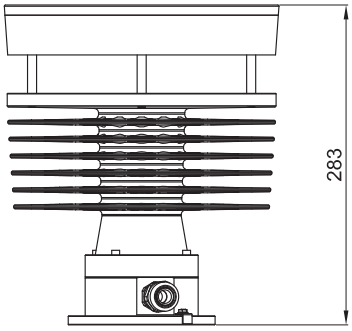






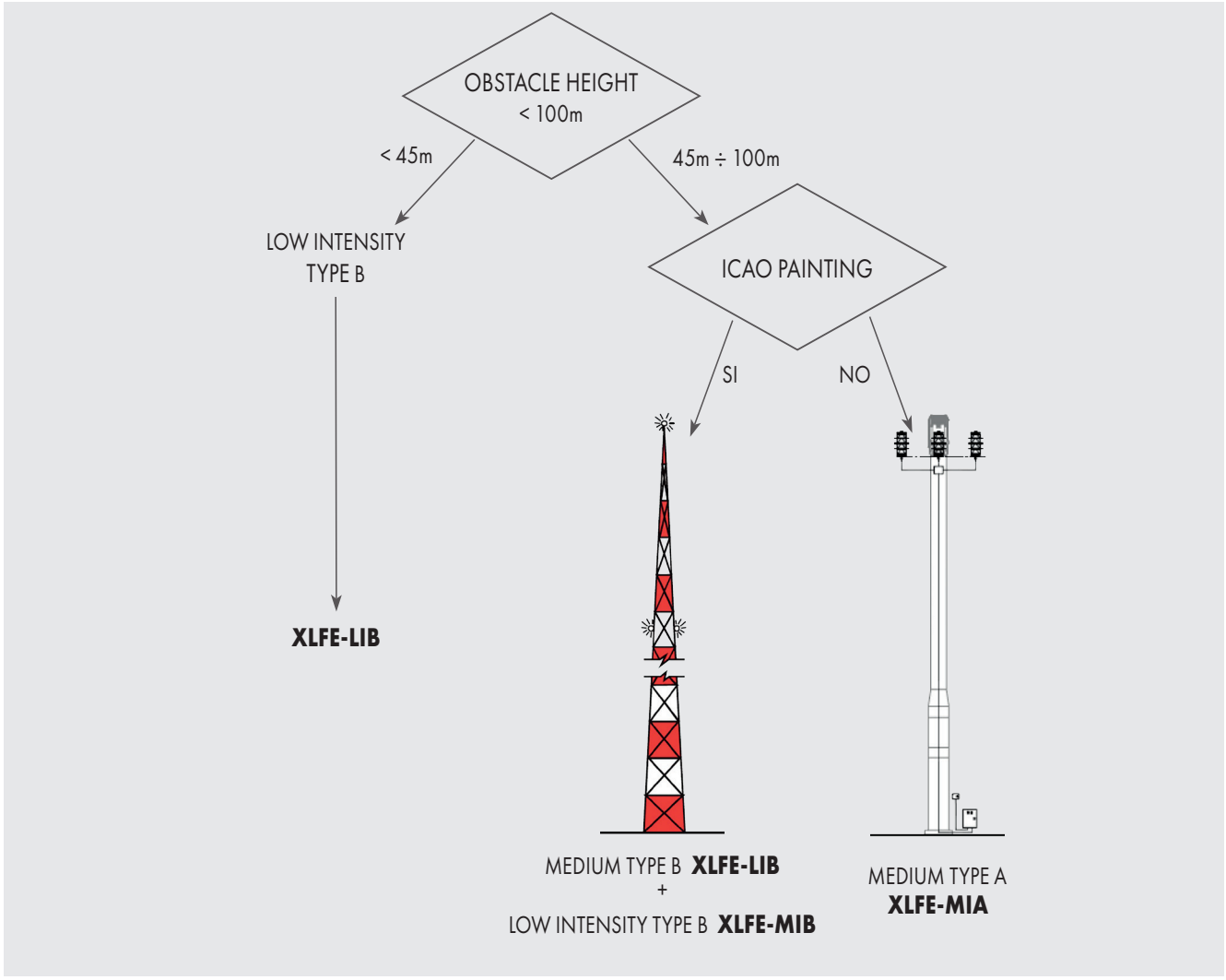
Close up of mounting



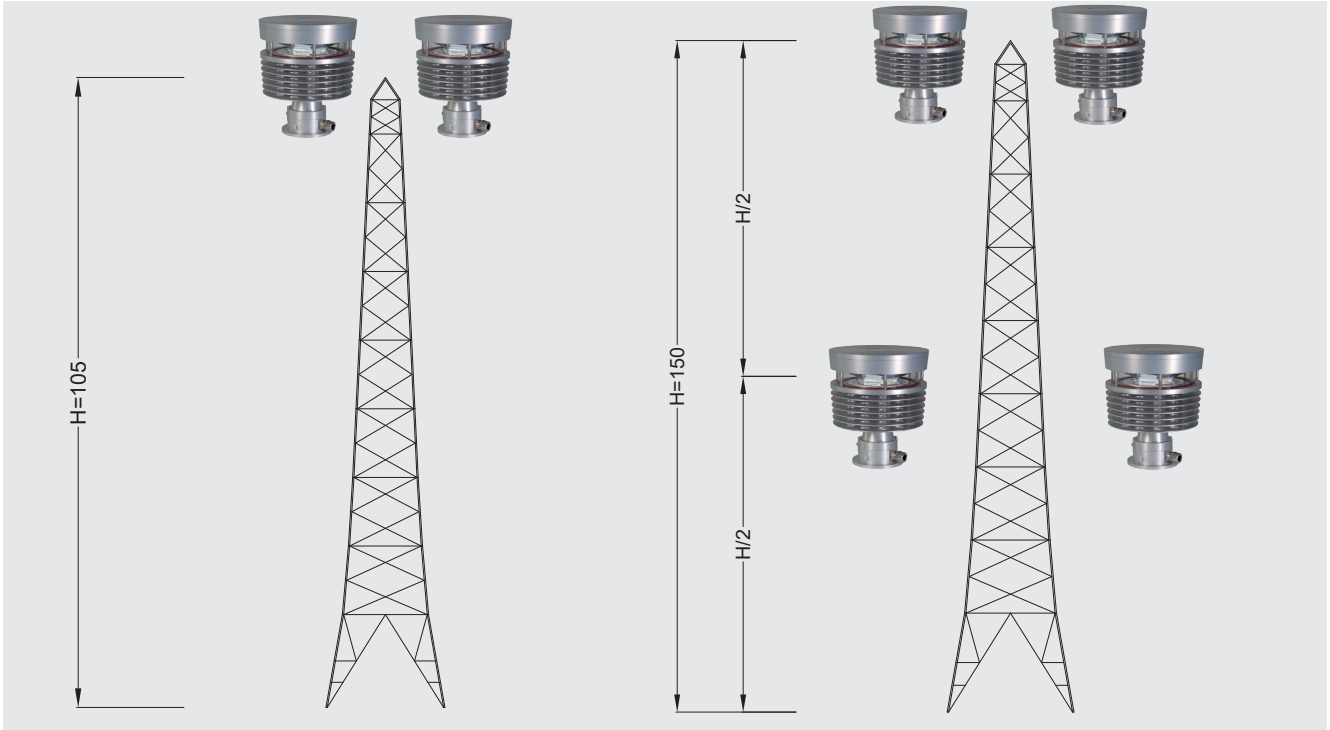


Dimensions in mm

Products selection flow-chart



Mounting scheme



CCA-02E/SLD

- Lower maintenance costs
- Lower power consumption
- LED technology
- Zones 1, 2, 21, 22

CORTEM GROUP®

CCA-02E/S...LD LED traffic lights

CCA-02E/S...LD series traffic light system is the result of research and development activities into the new LED lighting technology that can achieve optimum light efficiency, immediate power response times and very low power consumption.
These Ex d IIC traffic lights are suitable for regulating traffic in chemically aggressive industrial environments or potentially explosive areas classified as Zone 1 - 2 - 21 or 22.
It is made of low copper content aluminium and features tempered glass, coloured polycarbonate lenses and painted steel sun shades.
The benefits offered by the new CCA- 02E/S...LD system are as follows: lower maintenance costs, better visibility in critical conditions thanks to the LED lamps, better reliability thanks to the guaranteed continuous light even if one LED fails and, lastly, the lack of any "phantom" effect.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Fuel tanker loading/ unloading areas | Offshore plants | Emergency exits | Combustible liquid depots | Oil loading/ unloading jetties | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD			
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone22 (Dust)			
Marking:	CE 0722 Ex II 2GD Ex d IIC T6 Gb - Ex tb IIIC T85°C Db IP66				
Certification:	ATEX CESI 01 ATEX 036X				
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2007, EN 61241-0: 2006, EN 61241-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS				
Class temperature:	85°C (T6)				
Ambient temperature:	Standard -20°C +55°C	Special -40°C +55°C			
Degree of protection:	IP66				

CCA-02E/S...LD LED traffic lights

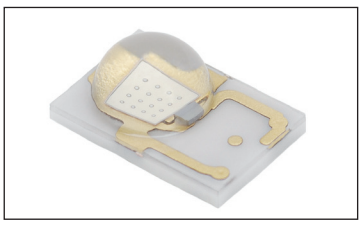
ORIGINAL PRODUCT

MECHANICAL FEATURES

Body and internal ring:	Low copper content aluminium alloy
Internal frame and bracket:	Aluminium
Sun shades:	Galvanised steel
Gasket:	Acid, hydrocarbon and high temperature resistant silicone
Glass face:	Shock and high temperature resistant tempered glass
Fresnel lens:	Polycarbonate
Coloured lens:	Red, yellow and green in polycarbonate
Bolts and screws:	Stainless steel
Mounting:	See "CCA-02E/S...LD series dimensional drawings"
Entries:	1 x 3/4" NPT
Coating:	Epoxy coating Ral 1003 (Signal yellow). Fixing brackets in painted galvanised steel upon request
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

LED:



- 4 LEDs installed on plate
  if one or more of the LEDs fails, the lamp keeps on working)
- High resistance to vibration (longer lifespan if installed in severe operating conditions)
- Estimated lifespan 50,000 hours
- Maintenance costs estimated to be about one tenth compared with systems currently in use

Power supply:	High efficiency electronic system. Protection against short circuit, overloading and restore system
Rated voltage:	230Vac ±10%
Rated frequency:	50/60 Hz
Connection:	Direct entries for cables to terminal board L, N, Pe. Max section 4mm^2
Power factor:	0.96
Wiring:	Silicone rubber cables with glass braid protection against high temperatures

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

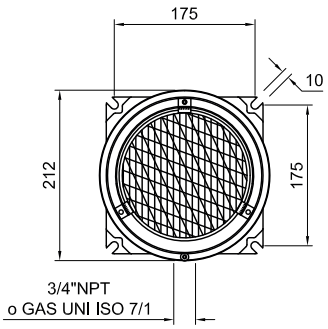
Cable gland: NEVB2NB for armoured cable or NAVB2NB for non-armoured cable
Rated voltage 24 Vac/dc (code CCA-02E/S2LD**24**)
Rated voltage 110-240 Vac (code CCA-02E/S2LD**S**)
LED traffic light units with Wi-Fi system

CCA-02E/S...LD series selection chart

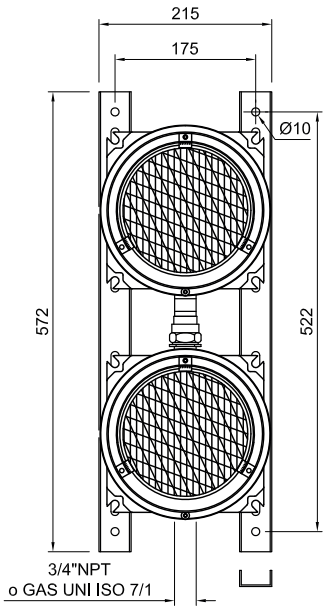
Code	LED colour	Number of signallers	Watt	Weight kg	mm
CCA-02E/S1-1LD	GREEN	1	6W	8	90x190x320
CCA-02E/S1-2LD	YELLOW	1	6W	8	90x190x320
CCA-02E/S1-3LD	RED	1	6W	8	90x190x320
CCA-02E/S2-4LD	GREEN + RED	2	6W	16	230x580x320
CCA-02E/S2-5LD	GREEN + YELLOW	2	6W	16	230x580x320
CCA-02E/S2-6LD	RED + YELLOW	2	6W	16	230x580x320
CCA-02E/S3-7LD	RED + GREEN + YELLOW	3	6W	24	230x870x320

DIMENSIONAL DRAWING

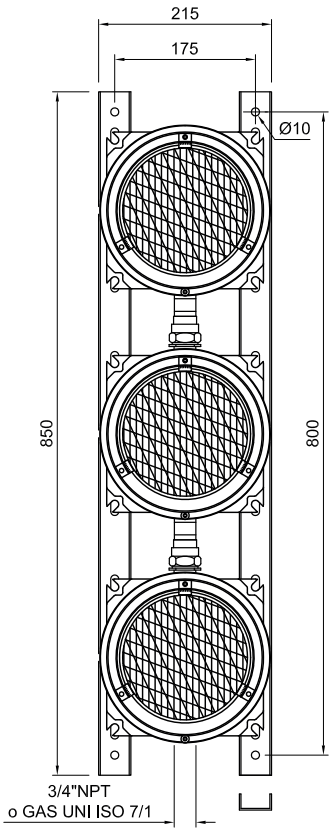
Configuration with one signaller

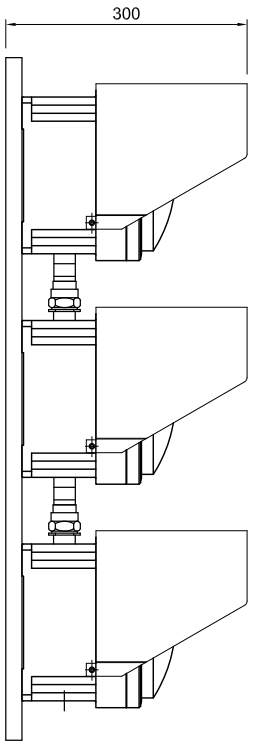


Configuration with two signaller

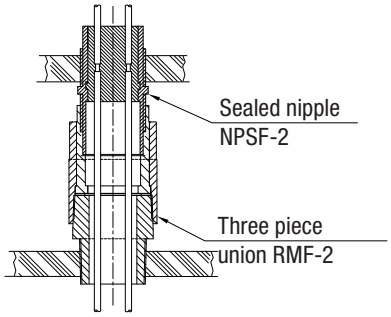


Configuration with three signaller



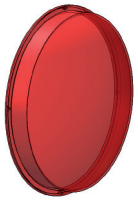
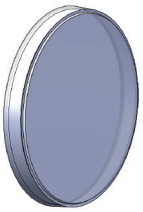
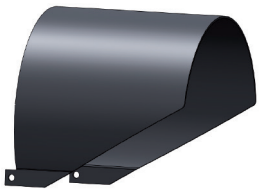
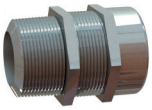


CLOSE UP OF TRAFFIC LIGHT WIRING COUPLING WITH 2 OR 3 SIGNALLERS

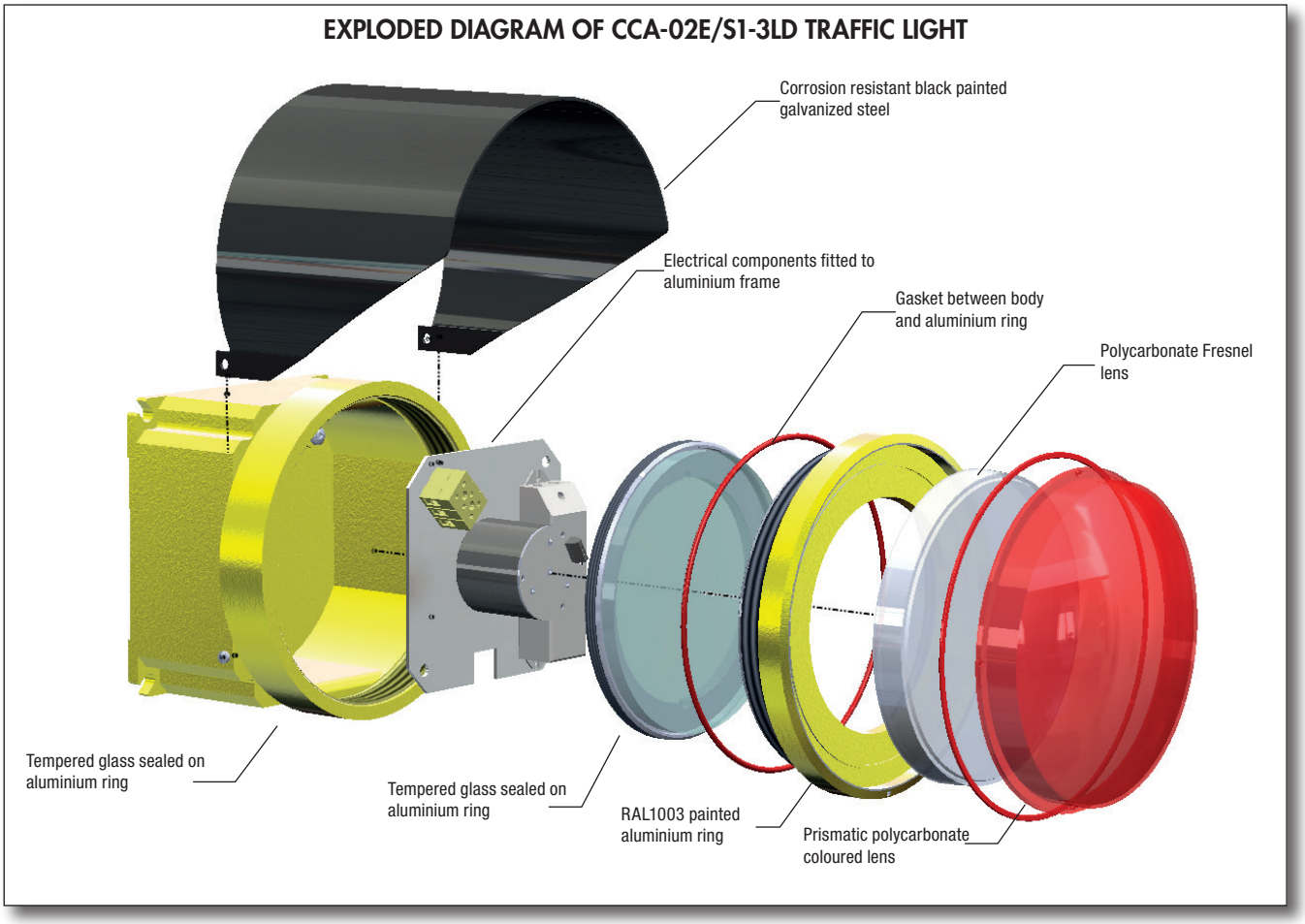


Dimensions in mm

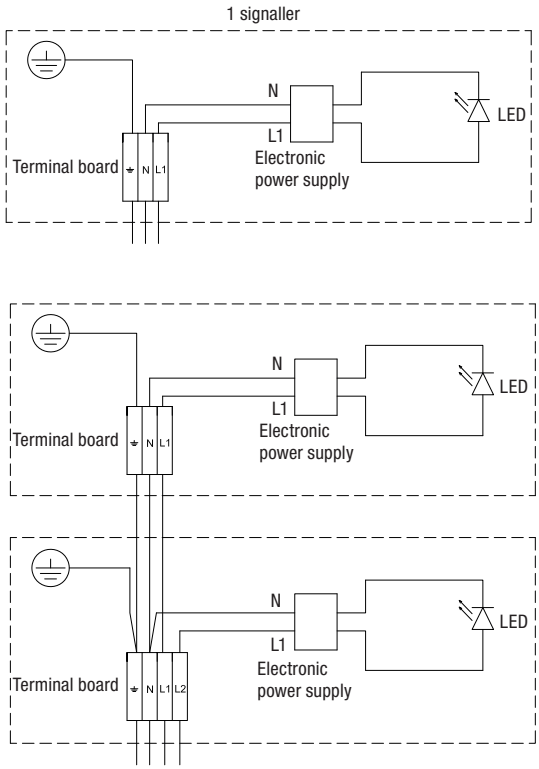
Accessories and spare parts available on request for CCA-02E/S...LD

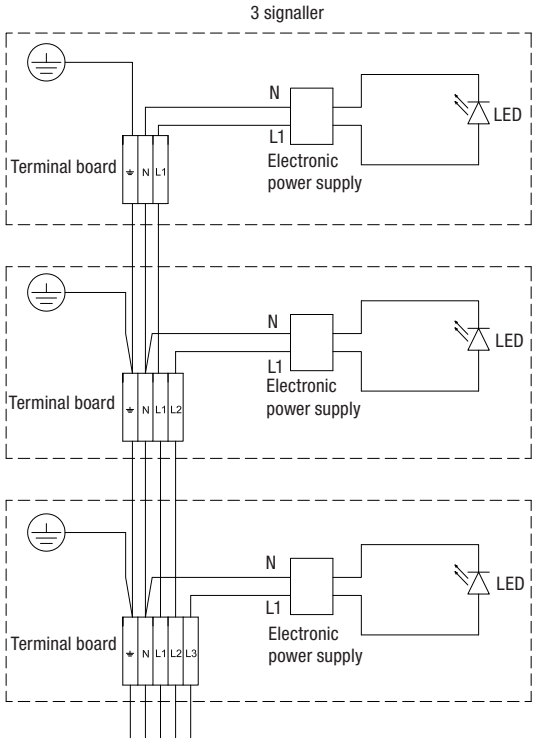
ILLUSTRATION	DESCRIPTION	FEATURES	CODE	KEY
	Coloured prismatic polycarbonate lens	Red lens	G-572R	SPARE PART
		Yellow lens	G-572G	
		Green lens	G-572V	
	Fresnel lens	Material: polycarbonate	G-573	SPARE PART
	Protective hood	Material: black painted steel	K-320	SPARE PART
	Electronic power supply	240V ±10%	6E350AL6W-F	SPARE PART
	Gasket	Material: NBR	K20-131	SPARE PART
	LED plate	Red LED board	G-614R	SPARE PART
		Yellow LED board	G-614G	
		Green LED board	G-614V	
	Cable gland	For models and codes, visit www.cortemgroup.com	NAVB2NB NEVB2NB	ACCESSORY SPARE PART

EXPLODED DIAGRAM OF CCA-02E/S1-3LD TRAFFIC LIGHT



WIRING DIAGRAM





LED traffic light units with Wi-Fi system

The Wi-Fi traffic light arose from the need to control dangerous roadway junctions, harnessing the technology of RF (radio frequency) communication.
It is common knowledge that individual units must communicate with one another for the purpose of coordinating the correct light colour to display to flowing traffic. The use of RF technology eliminates the need to dig up the road surface in order to "bury" the cables and / or sensors required in the systems used today.
In addition, Wi-Fi technology facilitates the use of a traffic light system in situations where a short-term solution, rather than a permanent installation, is required.

The units are available in two different combinations:

Model	Cortem custom products	Unit specifications
TL2LDWI	EJB-1A + CCA-02E/S2-4LD	Dual aspect R-G operation
TL3LDWI	EJB-1A + CCA-02E/S3-7LD	Three aspect R-Y-G operation

Both combinations are powered by mains electricity (100-240Vac, 50-60Hz).
The covers of the EJB-1A housings act as the control panel.
These are characterised by the following elements:
- Two indicator lights (red and green)
- A potentiometer for adjustment over time
- A five-position selector to set the operating mode

The EJB-1A housing contains:
- The TLCU circuit board
- The transformer
- Galvanic isolator for the installation of the antenna in hazardous areas

External antenna:
- Frequency range: 2400-2500MHz
- RF connector: N female
- Omnidirectional

Communication between the traffic lights (with $2 \leq n \leq 4$) which make up the "Traffic Light System" is performed by means of Master-Slave technology. For this reason, the traffic light system will always have a single Master device and at least one Slave device. To this end, the five position selector makes it possible for each traffic light to select from the following operating modes:

Selector position	Operating mode
OFF	System powered OFF
Master	Device on which it is possible to adjust and set the duration of time the aspects of the entire traffic light system are ON
Slave-1	Slave-1
Slave-2	Slave-2
Slave-3	Slave-3

Communication between Master and Slave-n is twoway. Therefore, the Slave-n transmits its status to the Master device and, at the same time, receives commands to switch the aspect ON. This information exchange occurs by means of RF serial communication via the UART peripheral of the TLCU microcontroller.
This peripheral interfaces with an XBee module which provides a RF transmission equivalent to communication via serial cable. Lastly, communication complies with the IEEE 802.15.4 protocol.

Principles of operation

Sequence for powering ON the traffic light system

The sequence for power ON the traffic lights is defined, unambiguous and must be performed in the following order:

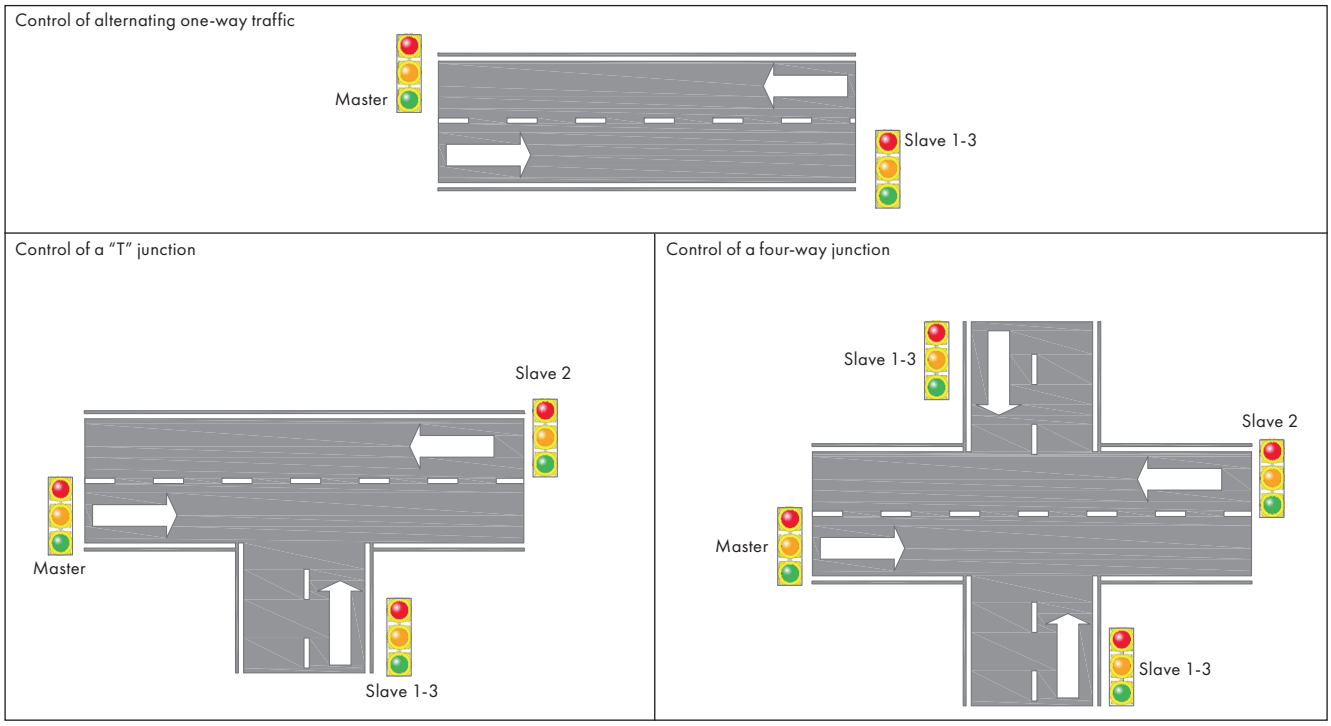
1. Slave-n devices are configured/powered ON
2. The Master device is configured/powered ON

This requirement derives from the fact that the Master, when powered ON, checks for the presence of other traffic light units. It then acquires the unique address (8+8 bit MAC address) of each unit which it will then use to control them. Therefore, if a Slave fails/powers OFF and has to be replaced, the Master must be restarted. In any event, in view of the internal reaction times, the correct activation Master and Slave-n is ensured, even if they are powered ON simultaneously.

Sequence for powering ON the aspects, and timings management

For the Master device, the powering ON sequence of the aspects is the reverse of the sequence used for the Slave-n device (with n = 1, 3). Conversely, the Master device has the same powering ON sequence as that of the Slave-2 aspects. For this reason it is recommended to select:

- Master + Slave-1/3 for streets with alternating one-way traffic
- Master + Slave-2 + Slave-1/3 three-way junctions
- Master + Slave-1 + Slave-2 + Slave-3 for four-way junctions providing traffic lights on a case by case basis as shown in the figure below::



Errors and fault signals

Each traffic light unit (two or three aspect units configured as Master or Slave-n) has specific operating statuses which, in the event of an error/fault, are reported by the two indicator lights located on the control panel.

Device status	Green indicator light	Red indicator light	Aspect status
Normal operation/Correct coordination	ON	OFF	According to sequence
Searching for Master/ Slave	Flashing	OFF	Flashing yellow if 3 aspects Flashing red if 2 aspects

Specifically, each device recognises the following errors:

- General power supply fault or no power (error Pwr_err)
- RF communication fault (module, antenna, interference...) (error RF_err)
- Aspect transformer fault (error 18V_err)

LFEE

- Zone 1, 2, 21, 22
- Group IIC
- LED lighting
- Stainless steel casing

LFEE emergency lighting fixture

The increased safety LFEE series emergency lighting fixtures are designed for lighting and identifying emergency exits or escape routes in the event of danger. The LFEE series consists of AISI 316L stainless steel casing, a tempered glass or UV-resistant polycarbonate window printed with a pictogram and a resin LED strip light positioned at the distance required to guarantee 'Ex op is' protection. The emergency versions are fitted with a high-brightness LED indicator light that monitors battery operation and notifies the user in the event of a fault. It switches on automatically if there is a power failure and runs for up to 6 hours.
The red LED switches off to indicate that the batteries need replacing either because of a fault in the emergency circuit or because they are flat.

Sectors of application:

Petroleum refineries | Chemical and petrochemical facilities | Tanker loading/unloading areas | Tanker loading/unloading areas | Passageways | Emergency exits | Stair handrails | Perimeter zone lighting

CERTIFICATE DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex db eb mb op is IIC T... Gb - Ex tb op is IIIC T...°C Db IP 66			
Certificate:	ATEX CML 18 ATEX 3150X IEC Ex IECEx CML 18.0079X	For all IEC Ex and ATEX certificate data, download the certificate from www.cortemgroup.com		
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-18: 2015, EN 60079-1: 2014, EN 60079-28: 2015, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC 60079-0: 2017, IEC 60079-1: 2014-06, IEC 60079-7: 2015, IEC 60079-18: 2014, IEC 60079-28: 2015, IEC 60079-31: 2013 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Temperature class:	60° (T6)	70° (T5)		
Ambient temperature:	Normal -30°C +45/55°C	With emergency -20°C +45/55°C		
Degree of protection:	IP66			

LFEE emergency lighting fixture

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body and lid:	Stainless steel AISI 316L
Window:	Tempered glass or polycarbonate
Glass:	Tempered, resistant to high temperatures and shocks
Polycarbonate:	Highly transparent, resistant to UV rays and shocks
Gaskets:	Resistant to acid, hydrocarbon and high temperatures, positioned between the body and the lid.
Screws, bolts and nuts:	Stainless steel
Assembly:	4 fastening brackets in stainless steel AISI 316L
Entry points:	2 entry points diameter 20.5. Fixture complete with a PLG1IB plug and NAV20SIB cable gland

ELECTRICAL FEATURES

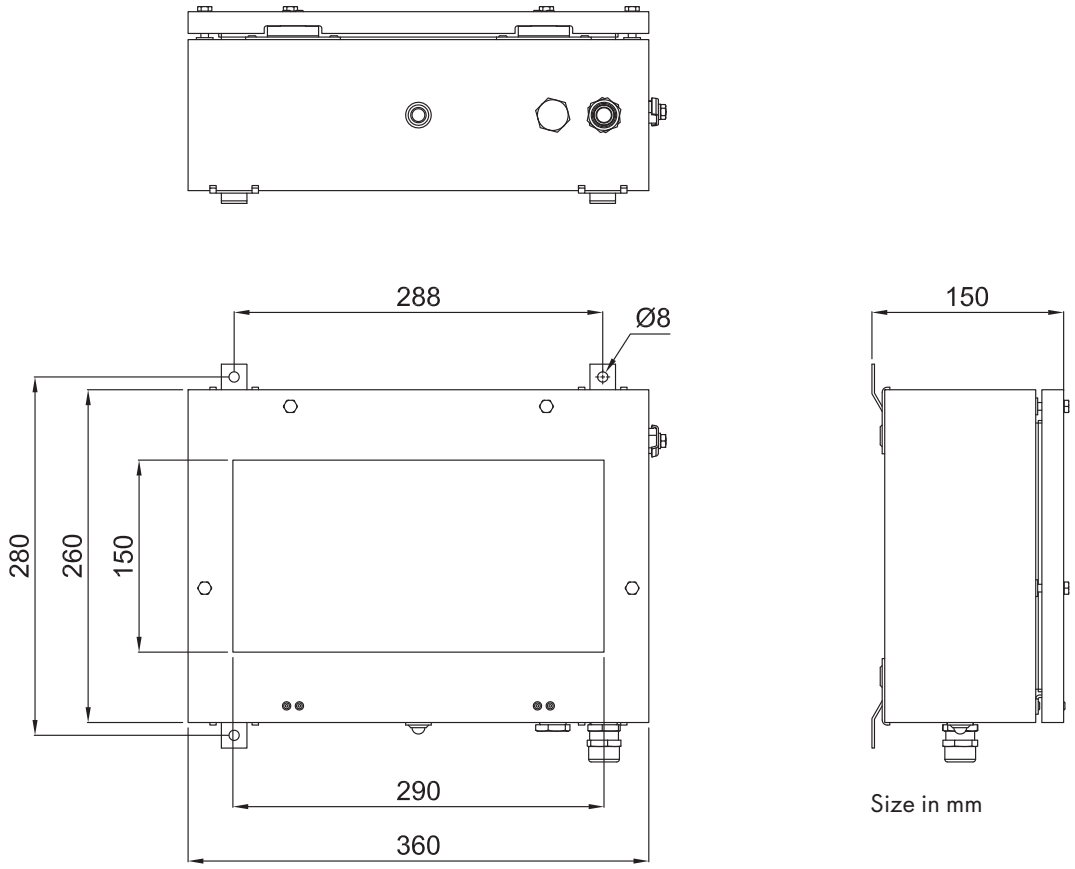
Autonomy in emergency mode:	6 hours
Rated voltage:	Normal operation only: 110-240 Vac / 127-240 Vdc Emergency operation only: 110-240 Vac / 110-240 Vdc Normal + emergency operation: 110-240 Vac / 127-240 Vdc
Rated frequency:	50/60 Hz
Connection:	Directly to the terminal board L, N, Pe cross sec. 4 mm^2, jumpered terminal board suitable for in-out
Emergency unit:	Electronic inverter 110/240 Vac 50/60 Hz, 110-270 Vdc. Batteries Ni/Cd, 4 Ah
Cabling:	Silicone rubber cables with braided fibreglass protection for high temperatures
Charge level:	High-brightness LED indicator light, consumption 20 mA, showing the battery charge level for emergency versions.

NOTE: the technical and electrical data may change without prior warning owing to continuous developments in LED technology.

ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Additional cable gland for in-out connection.
Pictogram with various words/lettering on request.

DIMENSIONAL DRAWING



Size in mm

CODES

LFEE - 112 [ ] [ ] [ ]

1 strip - 12 W

Operation
empty = normal
E = emergency only
N = normal + emergency

Transparent material
empty = glass
P = polycarbonate

Pictogram
empty = EXIT (EXIT)
/S = (exit left)
/D = (exit right)
/G = (exit straight ahead)
/T = (transparent)

Sample order code

LFEE-112EP/D
Lighting fixture, emergency version only, with exit right pictogram.

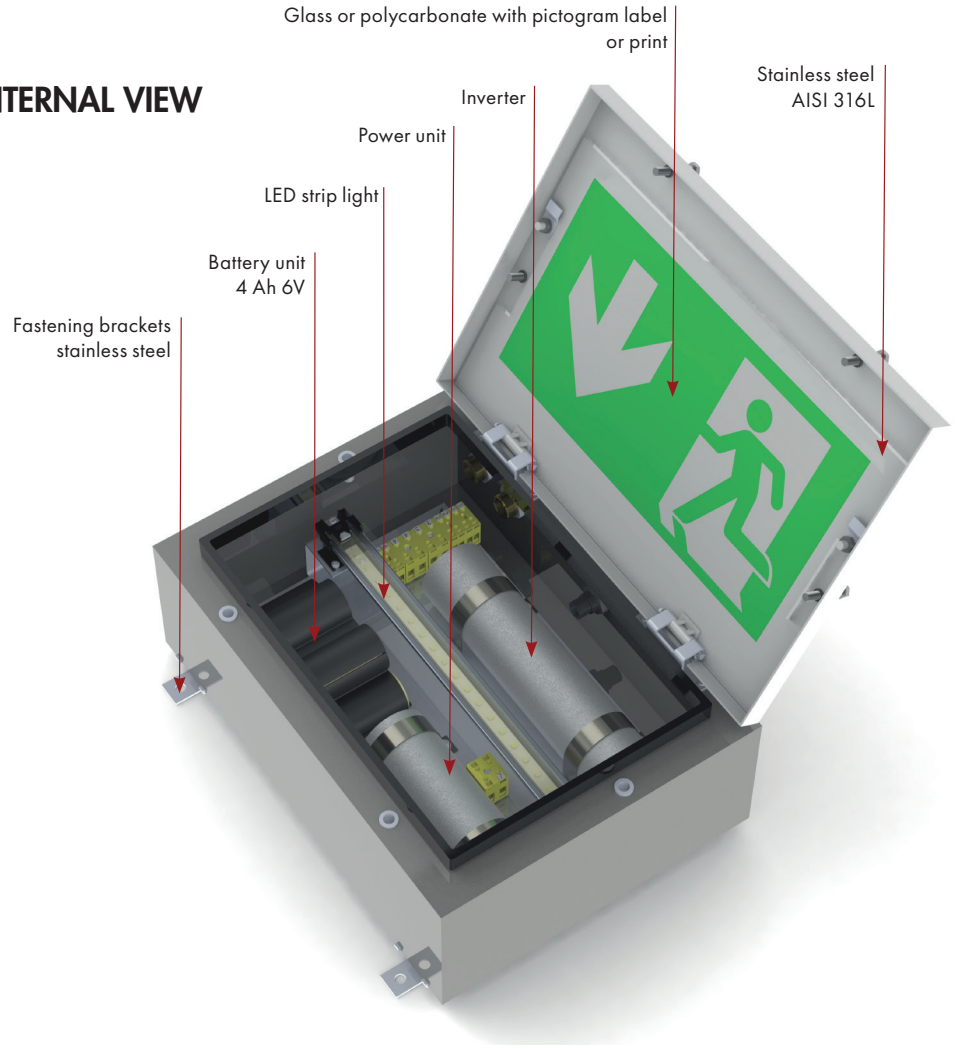
DO NOT FORGET TO ORDER THE ACCESSORIES

Example: Type of fixture LFEE- 112N/G + Cable gland (additional) NAV20SIB + Other (see legend)

LFEE emergency lighting fixture

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	LEGEND
	LED strip light		Resin LED module	**LTT8350E**	SPARE PART
	Single LED		Colour: red	**M-0487/330**	SPARE PART
	Battery unit		4 Ah 6V NiCd	**G-0309B**	SPARE PART
	Inverter		110/240Vac 50/60 Hz, 110-270 Vdc	**EI-30L/2**	SPARE PART
	Power unit		110-240 Vac	**EB208L**	SPARE PART
	Additional cable gland	ISO M20	std. cable range: 6.3-14	**NAV20SIB**	ACCESSORY SPARE PART

INTERNAL VIEW



LFED

- Zone 1, 2, 21, 22
- Group IIB+H_2
- LED lighting
- Aluminium casing
- Tempered front glass

LFED emergency lighting fixture

The explosion-proof LFED series emergency lighting fixtures are designed for lighting and identifying emergency exits or escape routes in the event of danger. The LFED series consists of low copper content aluminium alloy casing, a tempered glass window printed with a pictogram and a resin LED strip light positioned at the distance required to guarantee 'Ex op is' protection. The emergency versions are fitted with a high-brightness LED indicator light that monitors battery operation and notifies the user in the event of a fault. It switches on automatically if there is a power failure, and lasts between 3 and 5 hours depending on the capacity of the chosen batteries.
The red LED switches off to indicate that the batteries need replacing either because of a fault in the emergency circuit or because they are flat.

Sectors of application:

Petroleum refineries | Chemical and petrochemical facilities | Tanker loading/unloading areas | Tanker loading/unloading areas | Passageways | Emergency exits | Stair handrails | Perimeter zone lighting

CERTIFICATE DATA

Classification:	Group II	Category 2GD			
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)			
Marking:	CE 0722 Ex II 2GD Ex db op is IIB+H_2 T6 Gb - Ex tb op is IIIC T72°C Db IP 66				
Certificate:	ATEX EPT 18 ATEX 2969 X IEC Ex SEV 18.0018X	For all IEC Ex certificate data, download the certificate from www.cortemgroup.com			
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-28: 2015, EN 60079-31: 2014, and EUROPEAN DIRECTIVE 2014/34/EU IEC 60079-0: 2017, IEC 60079-1: 2014, IEC 60079-28: 2015, IEC 60079-31: 2013 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS				
Temperature class:	72°C (T6)				
Ambient temperature:	Normal -60°C +60°C	With emergency -40°C +60°C			
Degree of protection:	IP66				

LFED emergency lighting fixture

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body and lid:	Low copper content aluminium alloy
Front glass:	Tempered, resistant to high temperatures and shocks
Gasket:	Silicone resistant to acids, hydrocarbons and high temperatures
Screws, bolts and nuts:	Stainless steel
Fastening brackets:	Electrogalvanized steel
Entry points:	2 entry points ISO 20. Fixture complete with a PLG1IB plug and NAV20SIB cable gland
Coating:	Polyester RAL 7035 (Light grey)
Resistenza alla corrosione:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test).

ELECTRICAL FEATURES

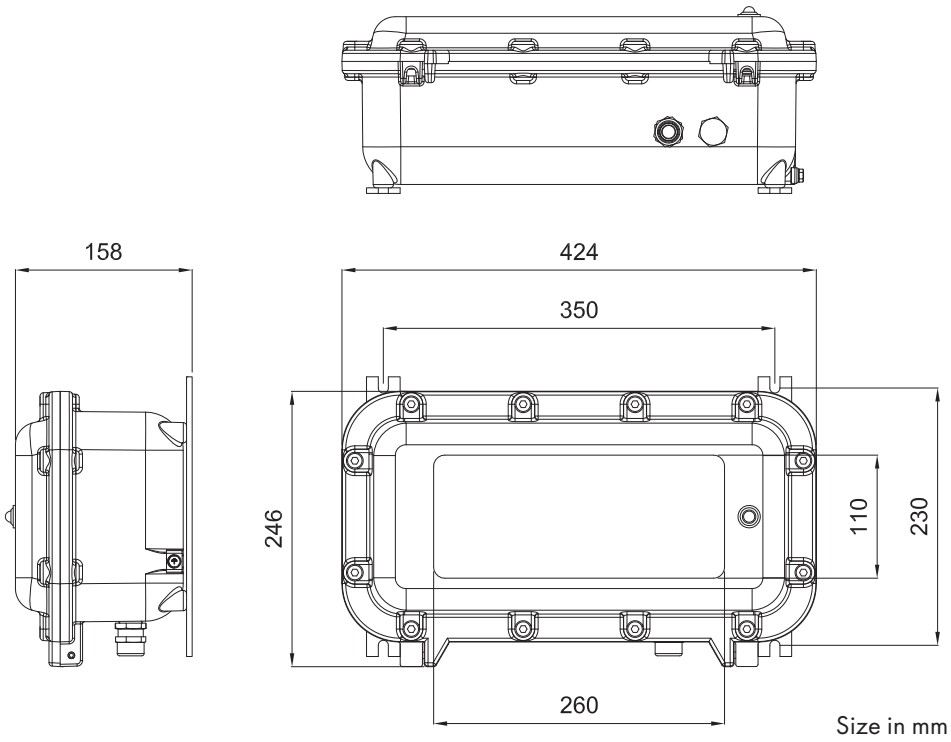
Autonomy in emergency mode:	2 Ah: 3 hours 2.5 Ah: 4 hours 3.1 Ah: 5 hours
Rated voltage:	Normal operation only: 110-277 Vac / 156-277 Vdc Emergency operation only: 110-240 Vac / 110-240 Vdc Normal + emergency operation: 110-240 Vac /156-240 Vdc
Rated frequency:	50/60 Hz
Connection:	Directly to the terminal board L, N, Pe cross sec. 4 mm^2, jumpered terminal board suitable for in-out
Emergency unit:	Electronic inverter 110/240 Vac 50/60 Hz, 110-270 Vdc. Batteries Ni/Cd or Ni/Mh
Cabling:	Silicone rubber cables with braided fibreglass protection for high temperatures
Charge level:	High-brightness LED indicator light, consumption 20 mA, showing the battery charge level for emergency versions.

NOTE: the technical and electrical data may change without prior warning owing to continuous developments in LED technology.

ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Additional cable gland for in-out connection.
Pictogram on request.
External polyester coating in a different colour or internal anti-condensation coating.

DIMENSIONAL DRAWING



Size in mm

CODES

LFED - 112 [ ] [ ] [ ]

1 strip - 12 W

Operation
empty = normal
E = emergency only
N = normal + emergency

Pictogram
empty = EXIT (EXIT)
/S = (exit left)
/D = (exit right)
/G = (exit straight ahead)
/T = (transparent)

Battery capacity
empty = 2.5 Ah
2 = 2 Ah
31 = 3.1 Ah

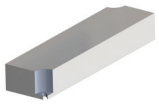
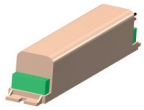
Sample order code

LFED-112N/G31
Normal + emergency version lighting fixture, with exit straight ahead pictogram, with 3.1 Ah batteries.

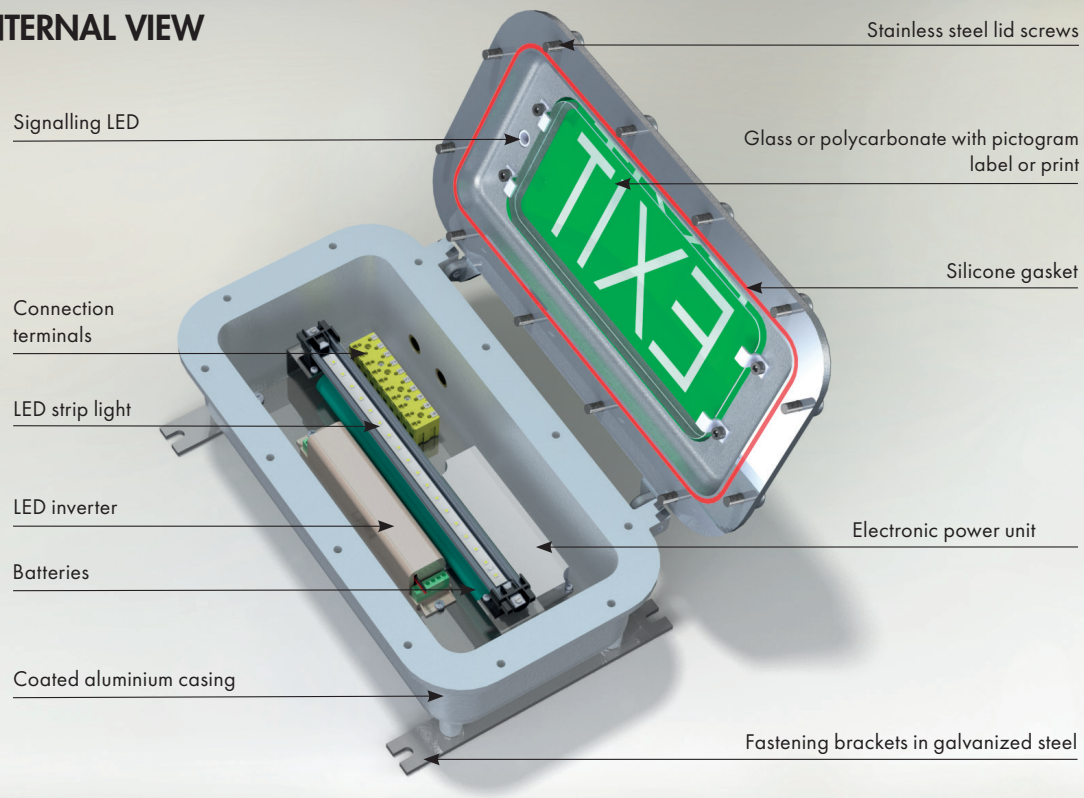
DO NOT FORGET TO ORDER THE ACCESSORIES

Example: Type of fixture LFED- 112N/S31 + Cable gland (additional) NAV20SIB + Other (see legend) ACCESSORY

LFED emergency lighting fixture

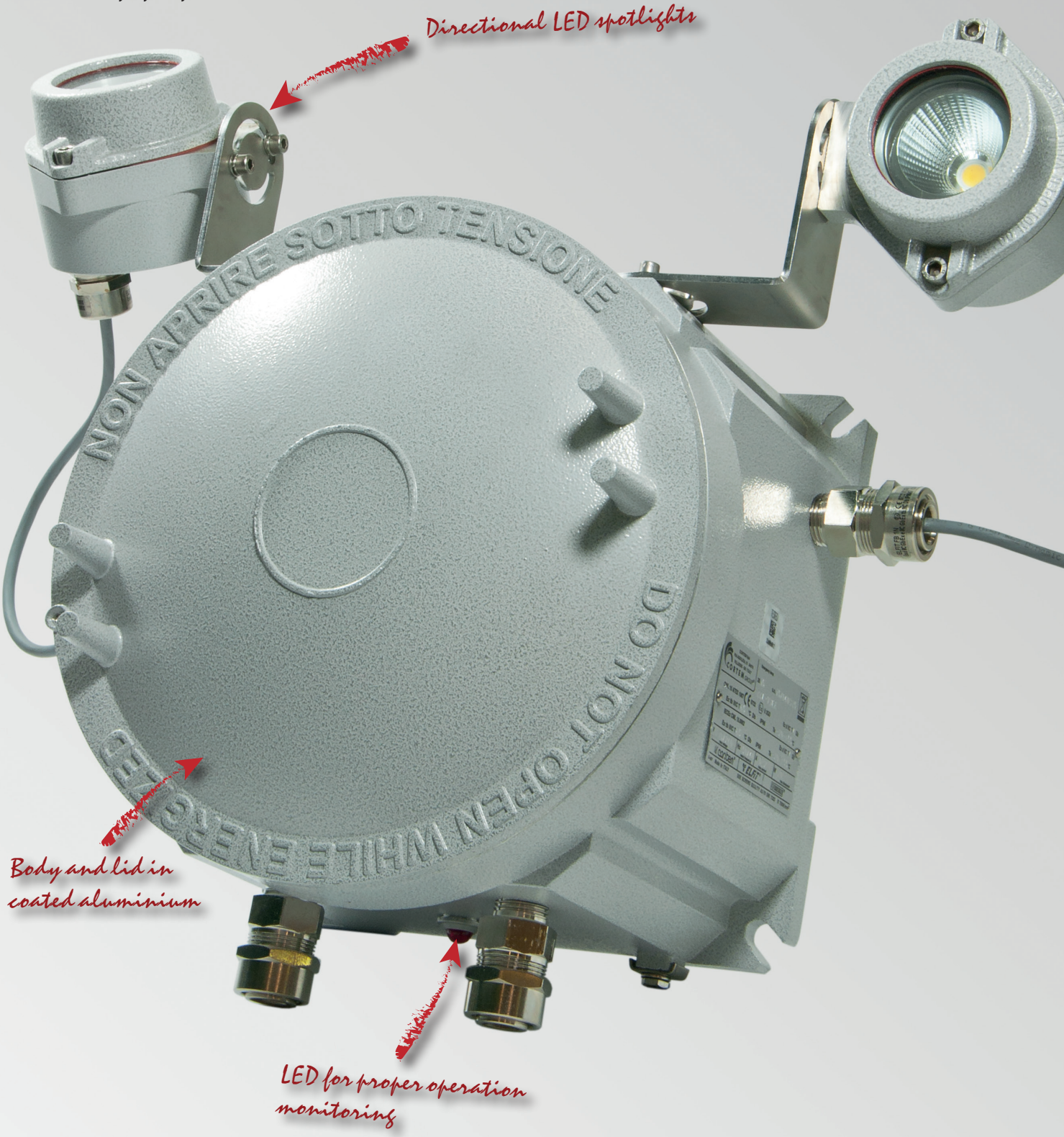
ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	LEGEND
	LED strip light		LED module (not resined)	**LTT8350**	SPARE PART
	Battery		Nickel-cadmium 2 Ah	**BATT2AH/NC/BA**	SPARE PART
			Nickel-cadmium 2.5 Ah	**BATT2.5AH/NC/BA**	
			Nickel-metal hydride 3.1 Ah	**BATT3.1AH/NM/BA**	
	Electronic power unit		110-295 Vac 156-277 Vdc	**LEDDLFED-112**	SPARE PART
	LED inverter		110/240 Vac 50/60 Hz 110/270 Vdc	**INVERTER/LED/1**	SPARE PART
	Single LED		Colour: red	**M-0487/920**	SPARE PART
	Fastening bracket		Material: galvanized steel	**K2-237**	SPARE PART
	O-ring between body and lid		Material: red silicone	**K2-131/1S**	SPARE PART
	Cable gland	ISO M20	std. cable range: 6,3÷11,6	**NAV20SIB**	ACCESSORY SPARE PART

INTERNAL VIEW



CCA-03EX

- Easy installation
- Low energy consumption
- New COB LED technology
- Zone 1, 2, 21, 22



CCA-03EX Lighting fixtures for safety warnings

The LED lighting fixtures for safety warnings CCA-03EX series is designed for installation in areas with risk of explosion where lighting may be stopped due to abnormal, unusual or accidental situations.
The CCA-03EX lighting fixture can be installed in indoor and outdoor environments and it can operate both in normal and emergency service, with a maximum duration of about 2 hours. In case of interruption of the supply voltage, electronics automatically turn on the lighting fixture. The optimal placement of the terminal strip allows a simple wiring, with the possibility of installing more equipment thanks to two threaded hubs studied for the through-wiring. CCA-03EX lighting fixture has a compact size and features two directional LED spotlights. The use of LED COB (Chip on Board) as light source, housed in a junction box with IP66 protection, allows high performance in terms of lumens, low maintanance costs and long life. The presence of reflectors specifically designed for this type of source allows to increase the lighting performance and to direct the light in a well-precise areas thanks to the directionality of the system. Battery replacement after a fault in the emergency circuit or due to battery exhaustion, is indicated by the red LED turning off. In case of emergency, the red LED turns off by activating the LED COB power supply through the battery.

Application sectors:

Oil refineries | Gas Chemical and petrochemical plants | Offshore plants | Fuel tanker loading/ unloading areas | Transit areas | Emergency exits | Stair handrails | Perimeter lighting

CERTIFICATION DATA

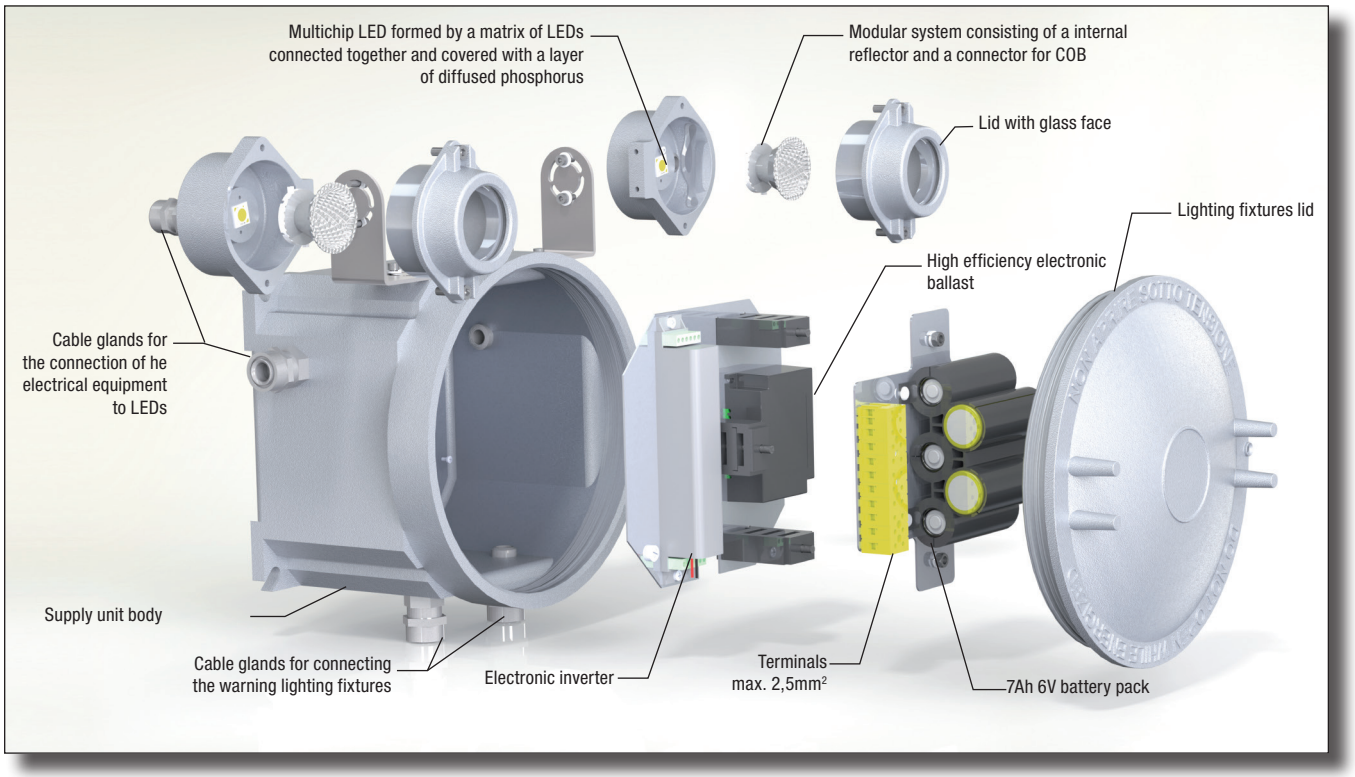
Classification:	Group II	Category 2GD			
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)			
Marking:	CE 0722 Ex II 2GD Ex d IIC T6 Gb - Ex tb IIIC T85°C Db IP66				
Certification:	ATEX CML 15 ATEX 1007				
	IEC Ex IECEx CML 15.0002	All IEC Ex certification data can be downloaded at www.cortemgroup.com			
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-1: 2014-06, IEC 60079-31: 2013 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS				
Class temperature:	85°C (T6)				
Ambient temperature:	Standard -20°C +55°C				
Degree of protection:	IP66				

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body and lid:	Low copper content aluminium alloy
Internal frames:	Stainless steel
External adjustable brackets:	Stainless steel
Glass face:	Shock and temperature resistant tempered glass
Gaskets:	Acid and hydrocarbon resistant silicone
Bolts and screws:	Stainless steel
Assembly:	See "Dimensional drawing CCA-03EX"
Entries:	2 x 1/2" NPT entries. Fixture kit with n.1 PLG1NB plug and n.2 FB1NBK cable gland
Coating:	Polyester coating Ral 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

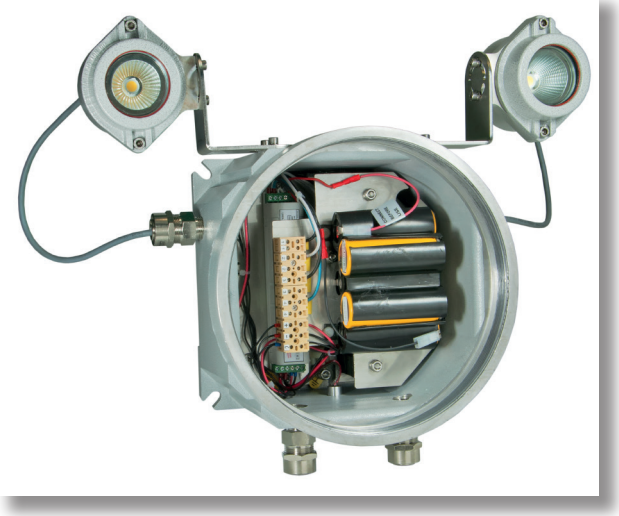
EXPLODED DIAGRAM OF CCA-03EX LIGHTING FIXTURES FOR SAFETY WARNINGS



CCA-03EX Lighting fixtures for safety warnings

Electrical features	CCA-03EX
Power supply:	110-240 Vac ±10%
Rated frequency:	50-60 Hz ±5%
Power consumption:	20 W
Connection:	Direct connection to terminal board L, N, PE. Section 2,5 mm2, suitable for loop-in/loop-out
Power factor:	>0,90
Rated current:	100 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61000-3-2, EN 61000-4-..., EN 61547
THD (total harmonic distortion):	<20% 100-277 Vac
Over-voltage protection:	2 kV
Driver performances:	Over-Voltage protection, Over-Current protection, Short-Circuit protection
Battery:	7 Ah, 6 V. Discharge time 2 hours
Photometric features	
LED Multichip:	Cree CXA
Viewing angle:	30°
Colour temperature:	3500 K
CRI:	80
Instant Restrike:	YES
Lumen:	**595 lm (x2)**
Maximum light intensity:	**1968 cd (x2)**
Overall efficiency:	**59,5 lm/W**

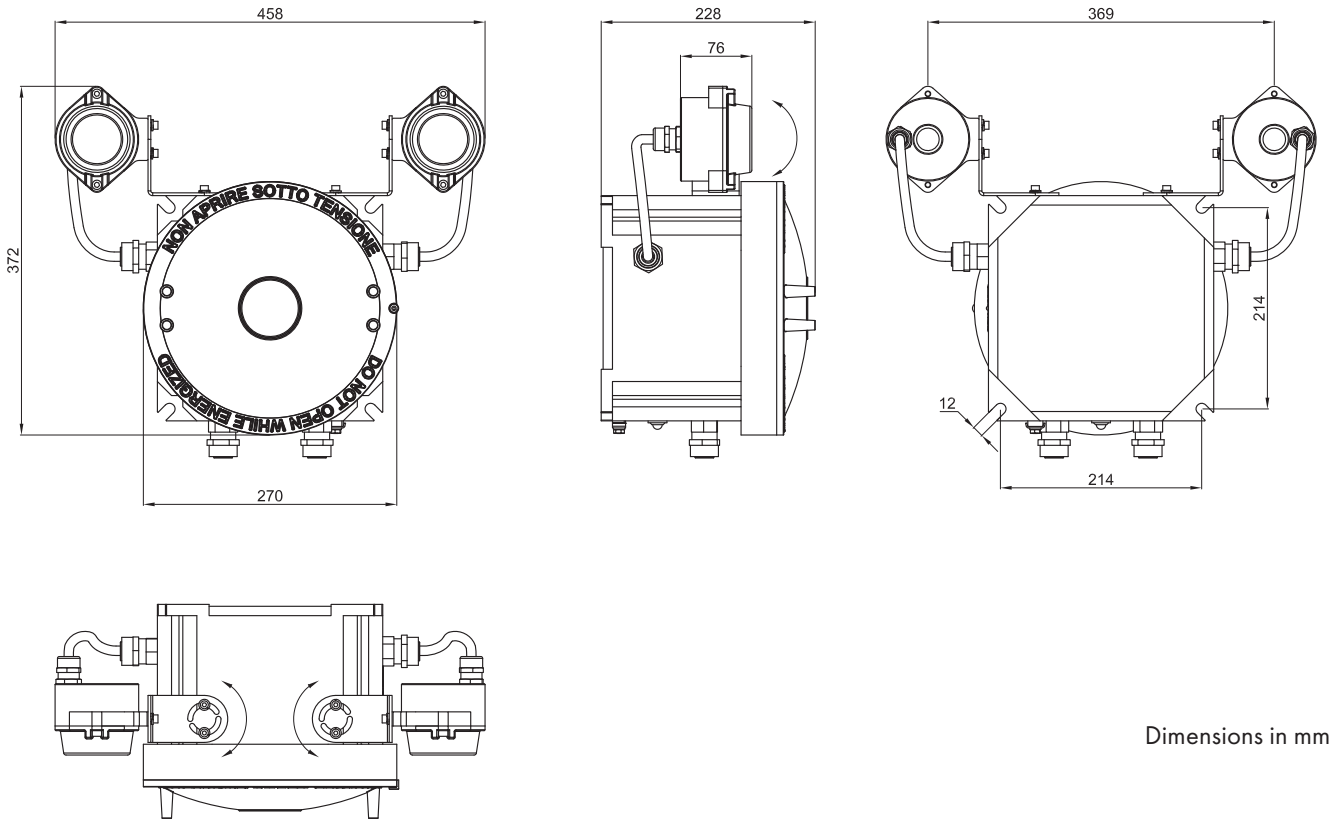
DETAIL OF LED SPOTLIGHTS
LED spotlights adjustable both horizontally and vertically to allow the directionality of light.



INSIDE VIEW
PInternal electrical part completely wired with silicone rubber cables with protective glass braid for high temperatures.

Code	Type Lamp	Watt	Class	Max surface temperature °C	Weight kg	mm
CCA-03EX	LED	20 W	T6	85	14	

DIMENSIONAL DRAWING



Dimensions in mm

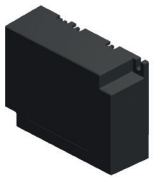
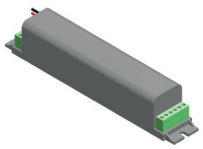
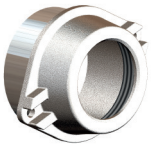
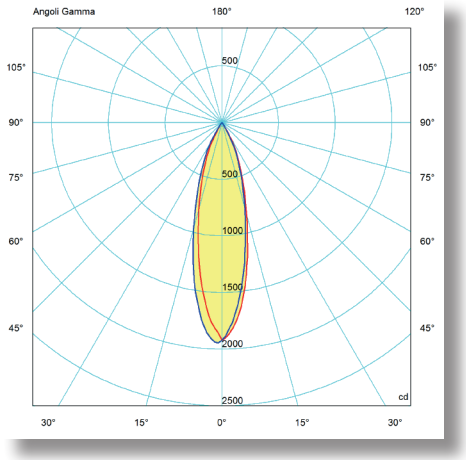
ILLUSTRATION	DESCRIPTION	FEATURES	CODE	KEY
	Driver	110-240 Vac	LEDDCCA-03EX	SPARE PART
	Electronic inverter	90/264 V	INVDCCA-03EX	SPARE PART
	Battery pack	7 Ah 6V NiCd	G-0309	SPARE PART

ILLUSTRATION	DESCRIPTION	FEATURES	CODE	KEY
	Lid with glass face	Material: aluminium lid tempered glass	M-0390	SPARE PART
	Gasket between body and cover	Material: silicone	K27-131S	SPARE PART

Example of lighting design made using CCA-03EX lighting fixtures for safety warnings



CCA-03EX Luminous flux: 600 lm

On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

= plane 90270
= plane 0180

Notes

VSE

- Zone 1, 2, 21, 22
- Warning lighting
- LED technology
- Lamp lifespan more than 10 years

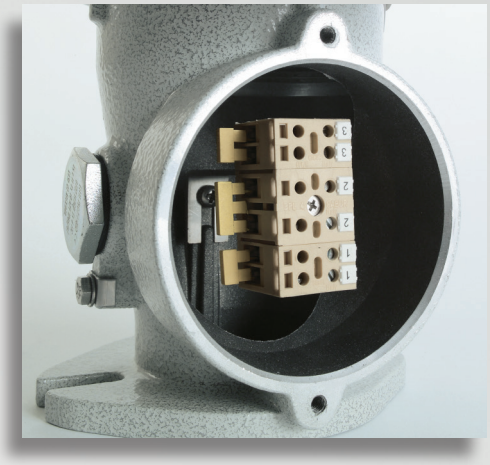
Borosilicate glass globe

Stainless steel bolts

Painted aluminium body

Silicon gasket

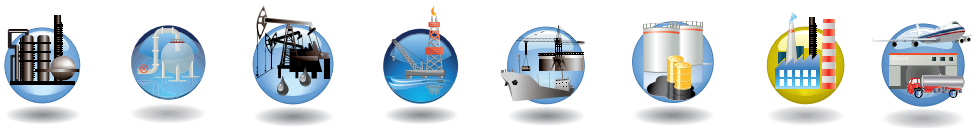
Ex e terminal box for fast connection



VSE LED Warning lighting fixtures

The VSE series warning lighting fixtures with flashing or fixed light are suitable for industrial signalling. The flashing can be adjusted via internal DIP switch with a frequency of 20 to 70 flashes per minute. The VSE lighting fixture, available in different colors, is equipped with LEDs installed on the electronic plate with a single circuit and an internal reflector.

Application sectors:



Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Combustible liquid depots | High buildings | Aircraft storage facilities Hangars

CERTIFICATION DATA

Classification:	Gruppo II	Categoria 2GD		
Installation: EN 60079.14	zona 1 - zona 2 (Gas)	zona 21 - zona 22 (Polveri)		
Marking:	CE 0722 Ex II 2GD Ex db eb op is IIC T6 Gb; Ex tb op is IIIC T75°C Db IP66			
Certification:	ATEX CML 19 ATEX 1333X			
	IECEx IECEx CML 19.0102X			
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-31: 2014, EN 60079-28: 2015, EN 60079-7: 2015 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-1: 2014-06, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
Class temperature:	55°C (T6)	75°C (T6)		
Ambient temperature:	-40°C +40°C (T6)	-40°C +60°C (T5)		
Degree of protection:	IP66			

VSE LED Warning lighting fixtures

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
Glass face:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Internal reflector:	In chromed aluminum
Gaskets:	Silicone acid/hydrocarbon and high temperatures resistant
Mounting:	See "dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	2 ISO M25 entries
Coating:	Epoxy coating Ral 7035 (light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

LEDs: 4 x LEDs fitted to electronic plate with single circuit

- High resistance to vibration (longer lifespan if installed in severe operating conditions)
- Estimated lifespan 100,000 hours (12 hours per day for 20 years)

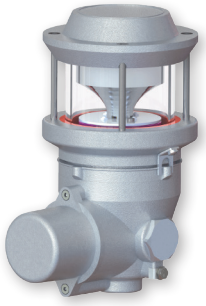
Obstruction lighting fixtures	Rated voltage	Rated frequency
VSE-..230..	100-240 Vac ±10%	50/60 Hz
VSE-..024..	18-32 Vdc ±10%	-

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: NAV25IB for armoured cable or NEV25IB for non-armoured cable

Ex or watertight protected control panel

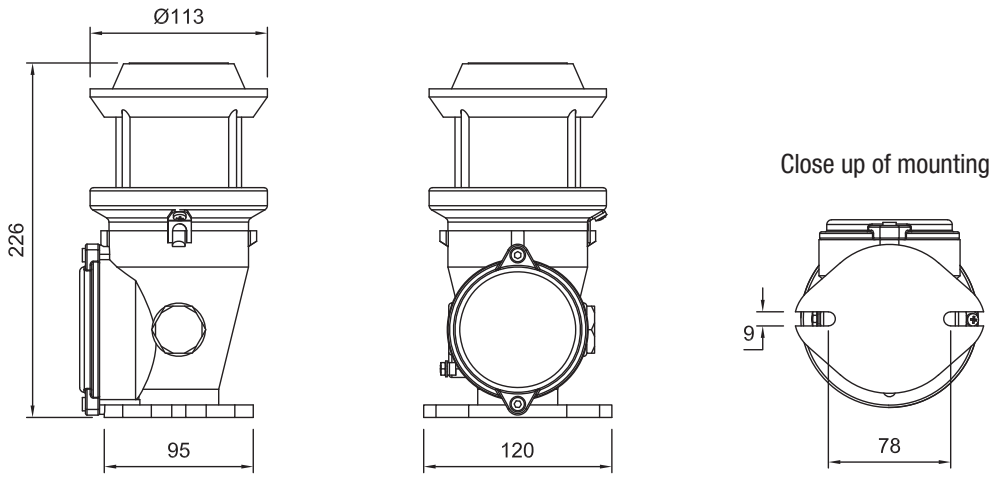
Version with 3 entries ISO M25 complete with 2 plugs PLG2IB (example code VSE-R024L/**S**)



Code	Colour light	Type of light	Type of circuit	Supply voltage	Power	Weight kg	mm
VSE-R230L	Red	Flashing	Single	100-240 Vac	6 W	2 Kg	232x125x125
VSE-Y230L	Yellow	Flashing	Single	100-240 Vac	6 W	2 Kg	232x125x125
VSE-G230L	Green	Flashing	Single	100-240 Vac	6 W	2 Kg	232x125x125
VSE-B230L	Blue	Flashing	Single	100-240 Vac	6 W	2 Kg	232x125x125
VSE-R024L	Red	Flashing	Single	18-32 Vdc	6 W	2 Kg	232x125x125
VSE-Y024L	Yellow	Flashing	Single	18-32 Vdc	6 W	2 Kg	232x125x125
VSE-G024L	Green	Flashing	Single	18-32 Vdc	6 W	2 Kg	232x125x125
VSE-B024L	Blue	Flashing	Single	18-32 Vdc	6 W	2 Kg	232x125x125

NOTE:
Code with F suffix for version with fixed light (e.g. code: **VSE-B024F**)

DIMENSIONAL DRAWING



Features	VSE
Type of product:	Warning lighting fixture Low intensity
Light source:	LED
Light color:	Red, Yellow, Green, Blue
Typical use:	Night hours
Power consumption:	6 W
Connection:	Direct connection to terminal board L, N, Pe. Section 4mm², suitable for loop-in/loop-out
Vertical beam spread:	> 10°
Minimum light intensity (360°):	>32 cd in nighttime
Horizontal coverage:	360°
Flashing adjustment via internal DIP switch, see table on the right (See safety, use and maintenance instructions)	

	FLASHING MODE			
ON	ON	ON	ON	20 FPM
	ON	OFF	ON	30 FPM
	OFF	ON	ON	40 FPM
	OFF	OFF	ON	50 FPM
	OFF	ON	OFF	60 FPM
	OFF	OFF	OFF	70 FPM
OFF	FIXED MODE			

FPM = flash per minute

Product modifications and warranty

Cortem Group reserves the right, at its sole discretion, to make any modifications (at any time and without notice) in order to improve the functionality and performance of its products or meet technical and manufacturing requirements. The measurements and drawings of the products and their parts are indicative only and not binding, because they can be modified without notice.

The latest updated information, data and certificates of our products are available on www.cortemgroup.com web site.

All Cortem Group products are covered by warranty for a period of twelve months from the delivery date. For more information, refer to the “General Terms and Conditions of Sale” on www.cortemgroup.com web site.

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