Lighting and signalling

2026

Explosion-protected electrical equipment

ATEX ⟨Ex⟩ IEC. IECEx EAC Segurança DNV INMETRO

CORTEM®
GROUP

50 YEARS

To be sure to be safe.
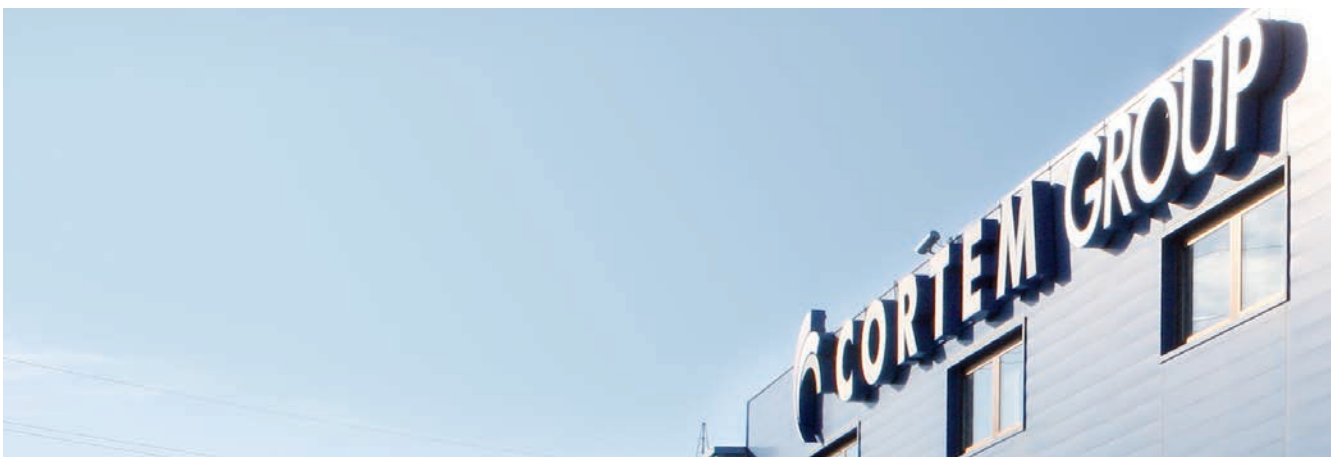
The value of experience

The peculiarity of the Cortem Technology Group is the experience gained in more than 40 years of activity in the Ex field which results not only in the supply of simple Ex-products, but also in engineered and customized solutions.

It was established in 1968 with the acronym "Cor.tem" Costruzioni, Rappresentanze tecniche elettromeccaniche and immediately it specialized in the production of electrical equipment for areas with danger of explosion and fire.

During the '70s Italy and ENI agree to increase their specialization in the processing of crude oil into finished products.

In the same years, Elfit company was founded in order to carry out some strategic processes internal to he company and to provide the market with complementary lighting products, such as connectors, cable glands, junction boxes.

Since the '90s, thanks to the acquisition of Fondisonzo, company, a competitor in the same market segment, Cortem became soon the technological point of reference for Italian explosion-protected equipment.

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To Be Sure To Be Safe

Design, Production and Installation

In addition to the on-going research in order to develop innovative products and the process of complying the products with international standards, great attention is addressed to the engineered and customized solutions. We design and manufacture all products internally, with different security methods such as 'Ex d', 'Ex e' increased safety and 'Ex de' mixed, 'Ex n' no sparkling, using alloys and plastics of primary quality.

Considering our customers' needs, our R&D department studies the best solution valuating normative and market price issues, plant and security aspects.

Cortem production range can be summarized as follows:

1. Lighting fixtures for LED technology, fluorescent lamps, halogen lamps, sodium vapor, high pressure mercury vapor, metal halide, mixed light. Obstruction lighting fixtures, rechargeable hand-held lamps for tank inspection. Zone 1, 2, 21, 22.

2. Junction and pulling boxes, enclosures for power and control panels, grounding security systems for tankers. Zone 1, 2, 21, 22.

3. Control station, command and control operators, signals, electrical circuits and/or motive power switches, limit switches available in ten different models depending on the type of actuator used Zone 1, 2, 21, 22.

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4. Plugs and Sockets up to 125A with disconnecting interlock switch. Zone 1, 2, 21, 22.

5. Ex-protected cable glands, fittings, flexible tubes for the realization of complete electrical systems.

6. Ex-protected switchgear and panel board according to customers' specification.

All our products are manufactured using only aluminum alloys with low copper content which assure a better and more secure mechanical strength and a longer life cycle. For the production of 'Ex e' enclosures are also used polyester resins and AISI 316 L stainless steel.

90% of our production are placed 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.

Applications include the use of electricity to control a plant with, for example, electrical distribution panel boards, or to light entire areas of production processes.

We invest every year some of our resources to develop innovative products that meet the market needs in terms of cost savings, security and reliability.

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Internal organization and territorial presence

We have specific internal departments to support technically tenders for the supply of projects worldwide.

The Area Managers and Project Managers look after the various stages of a supply such as the initial documentation for approval by customer, the monthly reports on the order progress, the testing and the readying of the final Vendor data book.

With more than 30 agencies, 90 distributors, 7 partners and 3 production centers displaced, Cortem provides a local and qualified presence around the world.

For Cortem "displacing" does not means 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 basics of our corporate mission.

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Quality, safety for people and environment

The recognized quality of our products and of our automated control manufacturing systems is one of the principles guiding Cortem Group activities in order to ensure people safety on plants and environment protection.

There's an internal control system of all the productivecycle.

The Quality System conforms to the requirements of UNI EN ISO 9001:2008.

Plant facilities and production procedures meet also the international standard UNI EN ISO 14001:2004 for the Environmental Management System.

All our Ex-protected products are certified in accordance with the European standard ATEX and International regulation IEC Ex. Furthermore, it's ongoing their regulatory compliance to GOST TR CU standards for the Customs Union GOST TR CU.

Respecting these strict international construction rules, guarantees the safety of people and environment.

"No Fake" Project

During 2012, Cortem has started the project "No Fake". The guarantee of origin against the falsification of products provides the application of an adhesive sticker with a security hologram of a diameter of 2 cm.

The text "TESTED" and the alphanumeric code guarantee the authenticity of the product. Customers can verify the correctness of the alphanumeric code directly on Cortem web site www.cortemgroup.com.

Corporate Identity

We encourage and help the people enterprise within the value of meritocracy assessing the individual capacity.

We are constantly focused on carrying out an excellent product which meets market requirements allowing the Company to grow up.

The Pay Off "to be sure to be safe" represents our pride and passion for what we design and manufacture.

Alessandro Rossi , President

A guide to lighting and signalling catalogue

This catalog, dedicated to lighting and signalling, is organized in order to facilitate the search of products and all the related technical and commercial information.

It's divided into two chapters: one chapter dedicated to lighting and one chapter focused on signalling. The catalog shows a colored thumb index which group together products by the type of protection 'Ex d', 'Ex de', 'Ex e', 'Ex i' and 'Ex n'.

On the first page of each product, you will find the series, an image of the product and some structural and functional features.

On the next page, a more detailed description summarizes the main features and a sequence of icons help you to visualize the main application sectors.

A very important part lists the certification data: classification, zones of installation, marking, certificates available, compliance with standards, temperature and degree of protection.

In the next pages you can read: the mechanical and electrical properties, the selection table with the list of available models, the dimensional drawings, a table dedicated to accessories available upon request and spare parts and, finally, the photometric diagram.

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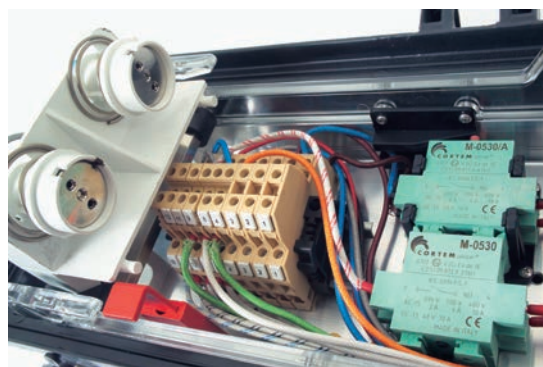
How to order

To order a product without getting lost among the many codes which identify a lighting fixture and all its accessories, in every section you'll find a red box. When ordering you must always indicate:

• the type of lighting fixture, for example:

FLFE-236

Series ⟵ ⟶ Size

• codes of accessories upon request with which you want complete the product: the bulb, the cable gland, the type of reflector, the protection guard etc. ... that you will find in the " Accessories and spare parts available on request" section.
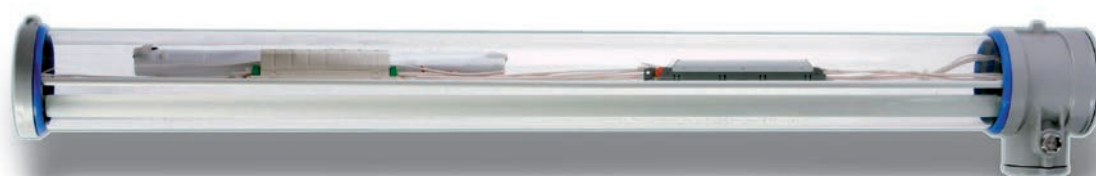
DON'T FORGET TO ORDER THE ACCESSORIES

| Exemple: Type of lighting fixture FLFE-236 | + | Fluorescent tubes LAMPL36W21 | + | Installation bracket G-258 | + | Guard with external protection G36-0529 | + other... |

Ø10
100
45°
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Accessories, spare parts and maintanance operation

In the section "Accessories and spare parts available on request" are summarized the accessories available in order to complete the product and the spare parts for maintenance operations.

The icons in the "Key" indicate whether the item is an accessory, a spare part or both.

Please note that the maintenance operations of explosion-protected products must be carried out using only original parts of the manufacturer.

In case of use of non-original spare parts, the product certificate is no longer valid and it's possible that the ex-protection is no longer guaranteed.

One of the most important causes of risk of explosion, could be the wrong maintenance operations of ex-protected equipment.

The safety of equipment is granted over time by continuous application of maintenance plans, involving a series of activities that we list here below, and, most of all, by efficient personnel training:

• Familiarizing with the standards regulating the identification and classification of hazardous areas.

• Familiarizing with the standards regulating the protection methods of electrical equipment installed in the plant.

• Familiarizing with the applied protection methods.

• Familiarizing with the particular project stages as far as protection methods concerns.

• Recognizing the protection methods by marking labels.

• Identifying the components and spare parts used by the manufacturer.

• Familiarizing with the electrical and mechanical maintenance methods.

• Familiarizing with the tests prescribed for repaired electrical equipment.
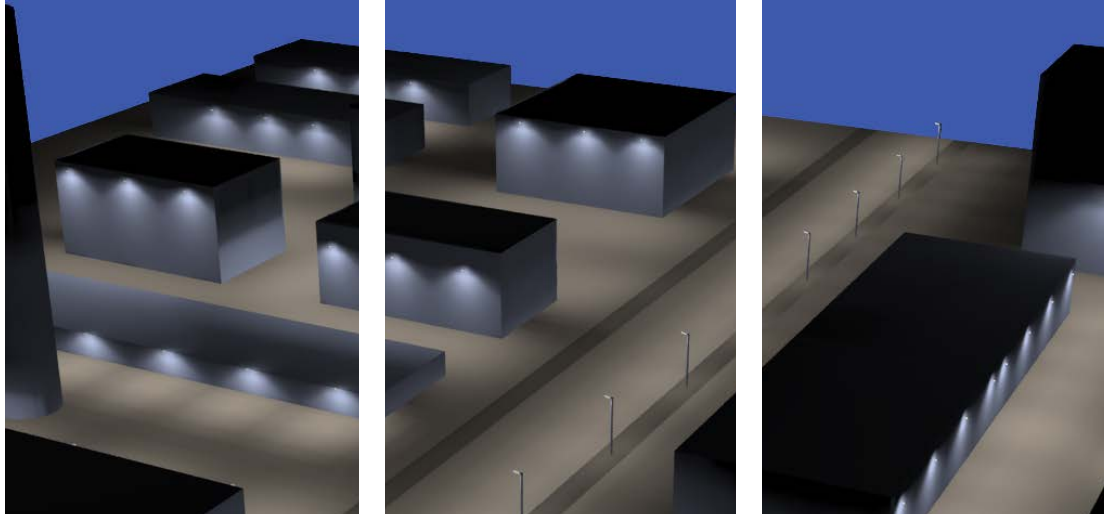
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Photometric files for lighting projects

Cortem Group provides, upon request, photometric files of its lighting equipment for lighting designs.

These files can be used with LITESTAR lighting design software for internal and external able to make simple and effective the job of lighting designers.

Entering the photometric files of the selected models along with architectural data, you obtain graphs, curves, installation diagrams and a virtual image with the real lighting effect.

The software, available in several languages , can be free downloaded from www.oxytech.it with the manual of use.

For more information, contact Cortem Sales Offices.

A little more...

For more information about the Ex-protected world and on the basis of lighting engineering please download from www.cortemgroup.com web site, Product section, Catalogs the following reference materials:

• Guide to the EX world - How to use the electrical equipment in areas with risk of explosion

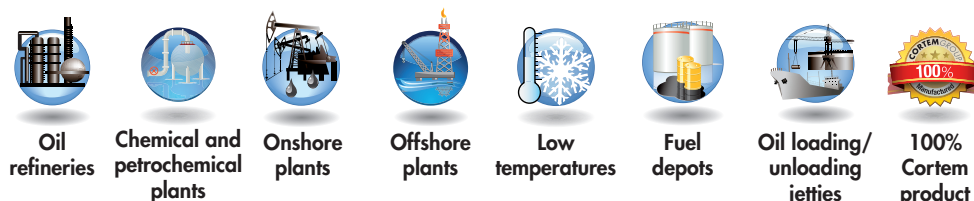• Basis of lighting engineering.
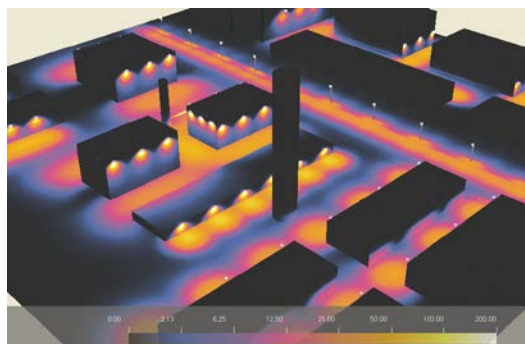
EV

- Optimal performance at high (+60°C) and low temperatures (-50°C)
- Easy to install, low maintenance costs
- Zone 1, 2, 21, 22

Silicon gasket

4 Joule shock resistant borosilicate glass globe

Stainless steel reflector fixing screw

Stainless steel protective guard

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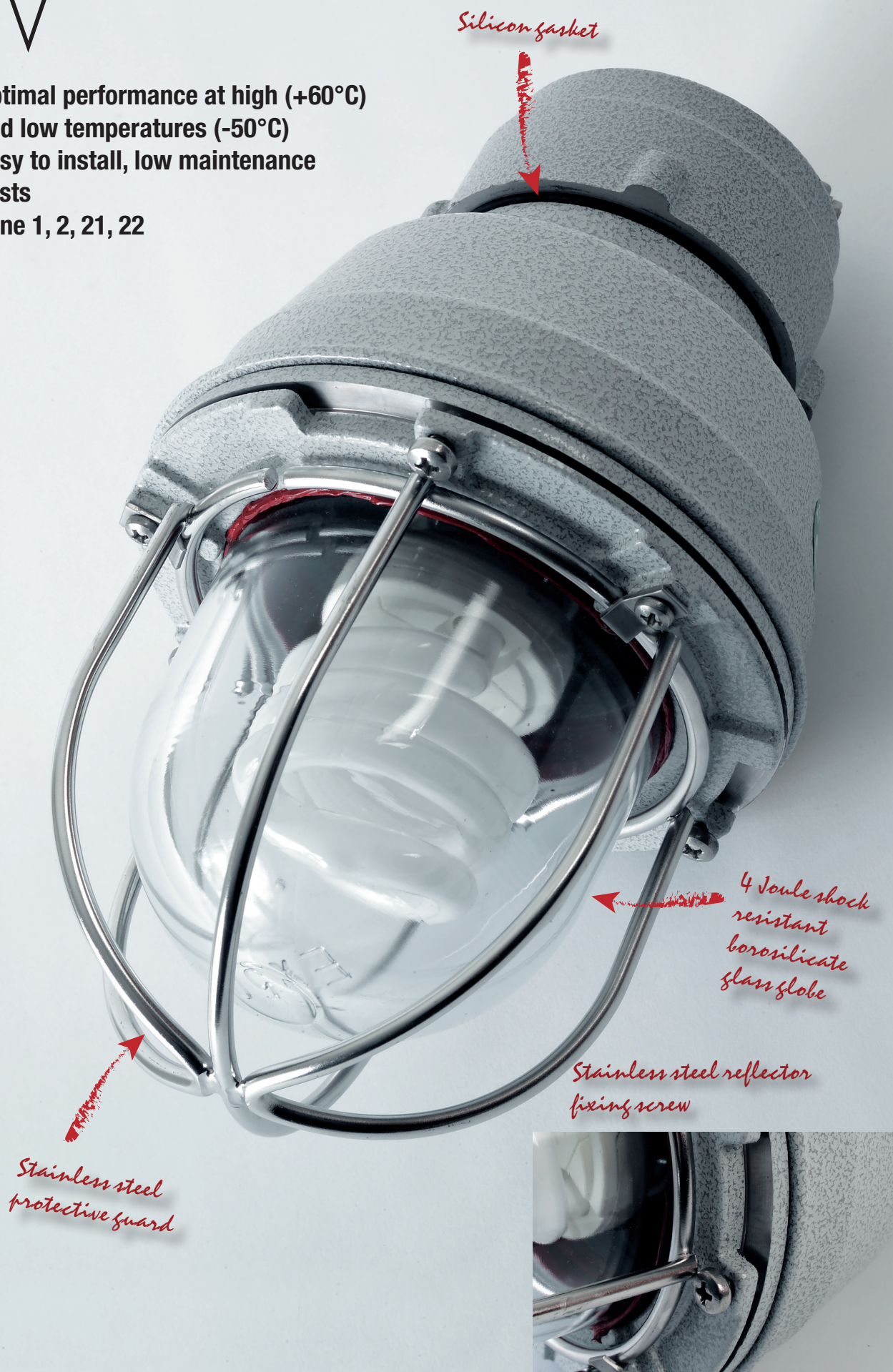
EV series Lighting fixtures for traditional and LED lamps

EV series lighting fixtures have been specially designed for use in the petrochemical and oil refining industries as they combine beauty and functionality along with high performance and simplicity in complete compliance with the technological requirements of the "Ex sector". The low copper content aluminium alloy, shockproof borosilicate glass and electro-polished stainless steel components make these lighting fixtures ideal for use in environments with corrosive atmospheric agents, salts and industrial pollution. Mechanical characteristics such as ceramic lamp holders with high heat resistance and insulating properties and acid-proof neoprene gaskets guarantee a long working life with little maintenance. Scheduled maintenance work involves simply cleaning the glass that, thanks to its IP66 protection, can be safely cleaned with a wet cloth. As specified in the appropriate installation standard (EN/IEC 60079-14), the entry to the fixture must be only through an Ex "barrier" cable gland (sealed) or, in the case of a conduit system, with an EYS, EZS sealing fittings.

Application sectors

Oil refineries	Chemical and petrochemical plants	Onshore plants	Offshore plants	Low temperatures	Fuel depots	Oil loading/ unloading jetties	100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		

Installation:	Zone 1 - Zone 2 (Gas)	Zone 21 - Zone 22 (Dust)		

Marking: (€ 0722 ⟨Ex⟩ II 2GD Ex d IIC T.. Gb - Ex tb IIIC T..°C Db IP66

Certification:	ATEX CESI 12 ATEX 006			

IEC Ex   CES 07.0004

TR CU   AVAILABLE

All IEC Ex and TR CU certification data can be downloaded at www.cortemgroup.com

Standards:

CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2009 and EUROPEAN DIRECTIVE 2014/34/UE
IEC 60079-0: 2011, IEC 60079-1: 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:	See the selection table		

Ambient temperature: ❄ -20°C +60°C ☀

Degree of protection: IP66

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EV series Lighting fixtures for traditional and LED lamps

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
Entries:	3/4" NPT threads
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

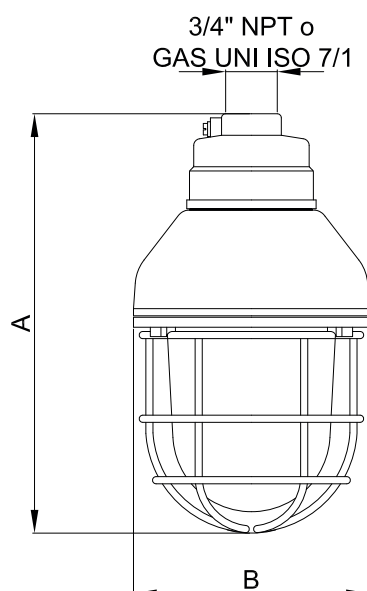|	
Lamp holder:	E27 or E40 ceramic
Rated voltage:	230 V AC
Rated frequency:	50/60 Hz
Connection:	Direct connection to lamp holder L, N. Section 4mm^2

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

LED lamps
External reflector
Cable gland: NAV2NB for armoured cable or NAVB2NB for non-armoured cable
Warning signs: G-0513
GAS UNI ISO 7/1 thread
Different rated voltages

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EVA series selection chart Pendant mounting

Code	Dimensions mm		Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max surface temperature °C	Weight kg	mm
	A	B							
EVA-5050	261	150	AL	E 27	70	T4	123	2,0	160x150x330
EVA-5050	261	150	AL	E 27	105	T3	154	2,0	160x150x330
EVA-5050	261	150	AL	E 27	140	T3	154	2,0	160x150x330
EVA-5050	261	150	ELS	E 27	15	T6	84	2,0	160x150x330
EVA-5050	261	150	LED	E 27	8	T6	74	2,0	160x150x330
EVA-5060	323	170	EL	E 27	23	T5	86	2,7	190x170x390
EVA-5060	323	170	ELS	E 27	23	T5	86	2,7	190x170x390
EVA-5060	323	170	LED	E 27	12	T6	74	2,7	190x170x390

EVA Pendant mounting

3/4" NPT o
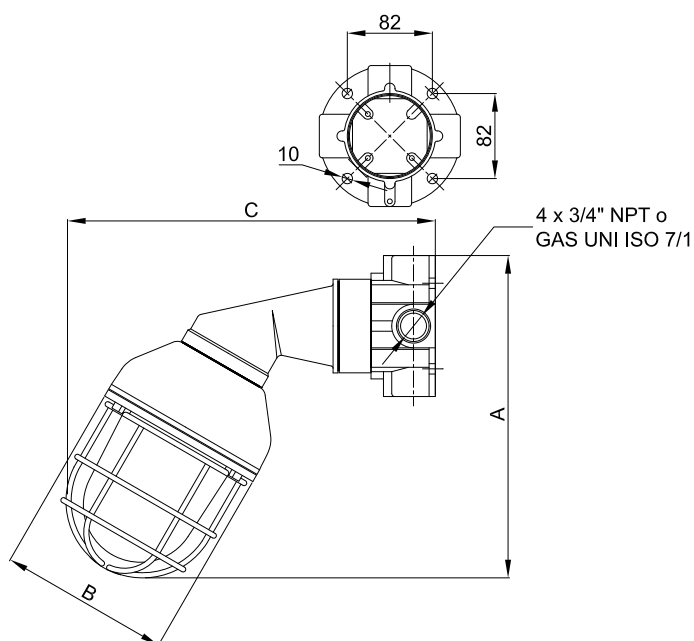GAS UNI ISO 7/1

A

B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
ELS = Spiral tubes (FB)
LED = With LED (DB)

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EVGC series selection chart Pendant mounting with eyebolt

| Code | Dimension mm | | Lamp type | Lamp holder | Watt | Class Ta=+60°C | Max surface temperature °C | Weight kg | mm |
	A	B							
EVGC-5050	296	150	AL	E 27	70	T4	123	2,1	160x150x330
EVGC-5050	296	150	AL	E 27	105	T3	154	2,1	160x150x330
EVGC-5050	296	150	AL	E 27	140	T3	154	2,1	160x150x330
EVGC-5050	296	150	ELS	E 27	15	T6	84	2,1	160x150x330
EVGC-5050	296	150	LED	E 27	8	T6	74	2,1	160x150x330
EVGC-5060	358	170	EL	E 27	23	T5	86	2,8	190x170x390
EVGC-5060	358	170	ELS	E 27	23	T5	86	2,8	190x170x390
EVGC-5060	358	170	LED	E 27	12	T6	74	2,8	190x170x390

EVGC Pendant mounting with eyebolt
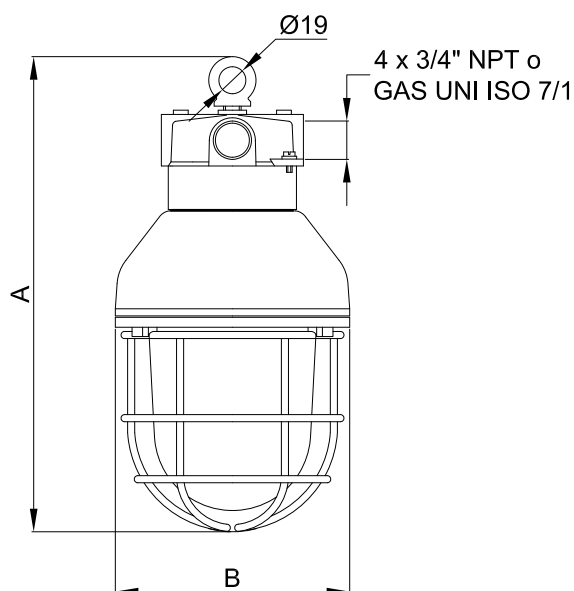
Ø19

4 x 3/4" NPT o
GAS UNI ISO 7/1

A

B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
ELS = Spiral tubes (FB)
LED = With LED (DB)

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EVIX series selection chart Wall mounting

Coce	Dimensioi mm			Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max surface temperature °C	Weight kg	mm
	A	B	C							
EVIX-5050	285	150	310	AL	E 27	70	T4	123	2,9	190x170x390
EVIX-5050	285	150	310	AL	E 27	105	T3	154	2,9	190x170x390
EVIX-5050	285	150	310	AL	E 27	140	T3	154	2,9	190x170x390
EVIX-5050	285	150	310	ELS	E 27	15	T6	84	2,9	190x170x390
EVIX-5050	285	150	310	LED	E 27	8	T6	74	2,9	190x170x390
EVIX-5060	339	170	344	EL	E 27	23	T5	86	3,7	260x210x490
EVIX-5060	339	170	344	ELS	E 27	23	T5	86	3,7	260x210x490
EVIX-5060	339	170	344	LED	E 27	12	T6	74	3,7	260x210x490

EVIX Wall mounting with 30° bracket

82
82
10
C
4 x 3/4" NPT o GAS UNI ISO 7/1
A
B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
ELS = Spiral tubes (FB)
LED = With LED (DB)

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EVX series selection chart Ceiling mounting

Code	Dimension mm		Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max surface temperature °C	Weight kg	mm
	A	B							
EVX-5050	260	150	AL	E 27	70	T4	123	2,4	160x150x330
EVX-5050	260	150	AL	E 27	105	T3	154	2,4	160x150x330
EVX-5050	260	150	AL	E 27	140	T3	154	2,4	160x150x330
EVX-5050	260	150	ELS	E 27	15	T6	84	2,4	160x150x330
EVX-5050	260	150	LED	E 27	8	T6	74	2,4	160x150x330
EVX-5060	322	170	EL	E 27	23	T5	86	3,2	190x170x390
EVX-5060	322	170	ELS	E 27	23	T5	86	3,2	190x170x390
EVX-5060	322	170	LED	E 27	12	T6	74	3,2	190x170x390

EVX Ceiling mounting
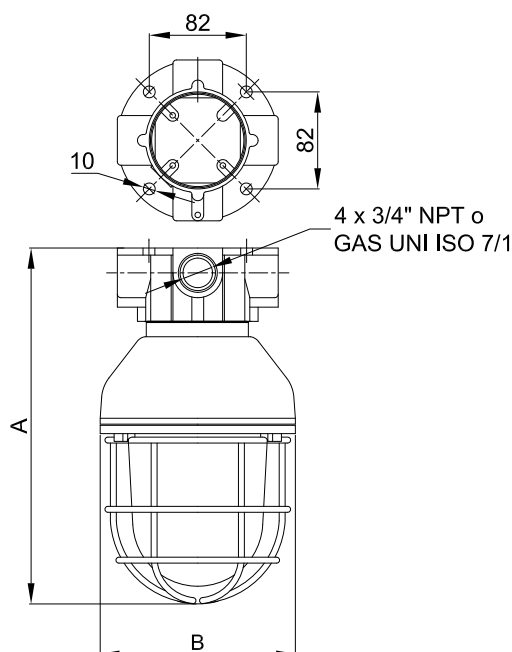
82

82

10

4 x 3/4" NPT o
GAS UNI ISO 7/1

A

B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
ELS = Spiral tubes (FB)
LED = With LED (DB)

DON'T FORGET TO ORDER THE ACCESSORIES					
e.g. Type of lighting fixture EVX-5060	+	Lamp LAMPLED12W	+	Dome reflector G60-427D	+ other... see key ACCESSORY
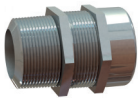
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ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	LED lamp	E27	8 W (DB8W)	**LAMPLED8W**	
		E27	12 W (DB12W)	**LAMPLED12W**	
	Warning signs on request on the frame	50	Materials: Translucent film on plexiglass and aluminium frame	**G-0513**	
		60		**G-0513/1**	
	Emergency Exit			**U-420/P**	
	Emergency Exit on the right	G-0513 G-0513/1	Materials: Translucent film	**U-420/P1**	
	Emergency Exit on the left			**U-420/P2**	
	Emergency Exit upward			**U-420/P3**	
	Emergency Exit downward			**U-420/P4**	

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Cable gland		For models and codes, visit www.cortemgroup.com	NAV2NB NAVB2NB	
	Reflector	50	White painted aluminium Stainless steel	G50-427 G50-427IN	
		60	White painted aluminium Stainless steel	G60-427 G60-427IN	
	Dome reflector	50	Contact our Sales Office for availability		
		60	White painted aluminium	G60-427D	
	30° inclined dome reflector	50	Contact our Sales Office for availability		
		60	White painted aluminium	G60-427DI	
	Ceramic lamp holder	E27	250V 4A	PORT E-27	
		E40	750V 16A	PORT E-40	
	Protective guard	50	Material: Electro-polished stainless steel	G50-0417	
		60		G60-0417	

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ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	O-ring	Globo 50	Material: silicone	OR-4512SH70S	
		Globo 60		K15-131S	
	Globe with shade ring	50	Borosilicate glass globe Threaded aluminium shade ring	G50-0440CM	
		60		G60-0440CM	
	Pendant eyebolt		Material: Galvanised steel	GOF-8	
	Pendant mounting EVA	50	1 x 3/4" Entry	G-0213	
		60			
	Pendant mounting with eyebolt EVGC	50	4 x 3/4" Entries	G-0216	
		60			
	Ceiling mounting EVX	50	4 x 3/4" Entries	G-0214	
		60			
	Wall mounting with bracket EVIX	50	4 x 3/4" Entries	G-0215	
		60			

Installation and mounting methods

Example of pole mounting

FBF-2

Example of ceiling mounting

ELF2

NP2

EYS2

RMM-2

Terminal box
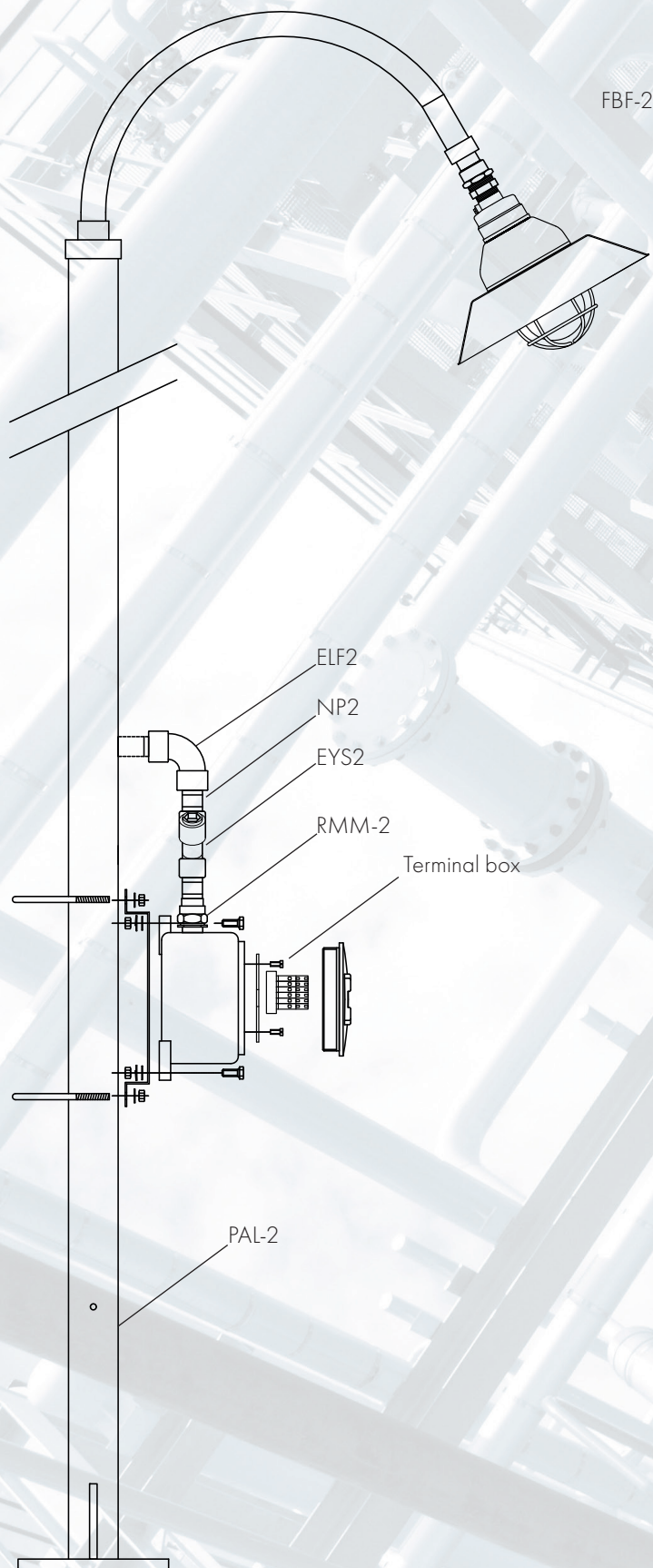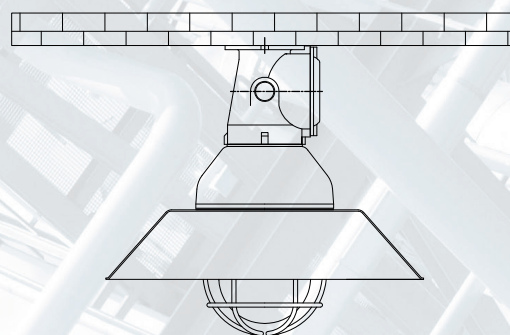
Example of wall mounting
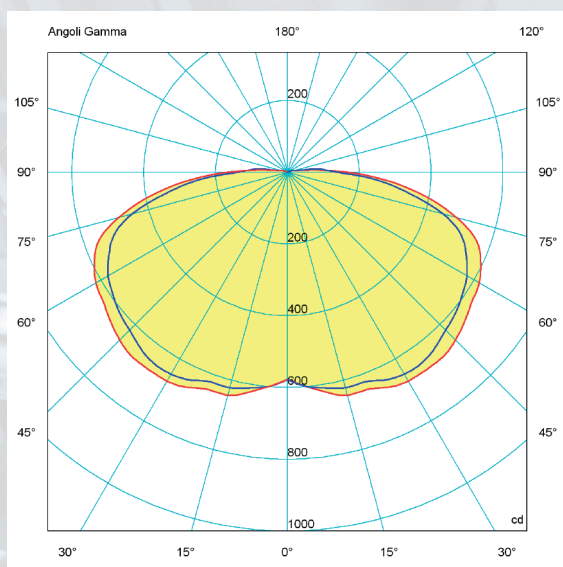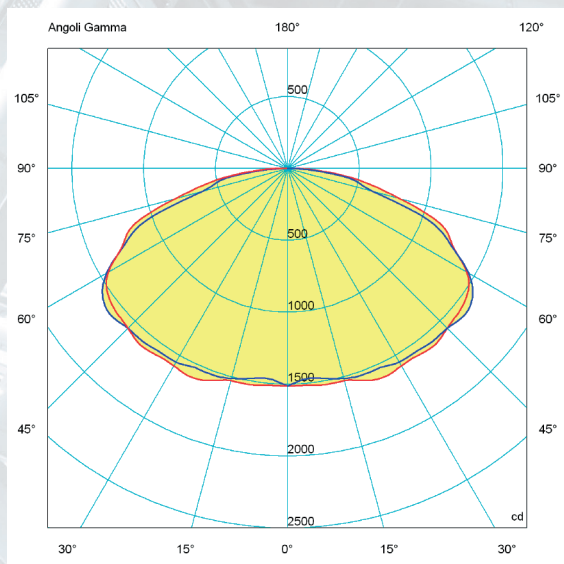
PAL-2
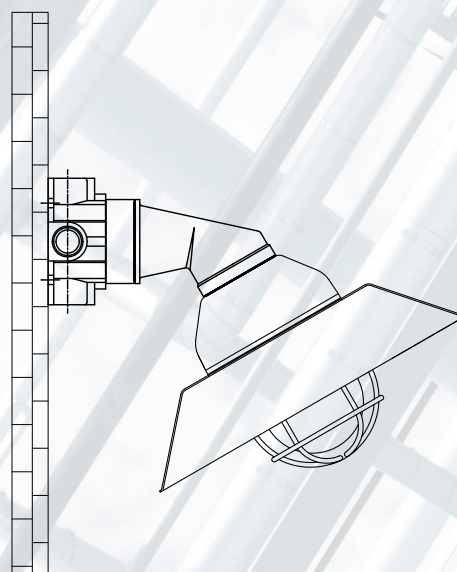
CORTEM GROUP®

Photometric diagram
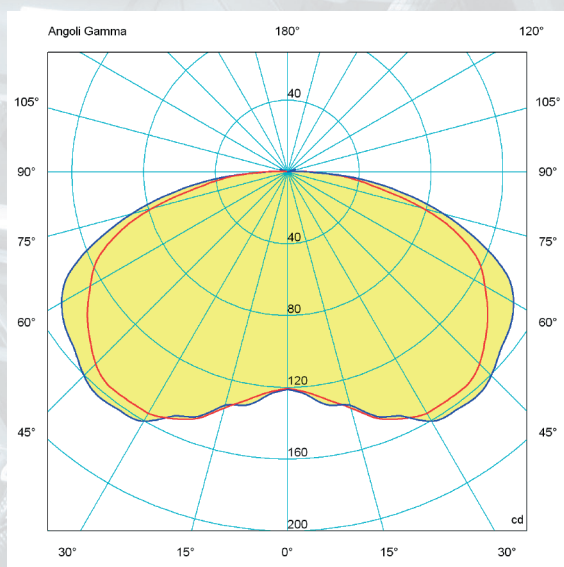
EVE..5060 23W EL

EVE..5060 23W EL

EVE..5060 23W EL

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

FHL

- Zones 1, 2, 21, 22
- Integrated electronic ballast
- Power supply 24 V DC
- Compact 24/36 W fluorescent tube
- Degree of protection IP66

Body in aluminium

Polycarbonate tube

Guard in stainless steel

Suitable for 4-pin fluorescent tubes

Stainless steel hook

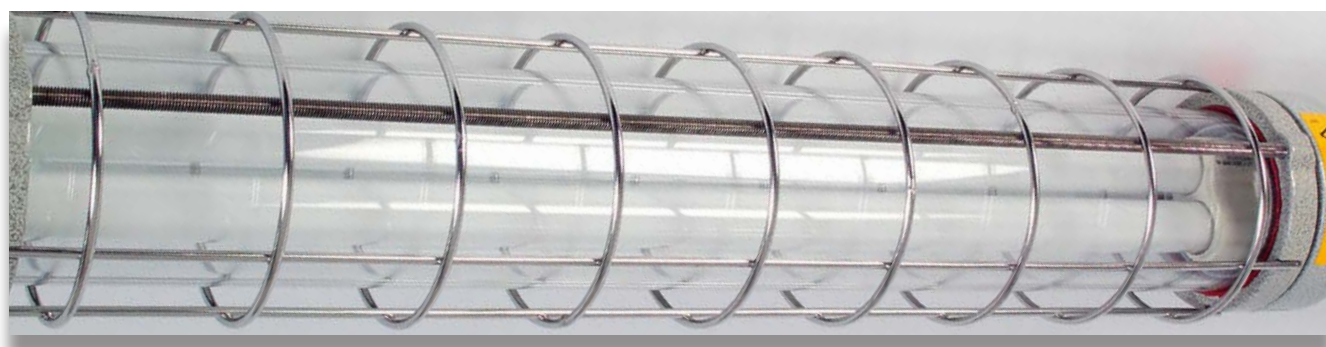CORTEM GROUP®

FHL series Portable inspection lamp

FHL series portable inspection lamps for compact 24/36 Watt fluorescent tubes have been specifically designed for carrying out inspection and maintenance work in all areas that are potentially explosive due to the presence of gases and dusts such as in the petrochemical industry, off-shore installations, tank control and processing areas. Thanks to their robust construction, they are easily handled and have a high degree of protection and optimal performance. They are also used in the naval sector for inspecting engine rooms and in the farming industry for checking the inside of silos. In general, these lamps are ideal for any application calling for a reliable source of light. Thanks also to the accessories which these lamps are fitted, they can be used in a wide variety of ways furthermore, thanks to the energy saving Philips master PL fluorescent tubes, the FHL series also provides an excellent colour rendering index in any position and operating temperature.

Application sectors:

| Oil refineries | Chemical and petrochemical plants | Naval installations | Farm produce applications | Offshore plants | Pharmaceutical industry | Tank and silo inspections | 100% Cortem product |

CERTIFICATION DATA

Classification::	Group II	Category 2GD		
Installation:	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	$C\epsilon$ 0722 ⟨Ex⟩ II 2GD Ex e mb IIC T.. Gb - Ex tb IIIC T..°C Db IP66			
Certification:	ATEX CESI 09 ATEX 041X			
Standards:	CENELEC EN60079-0:2009, EN60079-1:2007, EN60079-31:2009, EN60598-1:2008+A1:2009, EN60598-2-8:2012, EN61547:2009 and EUROPEAN DIRECTIVE 2014/34/UE European Directive 2004/108 Electromagnetic compatibility European Directive 2003/108 WEEE Waste electrical and electronic equipment European Directive 2011/64 RoHS			
Class temperature:	85°C (T6)			
Ambient temperature:	-40°C +50°C			
Degree of protection:	IP66			

FHL series Portable inspection lamp

MECHANICAL FEATURES

Handle and heads:	Low copper content aluminium alloy
External tube:	Polycarbonate with excellent transparency and brilliance characteristics (in the visible light field with wavelengths of between 400 and 700µm, the uniform transmission is of about 89%). Exceptional shock and UV resistance, flame retardant.
Seal:	Silicone resin between the aluminium heads and the polycarbonate tube
Guard:	Electro-polished 316L stainless steel.
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Bolts and screws:	Stainless steel
Hook:	Stainless steel
Entries:	1 x 1/2" NPT entry. Lighting fixture complete with NAV1NB cable gland for non-armoured cable
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

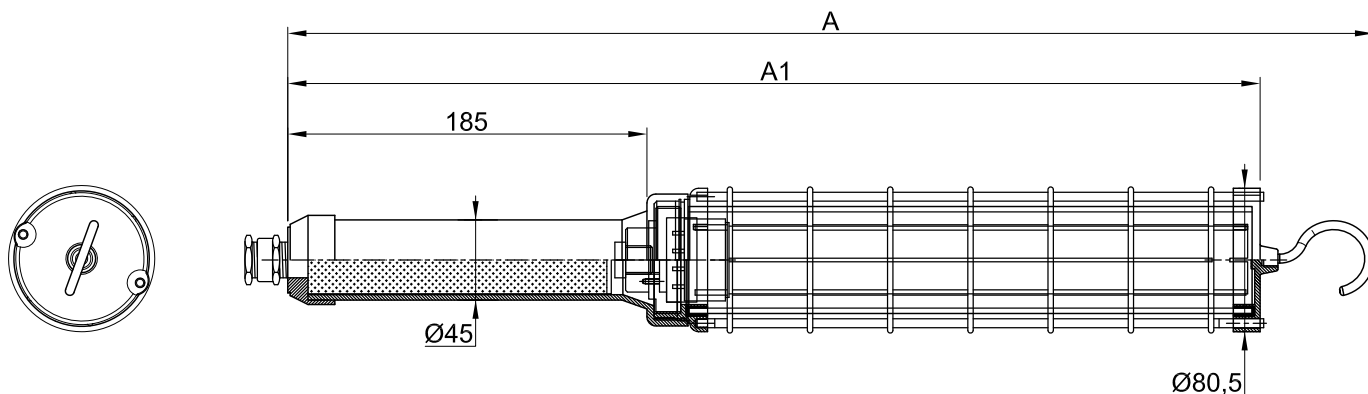|	
Lamp holder:	2G11 (4-pins)
Ballast:	Electronic, installed in the handle
Rated voltage:	24 Vdc
Connection:	Direct to the connectors fixed on the electronic board L, N, Pe max section 2.5 mm^2
Wiring:	Silicone rubber cables with glass braid protection against high temperatures

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Compact 4 pin PL-L 24W fluorescent lamp for FHL-124 or PL-L36W for FHL-136
Eyebolt internal Ø 20mm
Protective reflector
Base for vertical use
Magnetic mounting
Cable winder (23 metres)
Portable lamp complete with 5m of 3x1.5mm^2 cable and Cortem plug model SPY (Code FHL-124C5 and FHL-136C5)
GAS UNI ISO 7/1 thread

CORTEM GROUP®

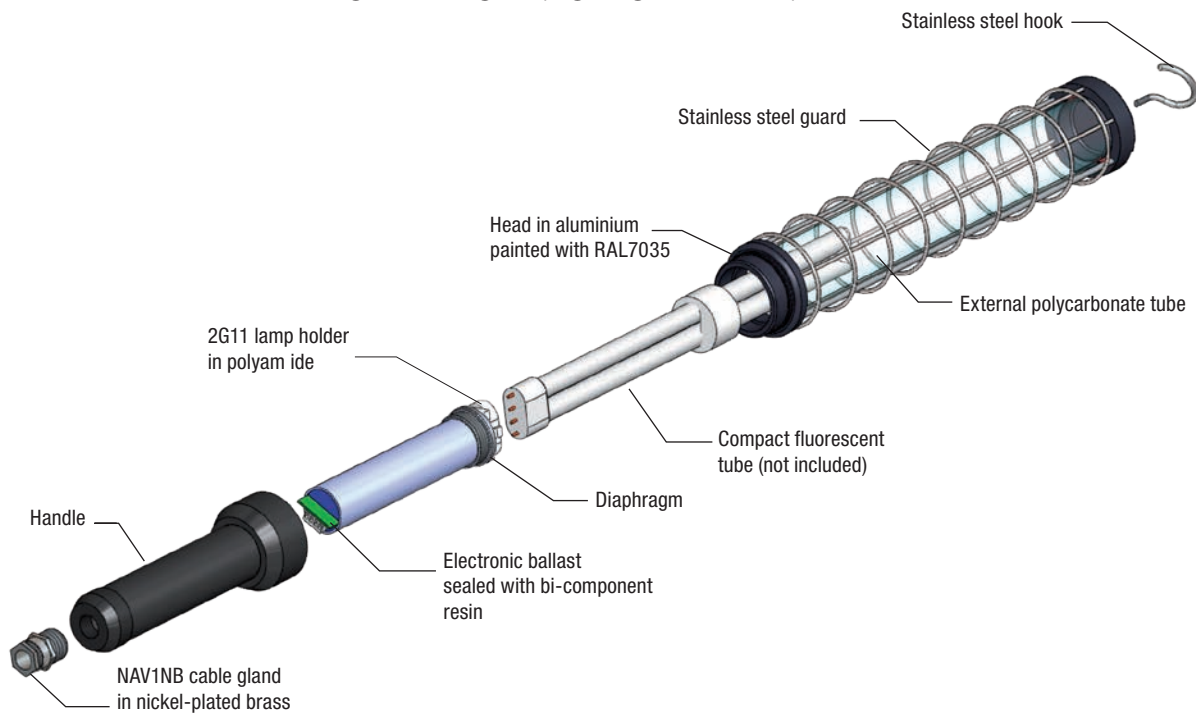| Code	Dimensions mm		Lamp n°	Power supply	Watt	Class T.a. +50°C	Max. surface temp. °C	Weight kg
	A	A1						
FHL-124	622	544	1	24 Vdc	24	T6	79,1	1.30
FHL-136	713	638	1	24 Vdc	36	T6	79,1	1.50

DIMENSIONAL DRAWING

A

A1

185

Ø45

Ø80,5

Dimensions in mm

EXPLODED DIAGRAM OF PORTABLE LAMP

Stainless steel hook

Stainless steel guard

Head in aluminium painted with RAL7035

External polycarbonate tube

2G11 lamp holder in polyam ide

Compact fluorescent tube (not included)

Diaphragm

Handle

Electronic ballast sealed with bi-component resin

NAV1NB cable gland in nickel-plated brass

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Type of lighting fixture FHL-124 + Fluorescent tubes LAMP-PLL24W + Protective reflector G24-669 + Eyebolt GOF-8 + other...see key

ACCESSORY

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Compact fluorescent tube	24 W	1800 lm (FSD24W)	LAMP-PLL24W	
		36 W	2900 lm (FSD36W)	LAMP-PLL36W	
	Base for vertical use	FHL-124 FHL-136	Material: white RAL 7035 paint	G-161	
	Permanent magnet for pendant or horizontal mounting	FHL-124 FHL-136	Material: round 63x14 magnet, traction 320N	FTN-32	
	Eyebolt internal Ø20 mm	FHL-124 FHL-136	Material: galvanised steel	GOF-8	
	Protective reflector	FHL-124	Material: white painted aluminium	G24-669	
		FHL-136		G36-669	
	Automatic wall-mounted spring-loaded cable winder **Attention: the cable winder can only be used in safe areas**	FHL-124 FHL-136	Alluminium cable winder body with IP65 degree of protection Stainless steel support bracket Cable length - 23 metres	ZECA6189PRCIP65	
	Electronic ballast sealed with sparkpro- of two-part resin	FHL-124	24 Vdc	G24-0558	
		FHL-136		G36-0558	
	Hook	FHL-124 FHL-136	Material: stainless steel	HOOK-M8	
	Cable gland		For models and codes, visit www.cortemgroup.com	NAV1NB	

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Example of pendant mounting with magnet

Ferrous
structure
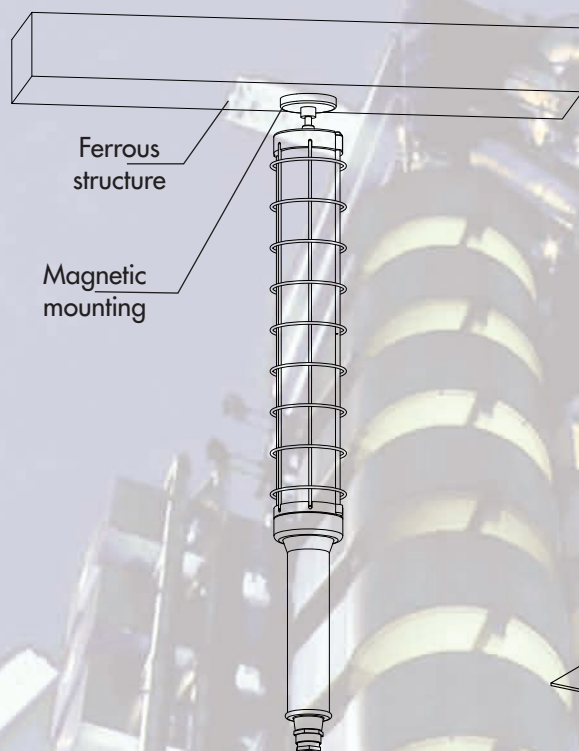
Magnetic
mounting

Example of the base being used for vertical mounting

Base unit

Floor
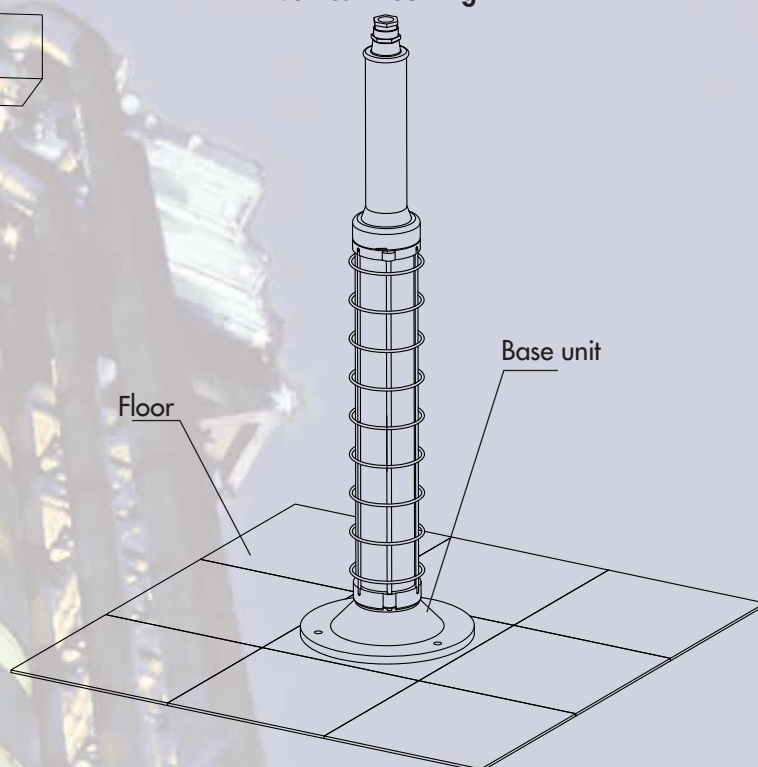
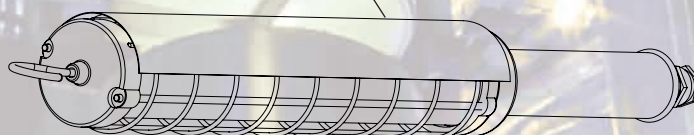**Example of horizontal mounting with magnet**

Ferrous
structure

Magnetic
mounting

Magnetic
mounting
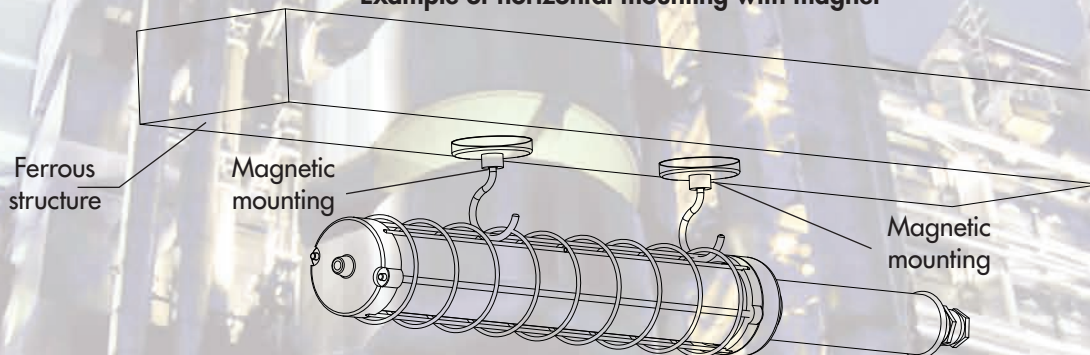
Protective reflector mounting system

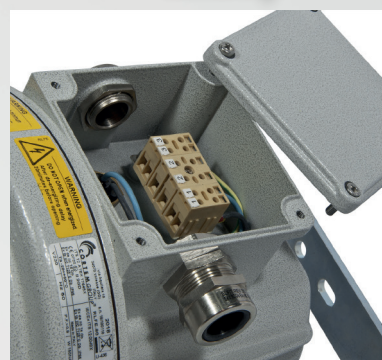Reflector in white painted aluminium to
protect from dazzling

RLFE

- **Fast, easy installation**
- **Suitable for discharge lamps of up to 400W**
- **Robust and safe over time**
- **Zones 1, 2, 21, 22**

Mounting bracket
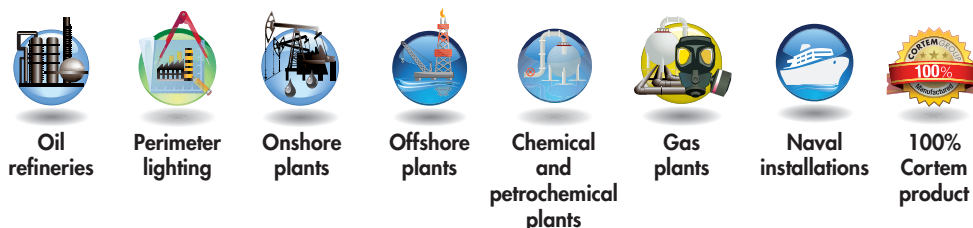
Stainless steel guard

Ex e terminal housing

RLFE series Lighting fixtures for discharge lamps up to 400W

RLFE series lighting fixtures for discharge lamps are ideal for lighting large areas specifically in the chemical, on and off shore petrochemical industries. They are certified for use in Zones 1, 2, 21, 22 and comply with the 2014/34/UE directive. The body of the lighting fixture is made from low copper content aluminium alloy, the globe is made of borosilicate glass and has excellent thermal and mechanical properties. For this reason, the fixture can also be installed without a protective guard as specified in the relevant standards. In the RLFE series, the lamp and lamp holder are separated by a "chamber" housing the ballast and igniter that in turn are separated by a "Ex e" terminal box that is used to connect the lighting fixture to the power supply through a cable gland with an Ex (non barrier) seal as specified in EN/IEC 60079-14. The ease of access to the different "chambers" housing the electrical components means lower installation and maintenance costs and less wear and tear over time means a longer lifespan for the lamp.

Application sectors

Oil refineries | Perimeter lighting | Onshore plants | Offshore plants | Chemical and petrochemical plants | Gas plants | Naval installations | 100% Cortem product

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation:	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		

Marking: CE 0722 ⟨Ex⟩ II 2GD Ex de IIC T.. Gb - Ex tb IIIC T..°C Db IP66

Certification:

ATEX	ITS 12 ATEX 17645X	
IEC Ex	ITS 12.0048X	All IEC Ex and TR CU certification data can be downloaded at www.cortemgroup.com

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 60079-7:2006, 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:	See selection chart			
Ambient temperature:	-20°C +60°C			
Degree of protection:	IP66			

TESTED
810b83bbcf

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
	Fitted with cooling fins for better heat dissipation
Globe:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Guard:	Electro-polished stainless steel.
Bolts and screws:	Stainless steel
Entries:	2 x ISO M25 entries. Lighting fixture kit with PLG2IB plug and NAV25IB 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)

ELECTRICAL FEATURES

Lamp holder:	E27 or E40 ceramic
Ballast:	Electromechanical
Rated voltage:	230 V AC
Rated frequency:	50 Hz
Connection:	Direct connection to the terminal board L, N, Pe. Section 4mm^2, suitable for input/output
Power factor:	0.96
Wiring:	Silicone rubber cables with glass braid protection against high temperatures

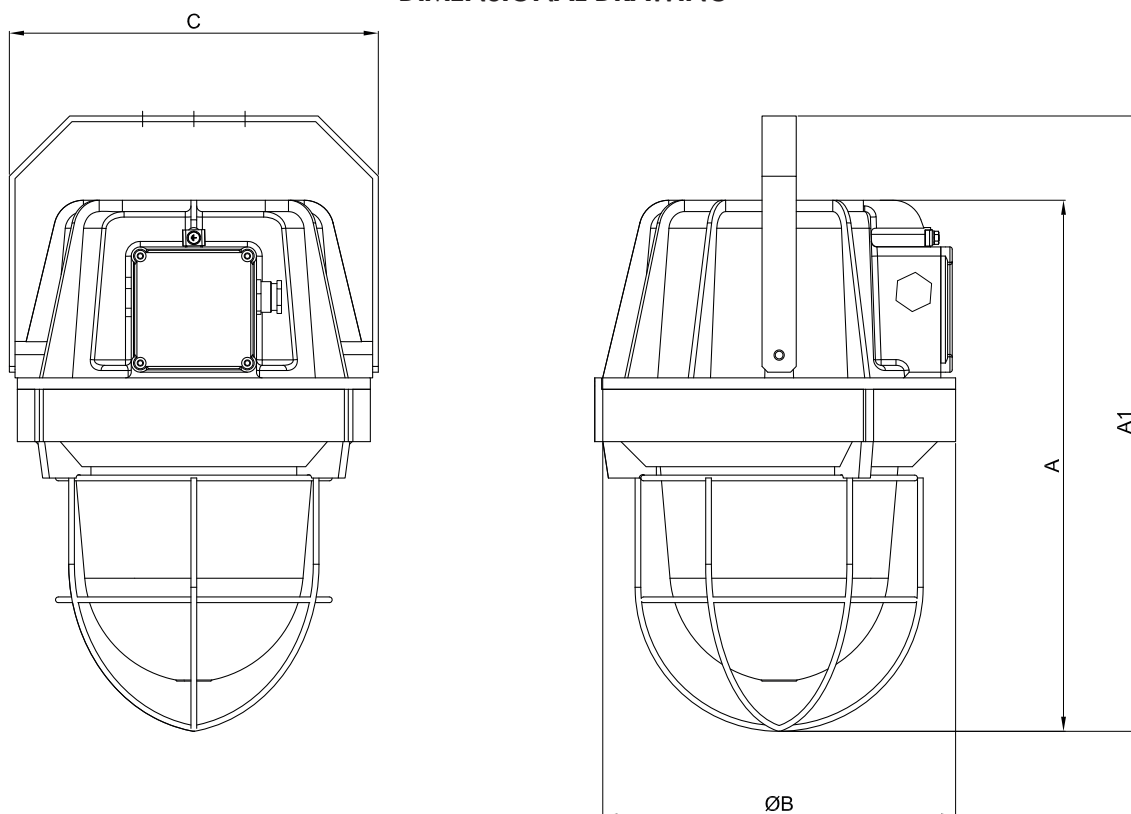## ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Discharge lamp
Different rated voltages
External reflector

CORTEM GROUP®

Code	Dimensions mm				Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max surface temp. °C	Weight kg	mm
	A	A1	øB	C							
RLFE-80N1	425	495	236	250	Sodium vapour	E 27	70	T4	113	10,5	425x250x250
RLFE-80N2	425	495	236	250	Sodium vapour	E 40	100	T4	125	10,5	425x250x250
RLFE-80N4	425	495	236	250	Sodium vapour	E 40	150	T4	125	10,5	425x250x250
RLFE-80IM1	425	495	236	250	Metal halide	E 27	70	T4	113	10,5	425x250x250
RLFE-80IM2	425	495	236	250	Metal halide	E 27	100	T4	125	10,5	425x250x250
RLFE-80IM4	425	495	236	250	Metal halide	E 27	150	T4	125	10,5	425x250x250
RLFE-100N5	480	565	310	325	Sodium vapour	E 40	250	T3	132	19	480x325x325
RLFE-100IM5	480	565	310	325	Metal halide	E 40	250	T3	132	19	480x325x325
RLFE-110N6	575	645	310	325	Sodium vapour	E 40	400	T4	129	22	475x325x325
RLFE-110IM6	575	645	310	325	Metal halide	E 40	400	T4	129	22	475x325x325

DIMENSIONAL DRAWING

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Type of lighting fixture + **RLFE-110F5** + **Lamp LAMP400WHQL** + **Dome reflector G110-672** + other... see key

ACCESSORY

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RLFE series Accessories and spare parts available on request

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	High pressure sodium vapour lamp	E27	70 W (SE70W)	**LAMPNAV70WPLUS**	
			100 W (SE100W)	**LAMPNAV100WPLUS**	
		E40	150 W (SE150W)	**LAMPNAV150WPLUS**	
			250 W (SE250W)	**LAMPNAV250WPLUS**	
			400 W (SE400W)	**LAMPNAV400WPLUS**	
	Metal halide lamp	E27	70 W (ME70W)	**LAMP70WJM**	
			100 W (ME100W)	**LAMP100WJM**	
			150 W (ME150W)	**LAMP150WJM**	
		E40	230 W (ME250W)	**LAMP230WJM**	
			360 W (ME400W)	**LAMP360WJM**	
	Dome reflector	RLFE-80	White painted aluminium	**G80-672D**	
		RLFE-100	Contact our Sales Office for availability		
		RLFE-110	Contact our Sales Office for availability		

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Protective guard	RLFE-80	Material: Electro-polished stainless steel	G70-0417	SPARE PART
		RLFE-100		G100-0417	
		RLFE-110		G110-0417	
	Mounting bracket	RLFE-80	Material: galvanised steel	G1-670	SPARE PART
		RLFE-100 RLFE-110		G2-670	
	Ceramic lamp holder	E27 (RLFE-80)	250V 4A	PORT E-27/X	SPARE PART
		E27	250V 4A	PORT E-27	
		E40	750V 16A	PORT E-40	
	Igniter		50-400W	R100	SPARE PART
	Cable gland	ISO M25	(std. range cable 11÷20)	NAV25IB	SPARE PART
	Metal capacitor		7 μF	F-70	SPARE PART
			8 μFv	F-80	
			10 μF	F-125	
			12 μF	F-12	
			20 μF	F-20	
	Ballast for sodium vapour and metal halide lamp		70 W	W R-70NAAP	SPARE PART
			100 W	R-100NA	
			150 W	R-150NA	
			250 W	R-250NA	
			400 W (sodio)	R-400NA	
			400 W (ioduri)	R-400	

Example of pole mounting

Example of wall mounting

ß

Pole Ø1 1/2"

Example of ceiling mounting

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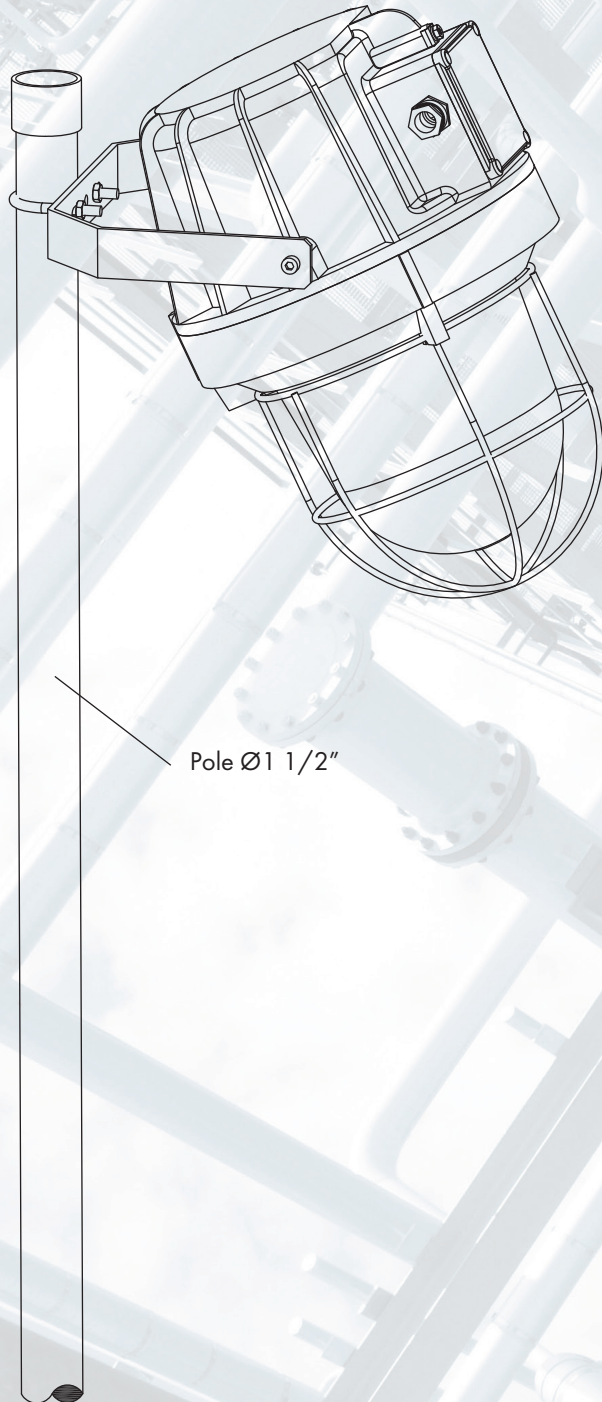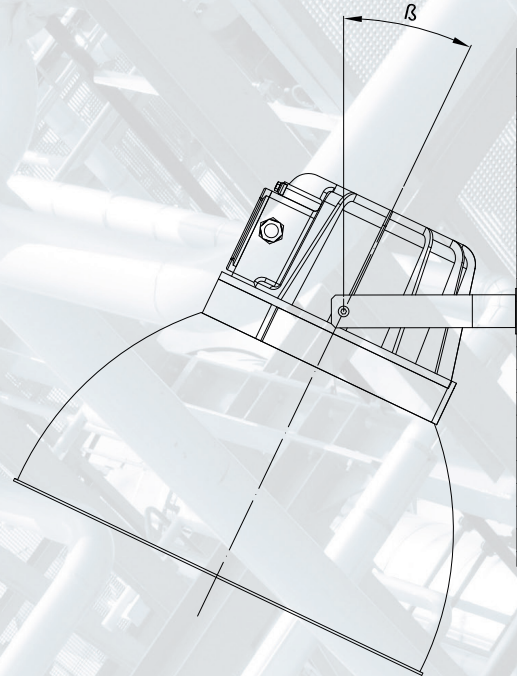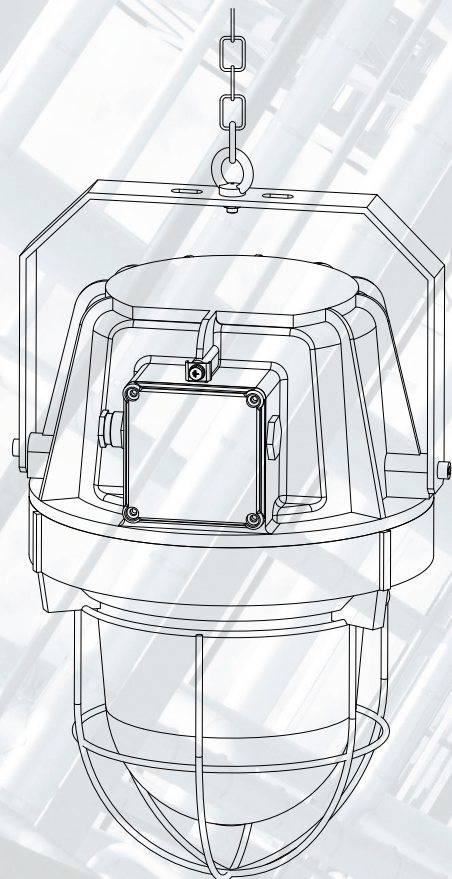
EVE

- **Optimal performance at high (+60°C) and low (-50°C) temperatures**
- **Easy to install, low maintenance costs**
- **Zone 1, 2, 21, 22**

Silicon gasket

4 Joule shock resistant borosilicate glass globe

Stainless steel reflector fixing screw

Stainless steel protective guard

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EVE series Lighting fixtures for traditional and LED lamps

EVE series lighting fixtures have been specially designed for use in the petrochemical and oil refining industries as they combine beauty and functionality along with high performance and simplicity in complete compliance with the technolo gical requirements of the "Ex sector". The low copper content aluminium alloy, shockproof borosilicate glass and electro-polished stainless steel components make these lighting fixtures ideal for use in environments with corrosive atmospheric agents, salts and industrial pollution. Mechanical characteristics such as ceramic lamp holders with high heat resistance and insulating properties and acid-proof silicone gaskets guarantee a long working life with little maintenance. Scheduled maintenance work involves simply cleaning the glass that, thanks to its IP66 protection, can be safely cleaned with a wet cloth. Electrical connection is made via a terminal box in a "Ex e" compartment that allows the entry to the lighting fixture through an "Ex" O-ring (non barrier) cable gland as specified in the installation specification standards (EN/IEC 60079-14).

Application sectors

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

CERTIFICATION DATA

Classification:	Group II	Categoria 2GD		

Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		

Marking: CE 0722 ⟨Ex⟩ II 2GD Ex de IIC T.. Gb - Ex tb IIIC T..°C Db IP66

Certification:	ATEX	CESI 12 ATEX 006			

	IEC Ex	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:	See the selection table		

Ambient temperature:	-20°C +60°C

Degree of protection:	IP66

CORTEM GROUP®

EVE series Lighting fixtures for traditional and LED lamps

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
Globe:	Shock and temperature resistant borosilicate glass with aluminium shade ring
Gaskets:	Acid/hydrocarbon resistant silicone
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 "EVE series dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	See "EVE series dimensional drawings"
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 holder:	E27 or E40 ceramic
Rated voltage:	230 V AC
Rated frequency:	50/60 Hz
Connection:	Direct connection to the terminal box L, N, Pe. Section 4mm^2

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

LED lamps
External reflector
Cable gland: NAV25IB for armored or NEV25IB for non-armored cable
Warning signs: G-0513
Swivel bracket for inclined mounting

Code	Dimensions mm		Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max Surface Temperature °C	Weight kg	mm
	A	B							
EVEA-5050	261	150	AL	E 27	70	T4	123	1,9	160x150x330
EVEA-5050	261	150	AL	E 27	105	T3	154	1,9	160x150x330
EVEA-5050	261	150	AL	E 27	140	T3	154	1,9	160x150x330
EVEA-5050	261	150	ELS	E 27	15	T6	84	1,9	160x150x330
EVEA-5050	261	150	LED	E 27	8	T6	74	1,9	160x150x330
EVEA-5050	323	170	EL	E 27	23	T5	86	2,7	190x170x390
EVEA-5060	323	170	ELS	E 27	23	T5	86	2,7	190x170x390
EVEA-5060	323	170	LED	E 27	12	T6	74	2,7	190x170x390

EVEA Pendant mounting
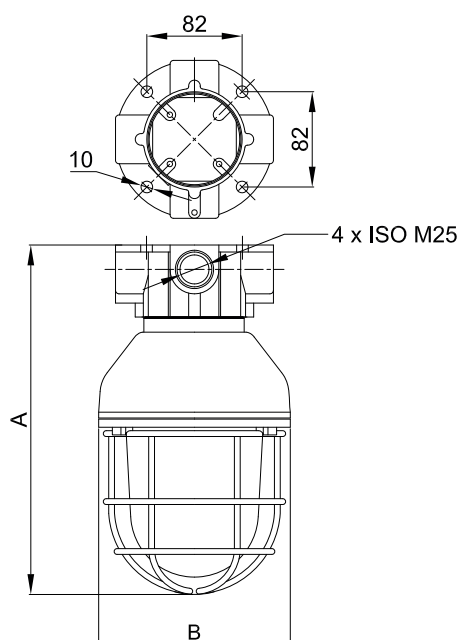
ISO M25

A

B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

CORTEM GROUP®

EVEGC series selection chart Pendant mounting with eyebolt

Code	Dimensions mm		Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max Surface temperature °C	Weigth kg	mm
	A	B							
EVEGC-5050	296	150	AL	E 27	70	T4	123	2,1	160x150x330
EVEGC-5050	296	150	AL	E 27	105	T3	154	2,1	160x150x330
EVEGC-5050	296	150	AL	E 27	140	T3	154	2,1	160x150x330
EVEGC-5050	296	150	ELS	E 27	15	T6	84	2,1	160x150x330
EVEGC-5050	296	150	LED	E 27	8	T6	74	2,1	160x150x330
EVEGC-5060	358	170	EL	E 27	23	T5	86	2,8	190x170x390
EVEGC-5060	358	170	ELS	E 27	23	T5	86	2,8	190x170x390
EVEGC-5060	358	170	LED	E 27	12	T6	74	2,8	190x170x390

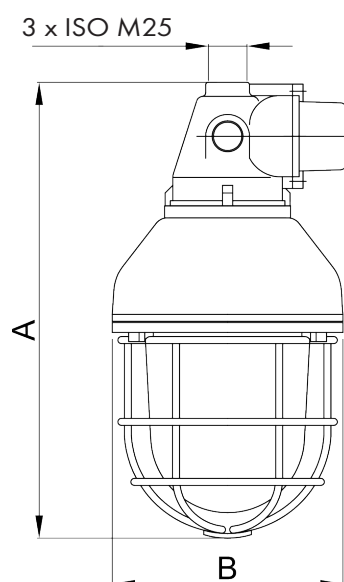**EVEGC Pendant mounting with eyebolt**
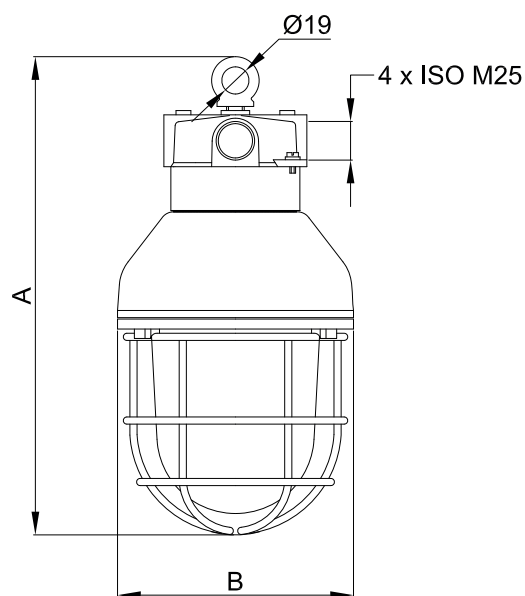
Ø19
4 x ISO M25
A
B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

A.34

CORTEM GROUP®

EVEIX series selection chart Wall mounting

Code	Dimensions mm			Lamp type	Lamp holder	Watt	Class Ta=+60°C	Max Surface temperature °C	Weight kg	mm
	A	B	C							
EVEIX-5050	285	150	310	AL	E 27	70	T4	123	2,9	190x170x390
EVEIX-5050	285	150	310	AL	E 27	105	T3	154	2,9	190x170x390
EVEIX-5050	285	150	310	AL	E 27	140	T3	154	2,9	190x170x390
EVEIX-5050	285	150	310	ELS	E 27	15	T6	84	2,9	190x170x390
EVEIX-5050	285	150	310	LED	E 27	8	T6	74	2,9	190x170x390
EVEIX-5060	339	170	344	EL	E 27	23	T5	86	3,7	260x210x490
EVEIX-5060	339	170	344	ELS	E 27	23	T5	86	3,7	260x210x490
EVEIX-5060	339	170	344	LED	E 27	12	T6	74	3,7	260x210x490

EVEIX Wall mounting with 30° bracket

82

82

10

C

4 x ISO M25

A

B

Key
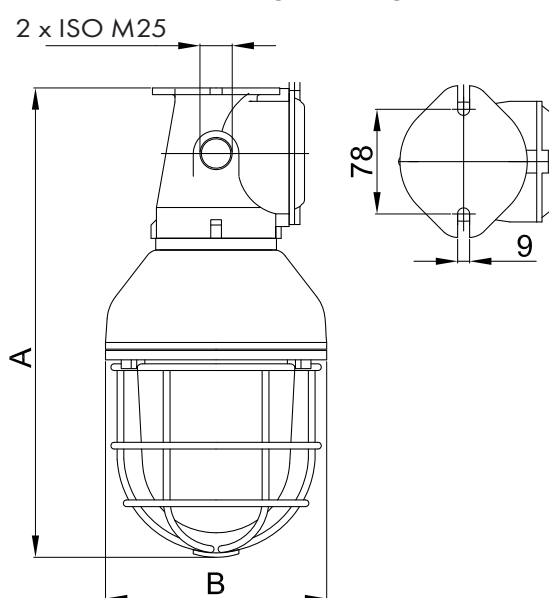
EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

Dimensions in mm

CORTEM GROUP®

EVEX series selection chart Ceiling mounting

| Code | Dimensions mm | | Lamp type | Lamp holder | Watt | Class Ta=+60°C | Max Surface temperature °C | Weight kg | mm |
	A	B							
EVEX-5050	260	150	AL	E 27	70	T4	123	1,9	160x150x330
EVEX-5050	260	150	AL	E 27	105	T3	154	1,9	160x150x330
EVEX-5050	260	150	AL	E 27	140	T3	154	1,9	160x150x330
EVEX-5050	260	150	ELS	E 27	15	T6	84	1,9	160x150x330
EVEX-5050	260	150	LED	E 27	8	T6	74	1,9	160x150x330
EVEX-5060	322	170	EL	E 27	23	T5	86	3,3	190x170x390
EVEX-5060	322	170	ELS	E 27	23	T5	86	3,3	190x170x390
EVEX-5060	322	170	LED	E 27	12	T6	74	3,3	190x170x390

EVEX Ceiling mounting

82

82

10

4 x ISO M25

A

B

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

Dimensions in mm

CORTEM GROUP®

Code	Dimensions mm		Lamp type	Lmap holder	Watt	Class Ta=+60°C	Max Surface temperature °C	Weight kg	mm
	A	B							
EVE -5050	294	150	AL	E 27	70	T4	123	2,2	160x150x330
EVE -5050	294	150	AL	E 27	105	T3	154	2,2	160x150x330
EVE -5050	294	150	AL	E 27	140	T3	154	2,2	160x150x330
EVE -5050	294	150	ELS	E 27	15	T6	84	2,2	160x150x330
EVE -5050	294	150	LED	E 27	8	T6	74	2,2	160x150x330
EVE-5060	356	170	EL	E 27	23	T5	86	3,5	190x170x390
EVE-5060	356	170	ELS	E 27	23	T5	86	3,5	190x170x390
EVE-5060	356	170	LED	E 27	12	T6	74	3,5	190x170x390

EVE Pendant mounting

3 x ISO M25

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

Code	Dimensions mm		Lamp type	Lamp golder	Watt	Classe Ta=+60°C	Max Surface temperature °C	Weight kg	mm
	A	B							
EVES -5050	317	150	AL	E 27	70	T4	123	2,7	160x150x330
EVES -5050	317	150	AL	E 27	105	T3	154	2,7	160x150x330
EVES -5050	317	150	AL	E 27	140	T3	154	2,7	160x150x330
EVES -5050	317	150	ELS	E 27	15	T6	84	2,7	160x150x330
EVES -5050	317	150	LED	E 27	8	T6	74	2,7	160x150x330
EVES-5060	379	170	EL	E 27	23	T5	86	3,5	190x170x390
EVES-5060	379	170	ELS	E 27	23	T5	86	3,5	190x170x390
EVES-5060	379	170	LED	E 27	12	T6	74	3,5	190x170x390

EVES Ceiling mounting

2 x ISO M25

78

9

A

B

Dimensions in mm

Key

EL = Linear tubes (FBT)
AL = Halogen (HSGSA)
MIX = Mixed light (QB)
ELS = Spiral tubes (FB)
LED = With LED (DB)

DON'T FORGET TO ORDER THE ACCESSORIES

| Example: Type of lighting fixture + EVEA-5060 | Lamp LAMP-PL23 | + | Dome reflector G60-427D | + other... see key | ACCESSORY |

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

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	LED lamp	E27	8 W (DB8W)	**LAMPLED8W**	
		E27	12 W (DB12W)	**LAMPLED12W**	
	Cable gland		For models and codes, visit www.cortemgroup.com	**NAV25IB** **NEV25IB**	
	Swivel bracket for inclined mounting (see example in installation methods)	50	Material: galvanised steel	**G-0543**	
		60			
	Protective guard	50	Material: electro-polished stainless steel	**G50-0417**	
		60		**G60-0417**	
	Ceramic lamp holder	E27	250 V 4 A	**PORT E-27**	
		E40	750 V 16 A	**PORT E-40**	
	O-ring	Globo 50	Material: silicone	**OR-4512SH70S**	
		Globo 60		**K15-131S**	

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Warning signs on the frame	50	Materials: translucent film on plexiglass and aluminium frame	G-0513	
		60		G-0513/1	
EXIT	Emergency Exit	G-0513 G-0513/1	Material: film translúcido	U-420/P	
	Emergency Exit on the right			U-420/P1	
	Emergency Exit on the left			U-420/P2	
	Emergency Exit upward			U-420/P3	
	Emergency Exit downward			U-420/P4	
	Reflector	50	White painted aluminium Stainless stee	G50-427 G50-427IN	
		60	White painted aluminium Stainless stee	G60-427 G60-427IN	
	Dome reflector	50	Contact our Sales Office for availability		
		60	White painted aluminium	G60-427D	
	30° inclined dome reflector	50	Contact our Sales Office for availability		
		60	White painted aluminium	G60-427DI	

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

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Ex e pendant mounting EVE	50	3 x entries ISO M25	G-0444	
		60			
	Ex e ceiling mounting EVES	50	2 x entries ISO M25	G-0439	
		60			
	Globe with shade ring	50	Borosilicate glass globe Threaded aluminium shade ring	G50-0440CM	
		60		G60-0440CM	
	Pendant eyebolt		Material: galvanised steel	GOF-8	
	Pendant mounting EVEA	50	1 x ISO M25 entry	G-0213I	
		60			
	Pendant mounting with eyebolt EVEGC	50	4 x ISO M25 entries	G-0216I	
		60			
	Ceiling mounting EVEX	50	4 x ISO M25 entries	G-0214I	
		60			
	Wall mounting with 30° bracket	50	4 x ISO M25 entries	G-0215I	
		60			

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Installation and mounting methods

Example of swivel bracket mounting

80
Ø 1 ½"
Ø10

30°, 45°
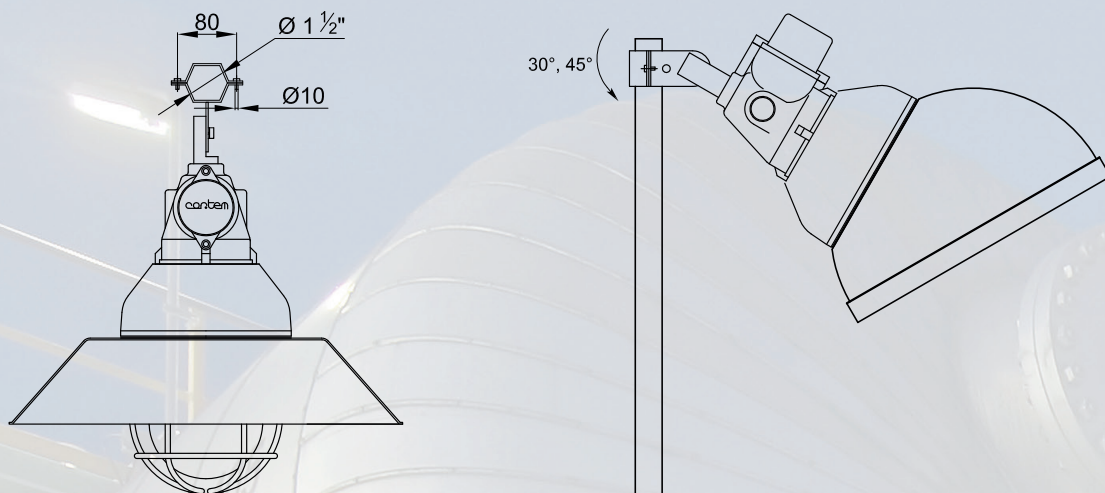
Example of ceiling mounting
with lighting fixture for loop-in/loop-out
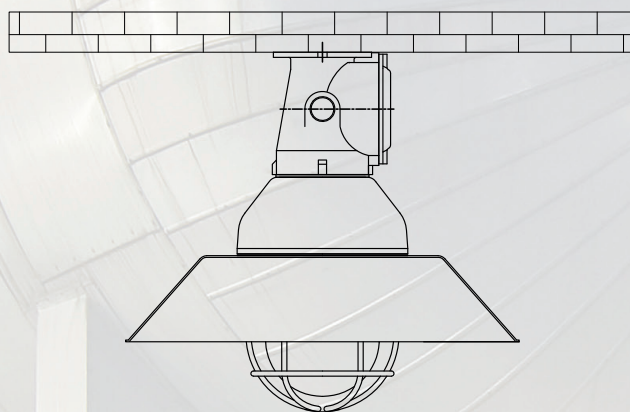
Example of wall mounting
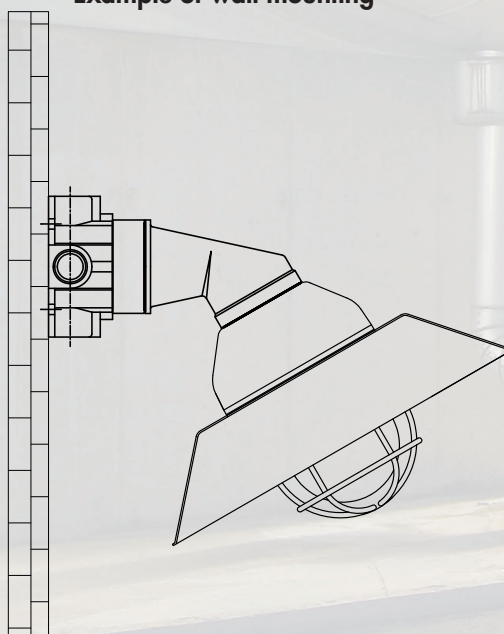
Dimensiones en mm

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Photometric diagram
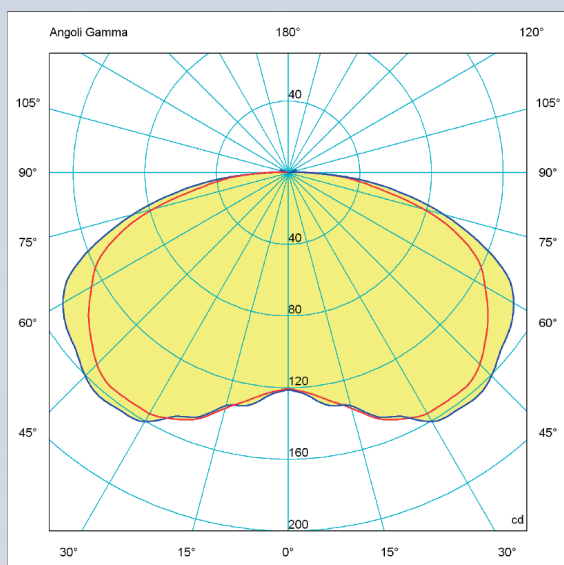
EVE..5060 23W EL
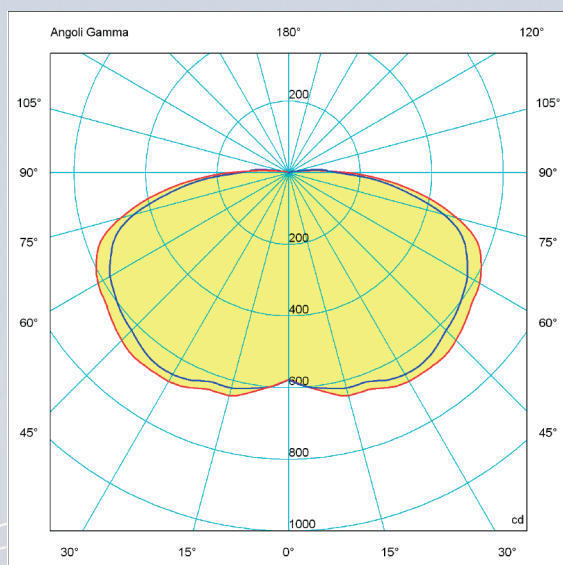
EVE..5080 250W MIX
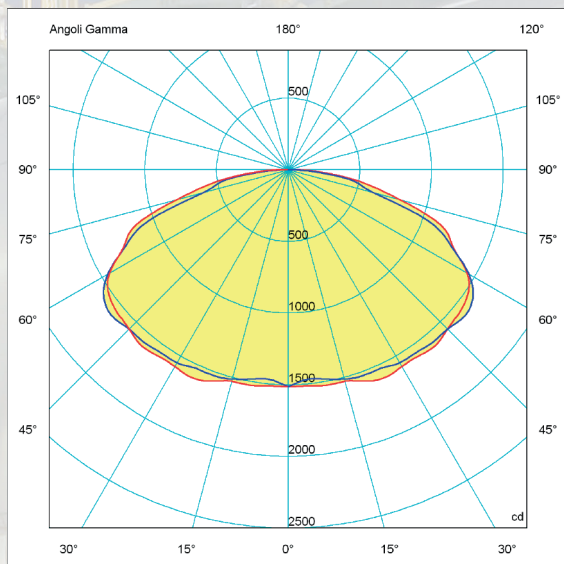
EVE..50100 500W MIX

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

FEATURES OF POLES FOR LIGHTING FIXTURES MOUNTING

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POLE FOR MOUNTING
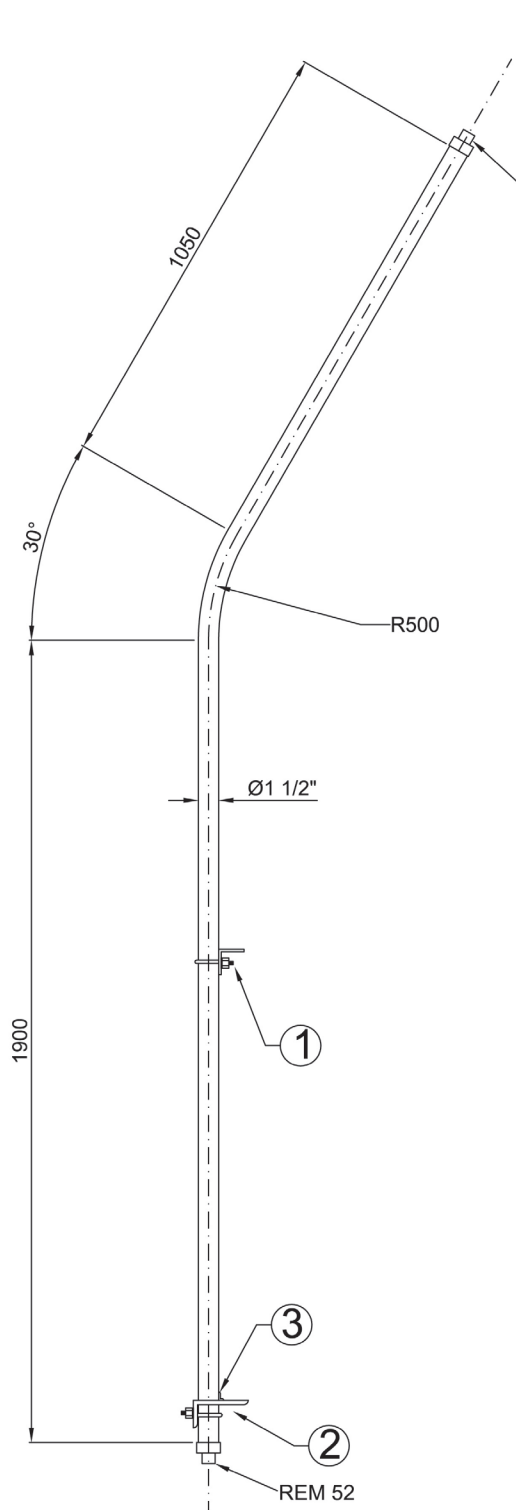## EVA, EW, EWAT, EVEA, EVE, EWE, EWAE, EWNT SERIES LIGHTING FIXTURES

Ø1"
r=250
100
100
30°
1" UNI 6125

DETAIL "A"
Baseplate

10
30
350
300
30
Welded M12 bolt
with locknut
and elastic washer
140
200
80
115   120   115
30

REM 32
REM 63

Ø2"

3000

Ø20 hole and 3/4" sleeve
Welded EM-2

950

Ø8 ground screw
+ washer + nut

350

Detail "A"

M12
50
150
r=25

4 x bolts complete with
locknut and elastic washer
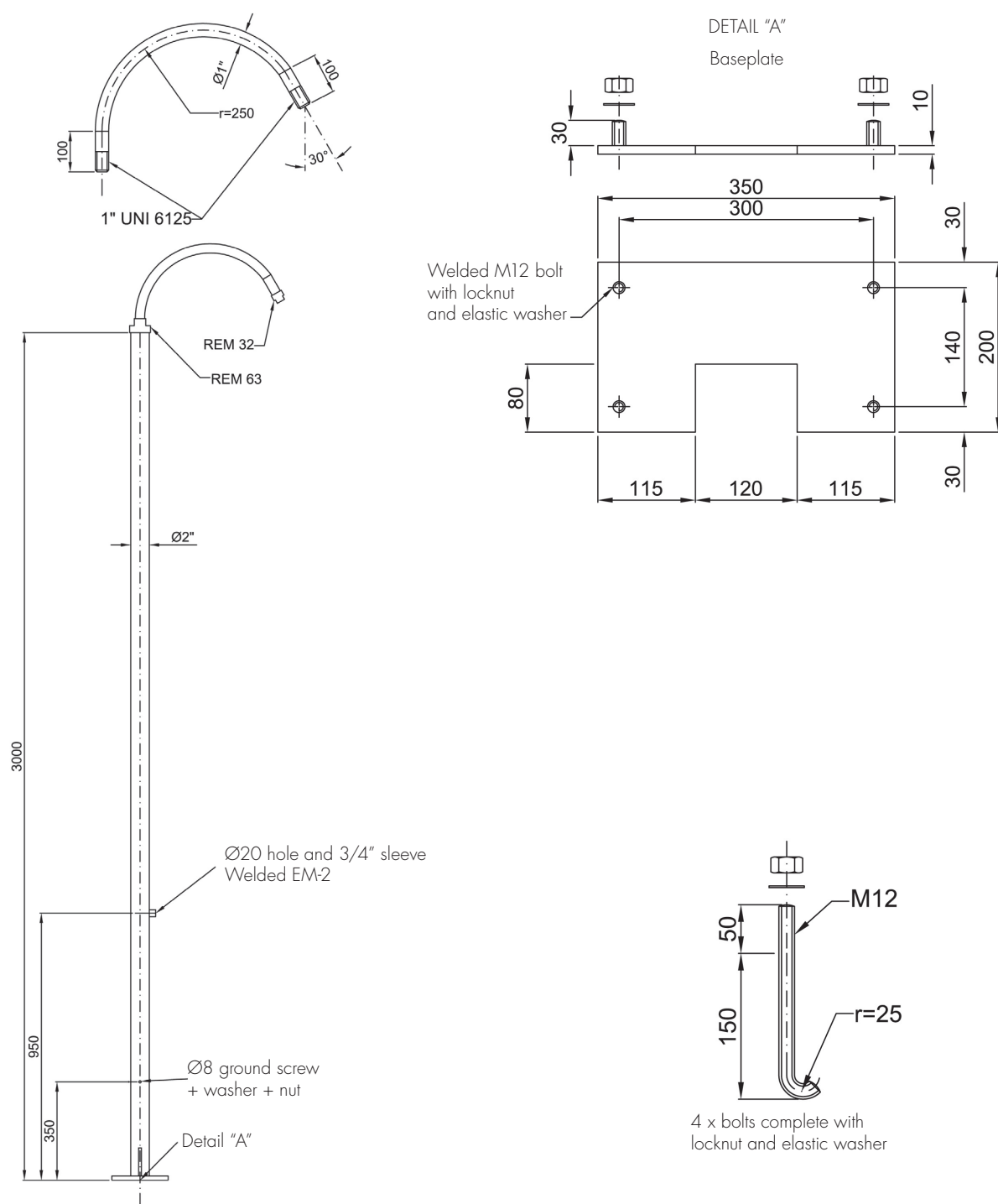
Dimensions in mm

CODE	DESCRIPTION
PAL-01	Pole supplied with welded plate and baseplate
PAL-02	Pole supplied with welded plate and bolts

POLE FOR MOUNTING
EVA, EW, EWAT, EVEA, EVE, EWE, EWAE, EWNT SERIES LIGHTING FIXTURES
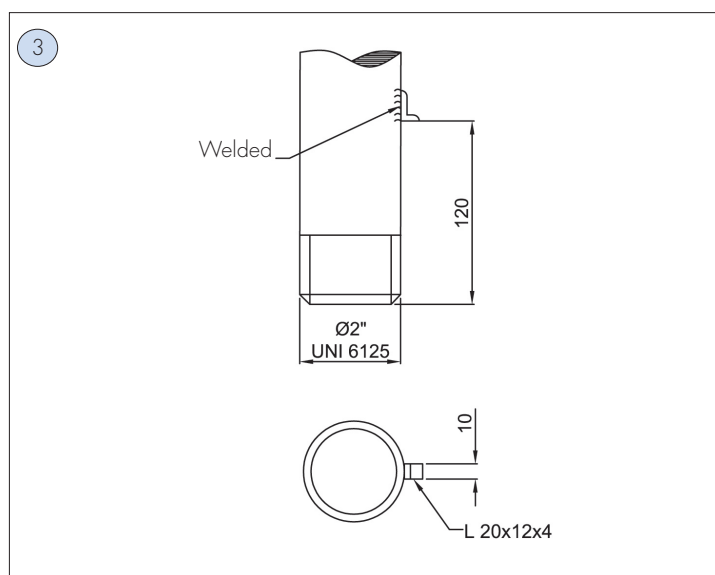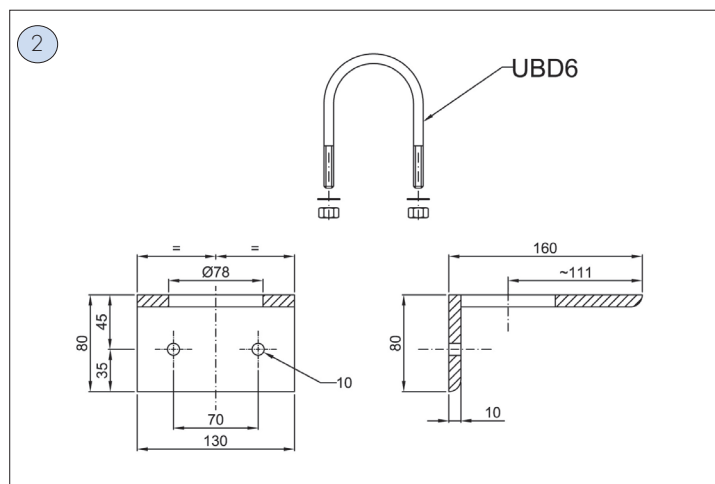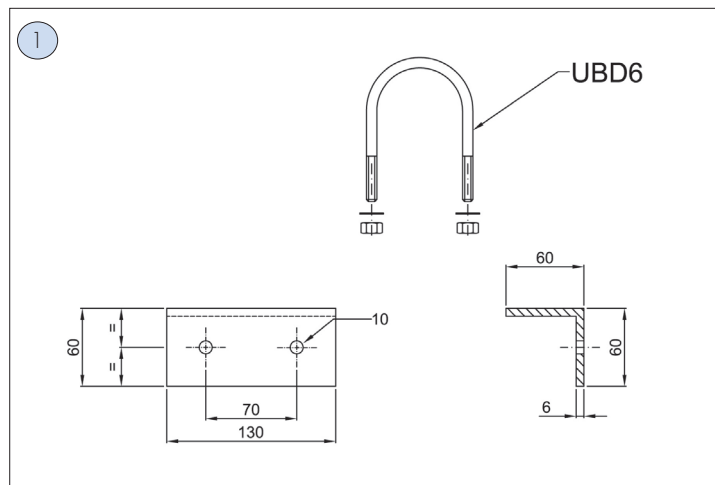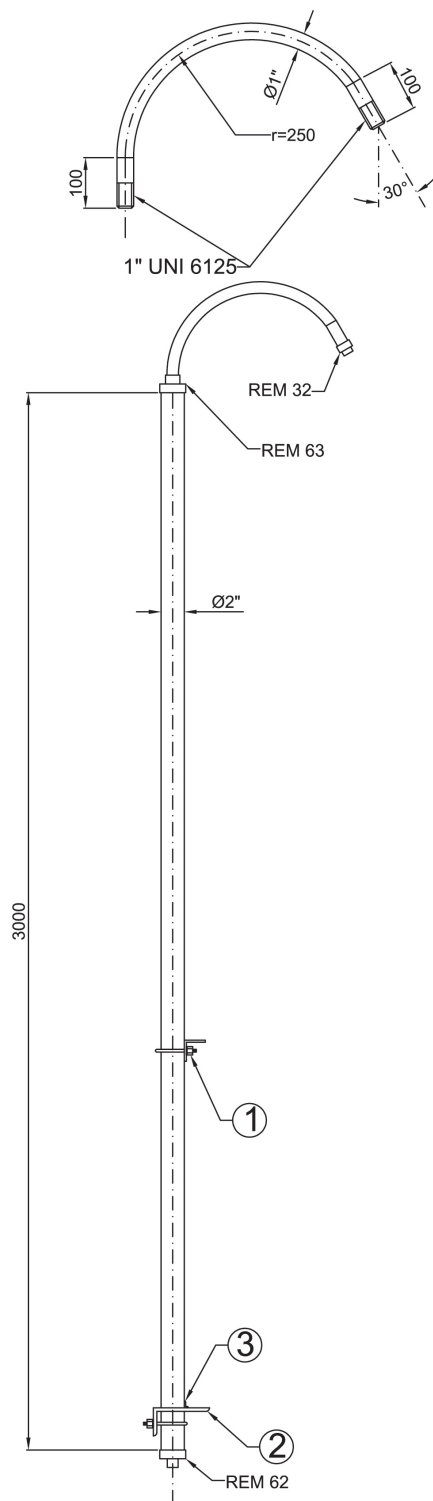
Dimensions in mm

CODE	DESCRIPTION
PAL-03	Pole supplied with angled mounting (see fig.1-2-3)

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POLE FOR MOUNTING
EVA, EW, EWAT, EVEA, EVE, EWE, EWAE, EWNT SERIES LIGHTING FIXTURES

r=300

Ø1 1/2"

100

RE

REM 75

Ø2 1/2"

①

③

②

REM 72

1
UBD7

60

10

85

130

60

60

6

2
UBD7

Ø78

160

~111

80

45

35

80

10

85

130

10

3
Welded

120

Ø2 1/2"
UNI 6125

10

L 20x12x4
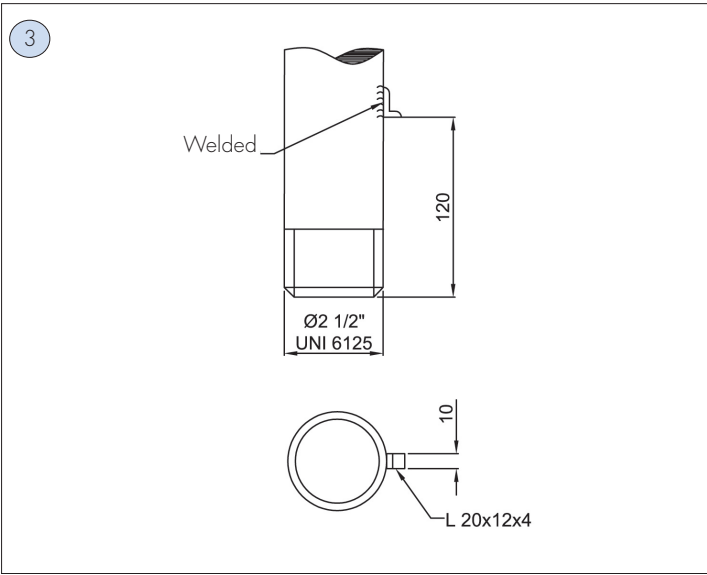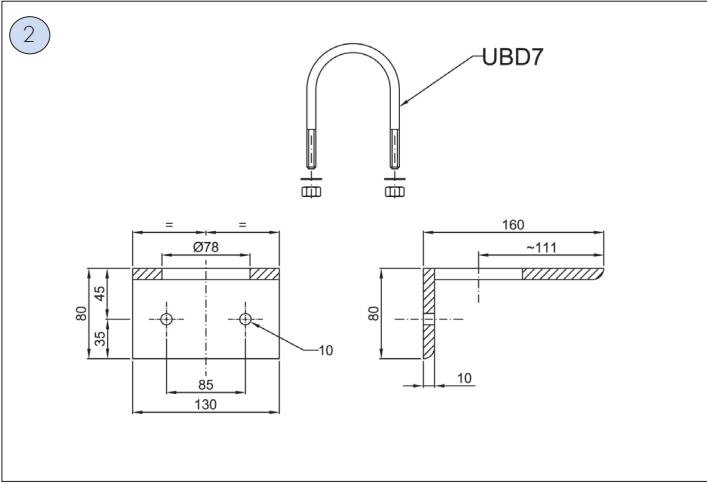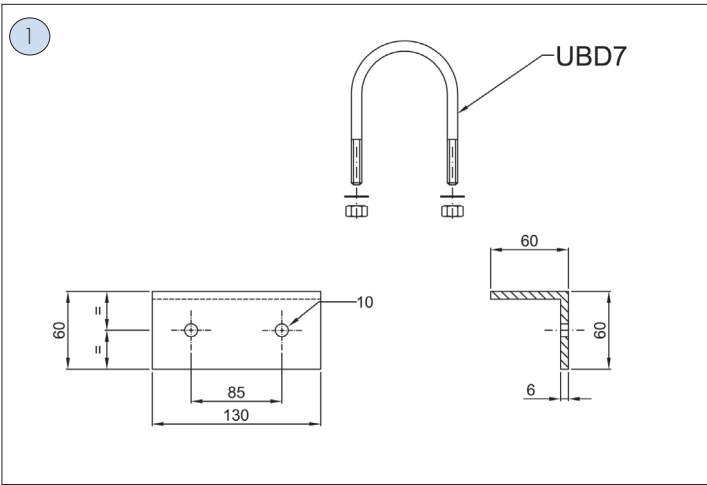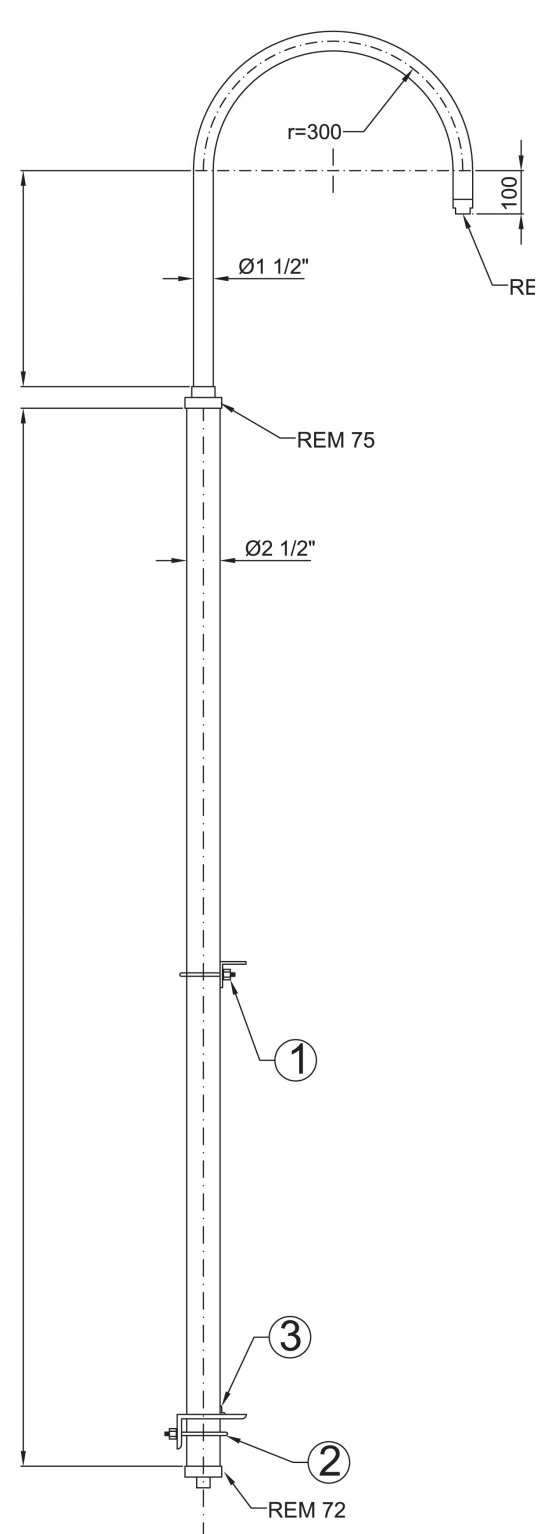
Dimensions in mm

CODE	DESCRIPTION
PAL-04	Pole supplied with angled mounting (see fig.1-2-3)

POLE FOR MOUNTING
EVA, EW, EWAT, EVEA, EVE, EWE, EWAE, EWNT SERIES LIGHTING FIXTURES

DETAIL "A"
Baseplate

r=300

Ø1 1/2"

R

100

500

REM 75

Ø2 1/2"

2350

Ø20 hole and 3/4" sleeve
Welded EM-2

950

Ø8 ground screw
+ washer + nut

350

Detail "A"

Welded M12 bolt
with locknut and
elastic washer

350
300
30
140
200
30
80
115 120 115
30
10

M12
50
150
r=25

4 x bolts complete with
locknut and elastic washer
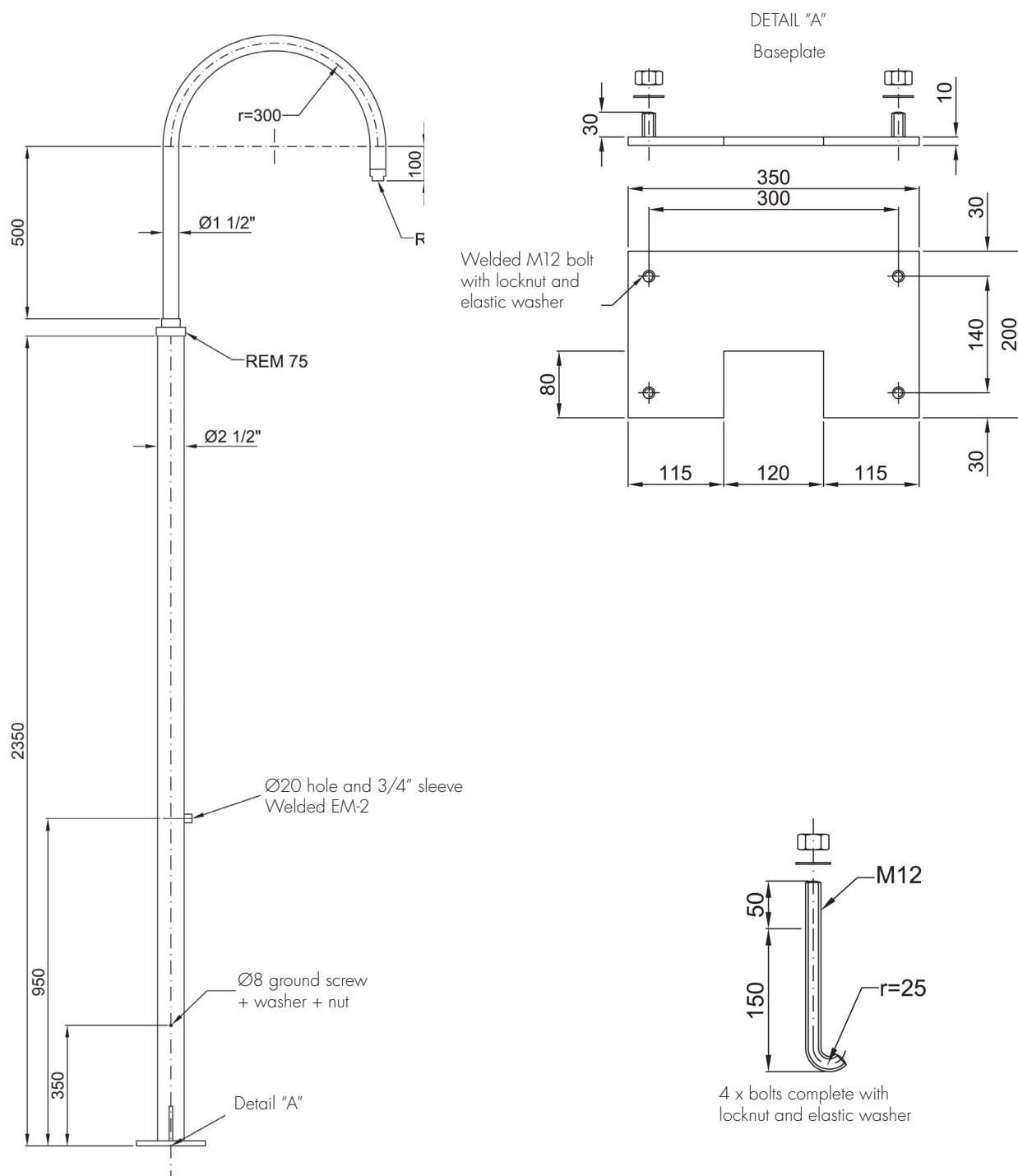
Dimensions in mm

CODE	DESCRIPTION
PAL-05	Pole supplied with welded plate and baseplate
PAL-06	Pole supplied with welded plate and bolts

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POLE FOR MOUNTING
FLFE, EXEN, EVF..E, EVFD, EXEL, FLF, AVN LIGHTING FIXTURES

1050

30°

R500

Ø1 1/2"

1900

① ② ③

REM 52

UBD5

60 — 10 — 60 — 6 — 58 — 100

UBD5

130 ~94 — 65 — 10 — Ø50 — 35 — 30 — 65 — 58 — 100 — 10

Welded — 120 — Ø1 1/2" UNI 6125 — 10 — L 20x12x4
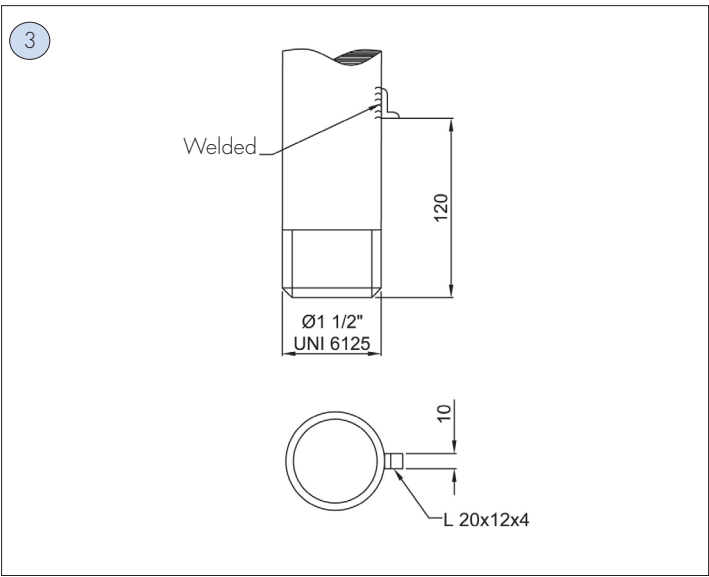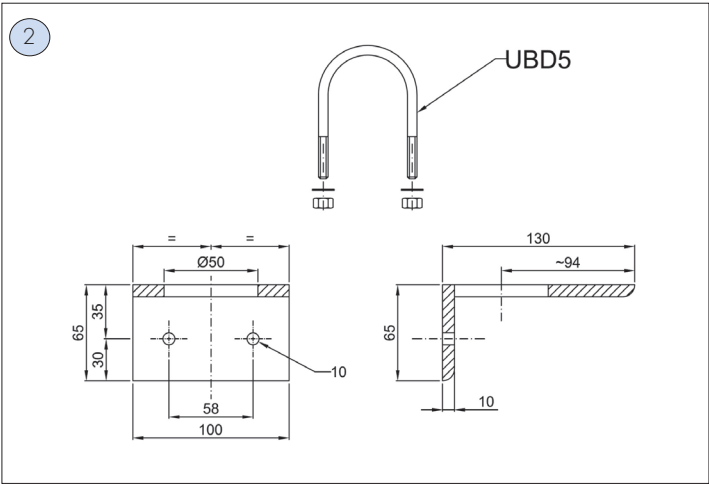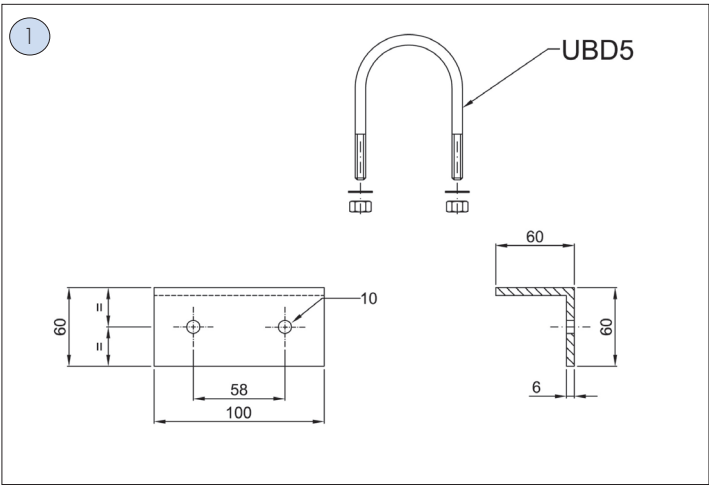
Dimensions in mm

CODE	DESCRIPTION
PAL-07	Pole supplied with angled mounting (see fig. 1-2-3)

POLE FOR MOUNTING
FLFE, EXEN, EVF..E, EVFD, EXEL, FLF, AVN LIGHTING FIXTURES

REB 52

1650

Ø1 1/2"

REM 75

30°

r=500

Ø2 1/2"

2450

①

③

②

REM 72

1

UBD6

60

60

10

70

130

60

60

6

2

UBD6

160

~111

Ø78

45

80

35

80

10

70

130

10

3

Welded

120

Ø2"
UNI 6125

10

L 20x12x4

Dimensions in mm

CODE	DESCRIPTION
PAL-08	Pole supplied with angled mounting (see fig.1-2-3)

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POLE FOR MOUNTING
FLFE, EXEN, EVF..E, EVFD, EXEL, FLF, AVN LIGHTING FIXTURES

I

REB 52

A

30°

Ø1 1/2"

r=500

600

① 1

REM 52

II

MC-5

A

30°

Ø1 1/2"

r=500

40x20 slot

600

① 1

1

100

60

58

10

60

6

60

UBD5

Dimensions in mm

CODE	DESCRIPTION	A (mm)
PAL-09	Pole(I) supplied with angled mounting (see fig.1)	1050
PAL-10	Pole(I) supplied with angled mounting (see fig.1)	1650
PAL-15	Pole(I) supplied with angled mounting (see fig.1)	1650
PAL-16	Pole(I) supplied with angled mounting (see fig.1)	1050

POLE FOR MOUNTING
FLFE, EXEN, EVF..E, EVFD, EXEL, FLF, AVN LIGHTING FIXTURES

REB 52

1650

Ø1 1/2"

30°

REM 75

r=500

Ø2 1/2"

2350

Ø20 hole and 3/4" sleeve
Welded EM-2

950

Ø8 ground screw
+ washer + nut

350

Welded M12 bolt
with locknut
and elastic washer

350
300
30
140
200
80
115   120   115
30
10
30

M12

50

150

r=25

4 x bolts complete with
locknut and elastic washer
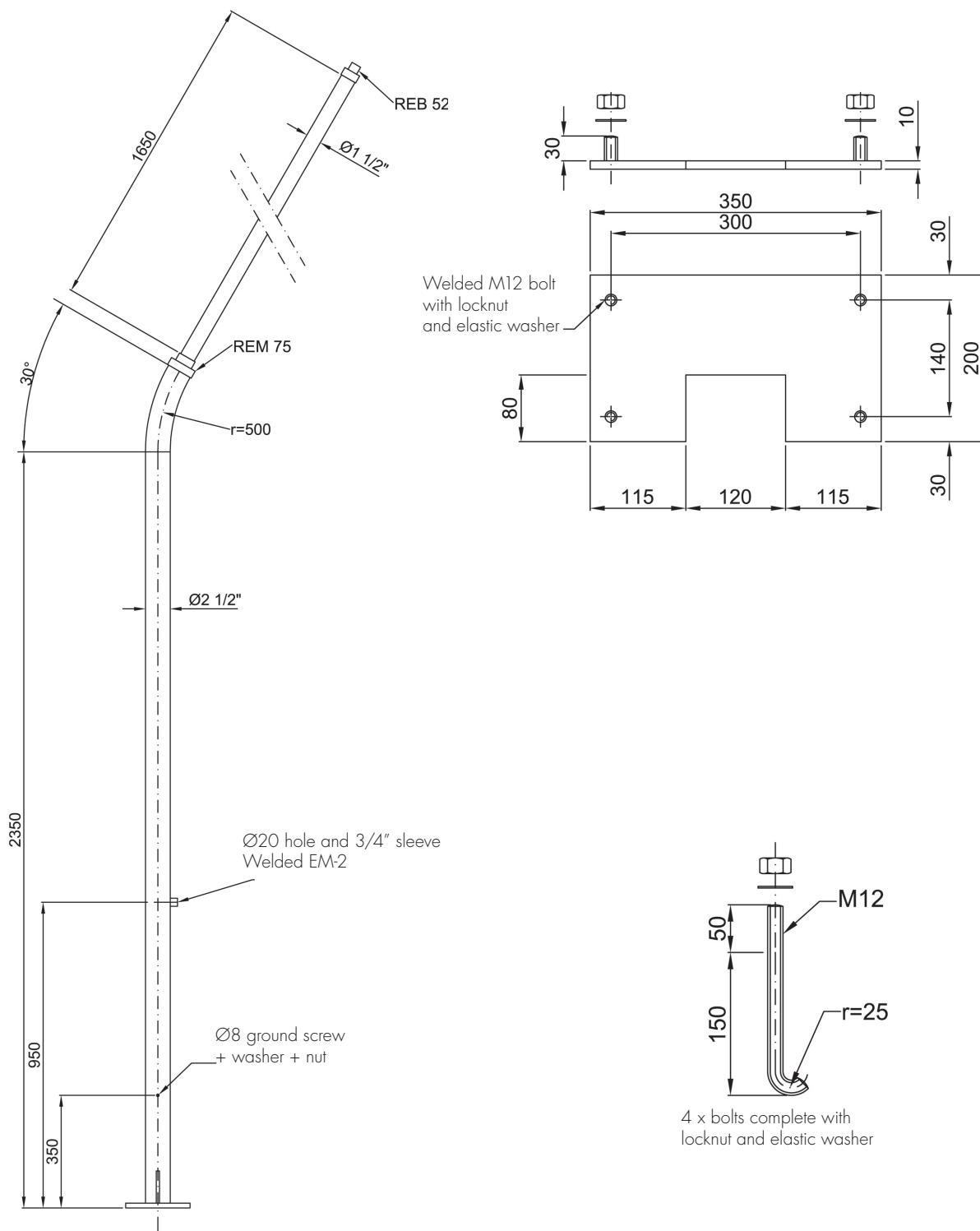
Dimensions in mm

CODE	DESCRIPTION
PAL-11	Pole supplied with welded plate and bolts
PAL-12	Pole supplied with welded plate and baseplate

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POLE FOR MOUNTING
FLFE, EXEN, EVF..E, EVFD, EXEL, FLF, AVN LIGHTING FIXTURES

(1)

- REB 52
- Ø1 1/2"
- 1650
- 30°
- REM 75
- r=500
- Ø2 1/2"
- 2350
- Ø20 hole and 3/4" sleeve Welded EM-2
- 950
- 350
- Ø8 ground screw + washer + nut

(2)

- REB 52
- Ø1 1/2"
- 1650
- 30°
- REM 75
- r=500
- Ø2 1/2"
- 2700
- Ø20 hole and 3/4" sleeve Welded EM-2
- 1300
- Ø8 ground screw + washer + nut
- 700

Dimensions in mm

(3)

- 200
- 30
- 140
- 30
- Welded
- 30
- 10
- 200
- 140
- 30
- 65
- 70
- 65
- 14
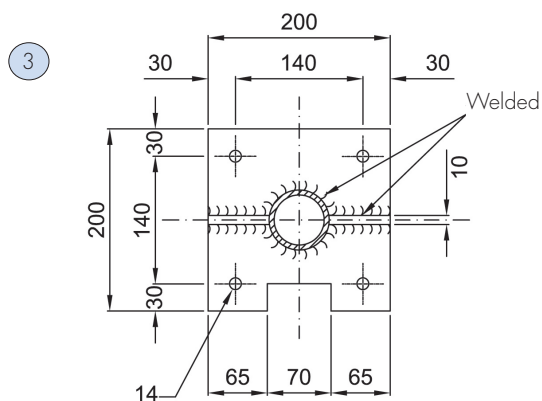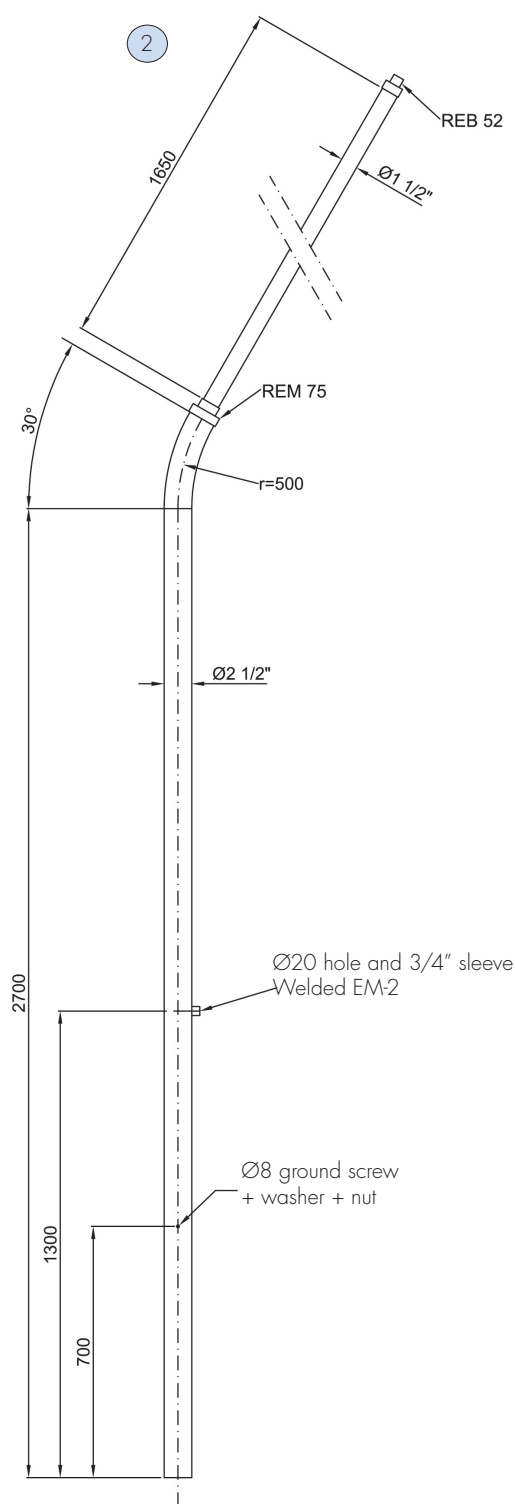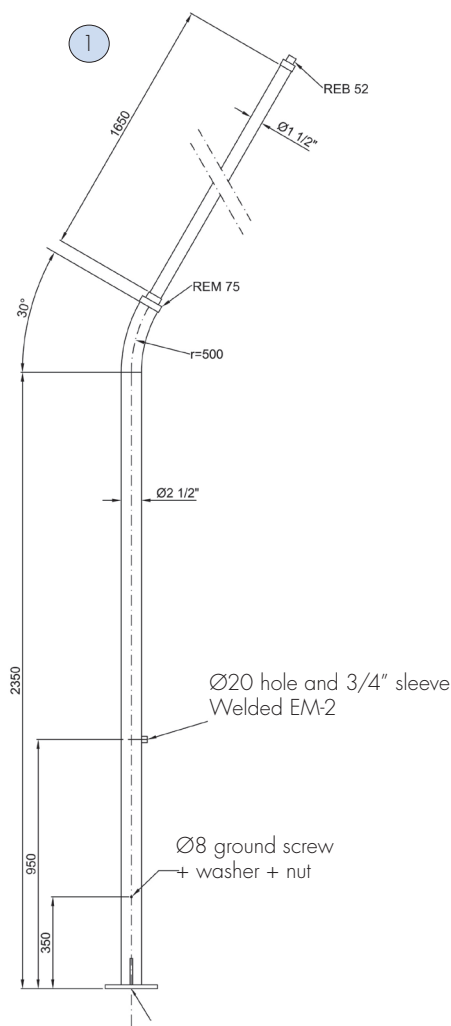
CODE	DESCRIPTION
PAL-13	Pole supplied with welded plate and baseplate (see fig.1-3)
PAL-14	Pole (see fig.2)

XLF

- **Zones 1, 2, 21, 22**
- **Obstruction warnings**
- **Stroboscopic lights**
- **Single or double fixtures**
- **Low wind resistance**

4 Joule shock resistant borosilicate glass globe

Fixture without Fresnel lens

Painted aluminium body

XLF series XENON obstruction lighting fixtures

XLF series Xenon obstruction lighting fixtures are ideal for chimneys, towers, smokestacks, bell towers, buildings, cranes, bridges, radio/television masts, cable car and power line pylons, wind turbines, radar and telecommunication antennas and specifically for use in the petrochemical and oil industries. Their small size, light weight, ease of installation and robustness mean that XLF series lights do not deteriorate over time especially with exposure in salty environments. They are also resistant to the wind and the deposit of industrial dusts thanks to the low profile and aerodynamic properties of the body.

Application sectors:

| Oil refineries | Chemical and petrochemical plants | Onshore plants | Offshore plants | Oil loading/ unloading jetties | Combustible liquid depots | Perimeter lighting | 100% Cortem product |

CERTIFICATION DATA

Classification:	Group II	Category 2GD		

Installazione: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		

Marking:	CE 0722 ⟨Ex⟩ II 2GD Ex d IIC T5 Gb; Ex tb IIIC Db IP66

Certification:	ATEX CESI 03 ATEX 046			
	IEC Ex IECEx CES 12.0020	All IEC Ex certification data can be downloaded at www.cortemgroup.com		

Standards:
CENELEC EN 60079-0: 2009, EN 60079-1: 2007, EN 60079-7: 2007, EN 60079-31: 2009, EN 60598-1:2008+A11:2009, EN 60598-2-1:1989 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:	100°C (T5)			

Ambient temperature:	-20°C +55°C	Special -50°C +55°C		

Degree of protection:	IP66

XLF series XENON obstruction lighting fixtures

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy
Globe:	Shock and temperature resistant borosilicate glass sealed with aluminium shade ring
Coloured diffuser:	Polycarbonate
Gaskets:	Silicone acid/hydrocarbon resistant
Mounting:	See "XLF-1-2 series dimensional drawings"
Bolts and screws:	Stainless steel
Entries:	4 x 3/4" NPT threaded entries.
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 holder:	E27 ceramic
Lamp:	Stroboscopic (about 30 flash/min.) 6J or 16J Xenon with electronic module
	(for further information see "EC SERIES ELECTRONIC MODULE CHARACTERISTICS")
Rated voltage:	24 VAC/DC, 110 VAC, 230 VAC
Rated frequency:	50/60 Hz
Connection:	Direct to lamp holder L, N, Pe. Max section 4mm^2
	The double lighting fixtures (XLF-....2) comes supplied wired and sealed up to the junction box, the connection is made to the terminal board inside the terminal box 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

Model for conduit or pendant mounting (code: XLFS-1V1101)

Special markings in ⟨Ex⟩ II 2GD Ex de IIC T5 Gb; Ex tb IIIC T.. Db IP66 . (code: XLFE-1V1101)

Ex or IP66 protected control panel with electronic modules

GAS UNI ISO 7/1 thread

Other diffuser colours: orange, yellow, green and blue

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XLF series selection chart

Code	Lamp	Colour	Lamp power xenon	Power supply	Weight Kg	mm
XLF-10241	1	NO DIFFUSER	6 Joule	24V Ac Dc	2,15	160x150x330
XLF-10242	2	NO DIFFUSER	6 Joule	24V Ac Dc	5,00	440x175x425
XLF-11101	1	NO DIFFUSER	6 Joule	110V Ac	2,15	160x150x330
XLF-11102	2	NO DIFFUSER	6 Joule	110V Ac	5,00	440x175x425
XLF-12301	1	NO DIFFUSER	6 Joule	230V Ac	2,15	160x150x330
XLF-12302	2	NO DIFFUSER	6 Joule	230V Ac	5,00	440x175x425
XLF-1R0241	1	RED	6 Joule	24V Ac Dc	2,40	160x150x330
XLF-1R0242	2	RED	6 Joule	24V Ac Dc	5,00	440x175x425
XLF-1R1101	1	RED	6 Joule	110V Ac	2,40	160x150x330
XLF-1R1102	2	RED	6 Joule	110V Ac	5,00	440x175x425
XLF-1R2301	1	RED	6 Joule	230V Ac	2,40	160x150x330
XLF-1R2302	2	RED	6 Joule	230V Ac	5,00	440x175x425
XLF-20241	1	NO DIFFUSER	16 Joule	24V Ac Dc	2,15	160x150x330
XLF-20242	2	NO DIFFUSER	16 Joule	24V Ac Dc	5,00	440x175x425
XLF-21101	1	NO DIFFUSER	16 Joule	110V Ac	2,15	160x150x330
XLF-21102	2	NO DIFFUSER	16 Joule	110V Ac	5,00	440x175x425
XLF-22301	1	NO DIFFUSER	16 Joule	230V Ac	2,15	160x150x330
XLF-22302	2	NO DIFFUSER	16 Joule	230V Ac	5,00	440x175x425
XLF-2R0241	1	RED	16 Joule	24V Ac Dc	2,40	160x150x330
XLF-2R0242	2	RED	16 Joule	24V Ac Dc	5,00	440x175x425
XLF-2R1101	1	RED	16 Joule	110V Ac	2,40	160x150x330
XLF-2R1102	2	RED	16 Joule	110V Ac	5,00	440x175x425
XLF-2R2301	1	RED	16 Joule	230V Ac	2,40	160x150x330
XLF-2R2302	2	RED	16 Joule	230V Ac	5,00	440x175x425

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XLF-...
Structure mounting
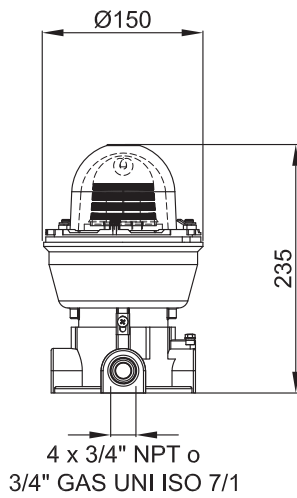
XLFS-...
Conduit or
pendant mounting

XLF-...2
Double obstuction
lighting fixture

Ø150

235

4 x 3/4" NPT o
3/4" GAS UNI ISO 7/1

Ø150

225

3/4" NPT o
3/4" GAS UNI ISO 7/1

~440

270

3/4" NPT o
3/4" GAS UNI ISO 7/1

10

82

82
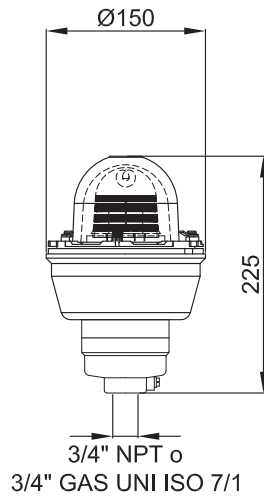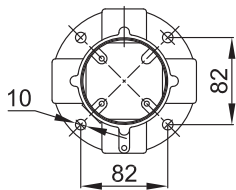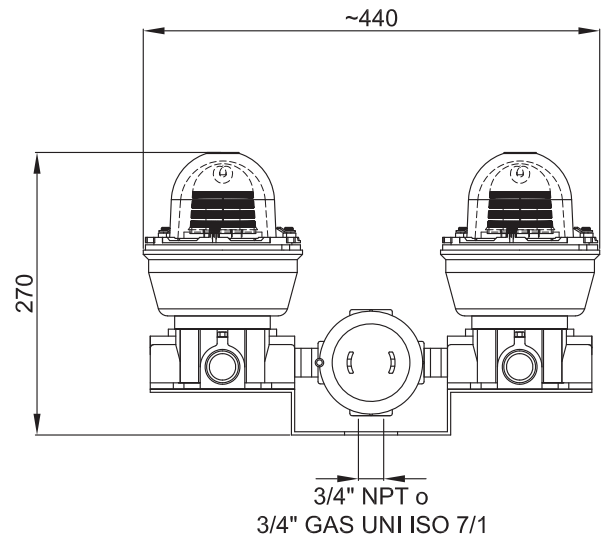
Dimensions in mm
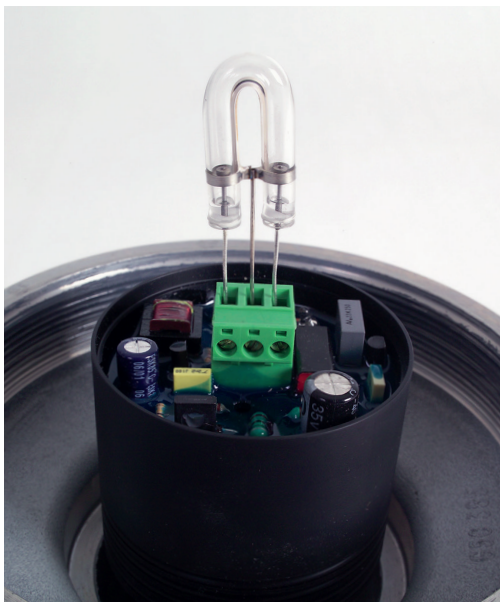
Close up of 6J Xenon lamp

Close up of 16J Xenon lamp

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Type of lighting fixture +
XLF-1R1101

Cable gland
NEVB2NB

+ other ...see key

ACCESSORY

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Globe with shade ring		Borosilicate glass globe Aluminium ring shade ring	**G50-0389FCM**	
	Polycarbonate diffuser	XLF-..A...	Orange	**TRASP/A**	
		XLF-..R...	Red	**TRASP/R**	
		XLF-..V...	Green	**TRASP/V**	
		XLF-..G...	Yellow	**TRASP/G**	
		XLF-..B...	Blue	**TRASP/BL**	
	O-ring		Material: silicone	**OR-4512SH70S**	
	Ceramic lamp holder	E27	250V 4A	**PORT E-27/X**	
	Structure mounting		4 x 3/4" entries	**G-0214**	
	Pendant mounting		1 x 3/4" entry	**G-0213**	
	Stroboscopic light with integrated module	6 Joule	24V ac/dc	**EC-06/624V**	
		16 Joule		**EC-06/24V**	
		6 Joule	110-230V ac/dc	**EC-06/6**	
		16 Joule	230V ac	**EC-06**	
		16 Joule	110V ac	**EC-06/110V**	
	Protective cage only for XLF without Fresnel		Material: Electro-polished stainless steel	**G50-0417**	
	Cable gland		For models and codes, visit www.cortemgroup.com	**NAVB2NB NEVB2NB**	

CODE	DESCRIPTION	GRAPH	VOLTAGE
EC-06/110V	Stroboscopic light 110V 16J	1	110 V ac/dc
EC-06	Stroboscopic light 230V ac 16J	2	230 V ac/dc
EC-06/6	Stroboscopic light 110-230V ac/dc 6J	3 - 4	110-255 V ac/dc
EC-06/624V	Stroboscopic light 24V ac/dc 6J	5	24 V ac/dc

The waveforms have been designed to measure each module's exact consumption.
Tests have been carried out using a resistance of 1 Ohm connected in series with the power supply so as to make the voltage conversion immediate.

GRAPH 1 - 110 Vac
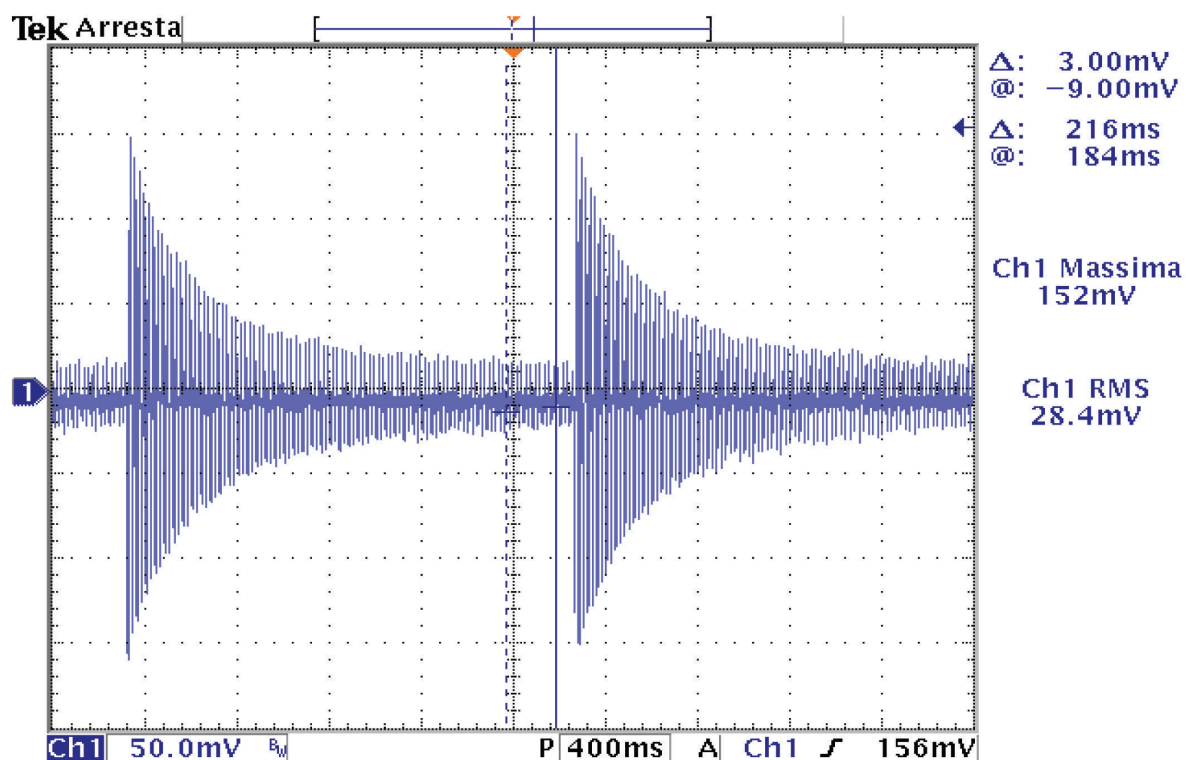
GRAPH 2 - 230 Vac
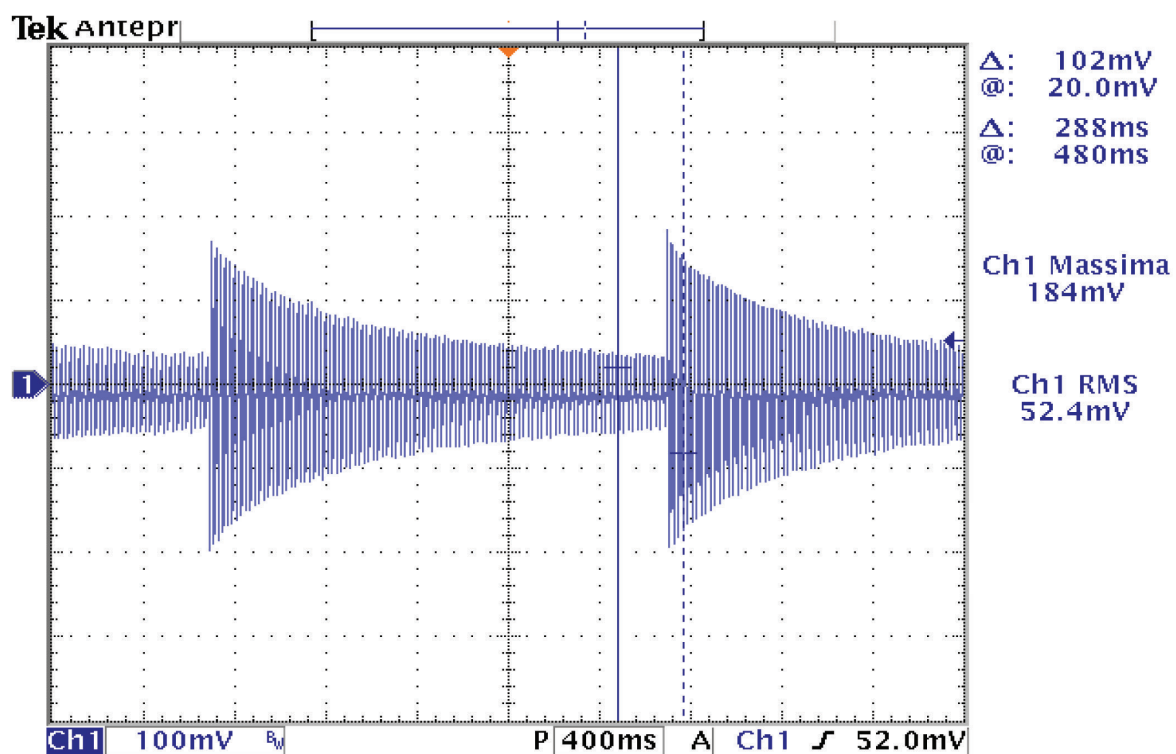
Δ:	102mV
@:	20.0mV
Δ:	288ms
@:	480ms

Ch1 Massima
184mV

Ch1 RMS
52.4mV

Ch1   100mV   Bw   P 400ms   A Ch1 ∫ 52.0mV

GRAPH 3 - 110 Vac

Δ:	6.00mV
@:	−8.00mV
Δ:	2.40ms
@:	2.08ms

Ch1 Massima
184mV

Ch1 RMS
56.6mV

Ch1   100mV   Bw   P 4.00ms   A Ch1 ∫ 52.0mV

T 50.00 %

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GRAPH 4 - 255 Vac

Tek Arresta

Δ: 1.00mV
@: −6.00mV

Δ: 1.44ms
@: −240μs

Ch1 Massima
128mV

Ch1 RMS
32.5mV

Ch1 50.0mV Bw   P 2.00ms   A Ch1 ʃ 52.0mV

T 63.20 %

GRAPH 5 - 24 Vac

Tek Arresta

Δ: 16.0mV
@: −12.0mV

Δ: 3.72ms
@:   3.56ms

Ch1 Massima
380mV

Ch1 RMS
167mV

Ch1 200mV Bw   P 2.00ms   A Ch1 ʃ 52.0mV

T 50.00 %

CORTEM GROUP®
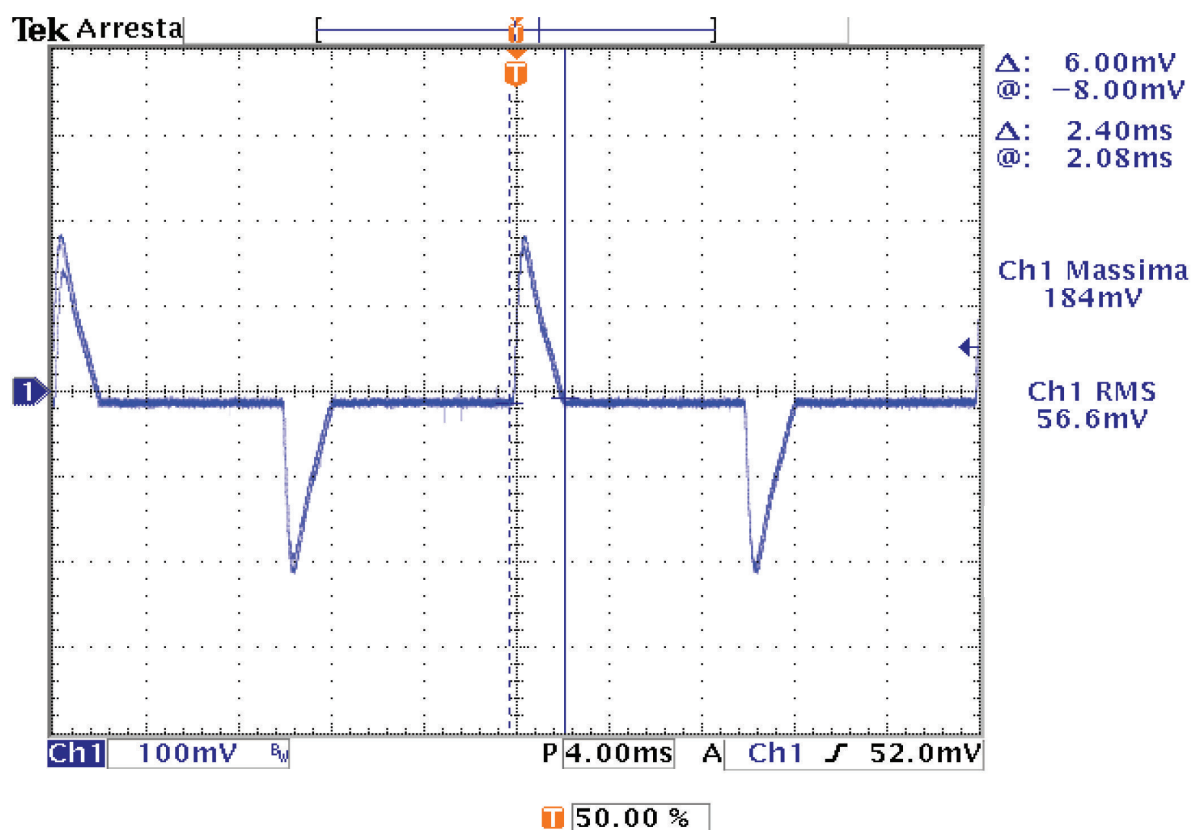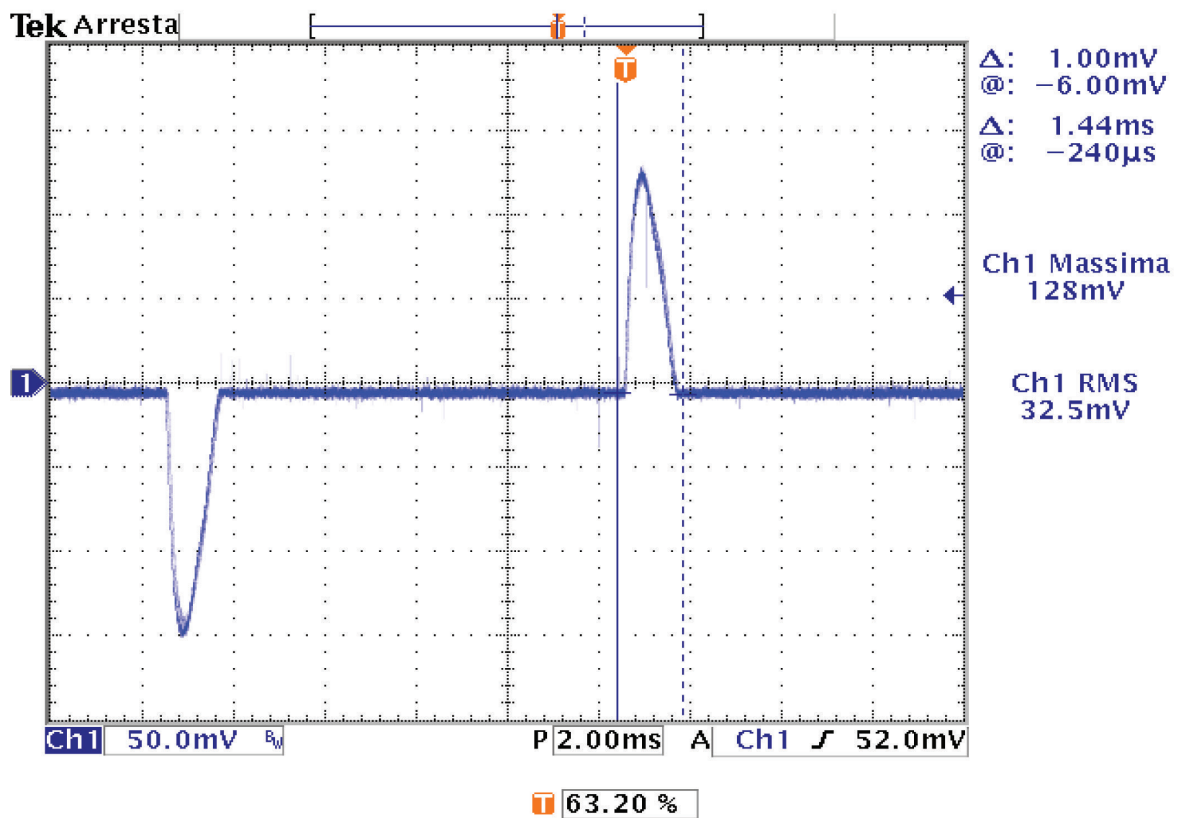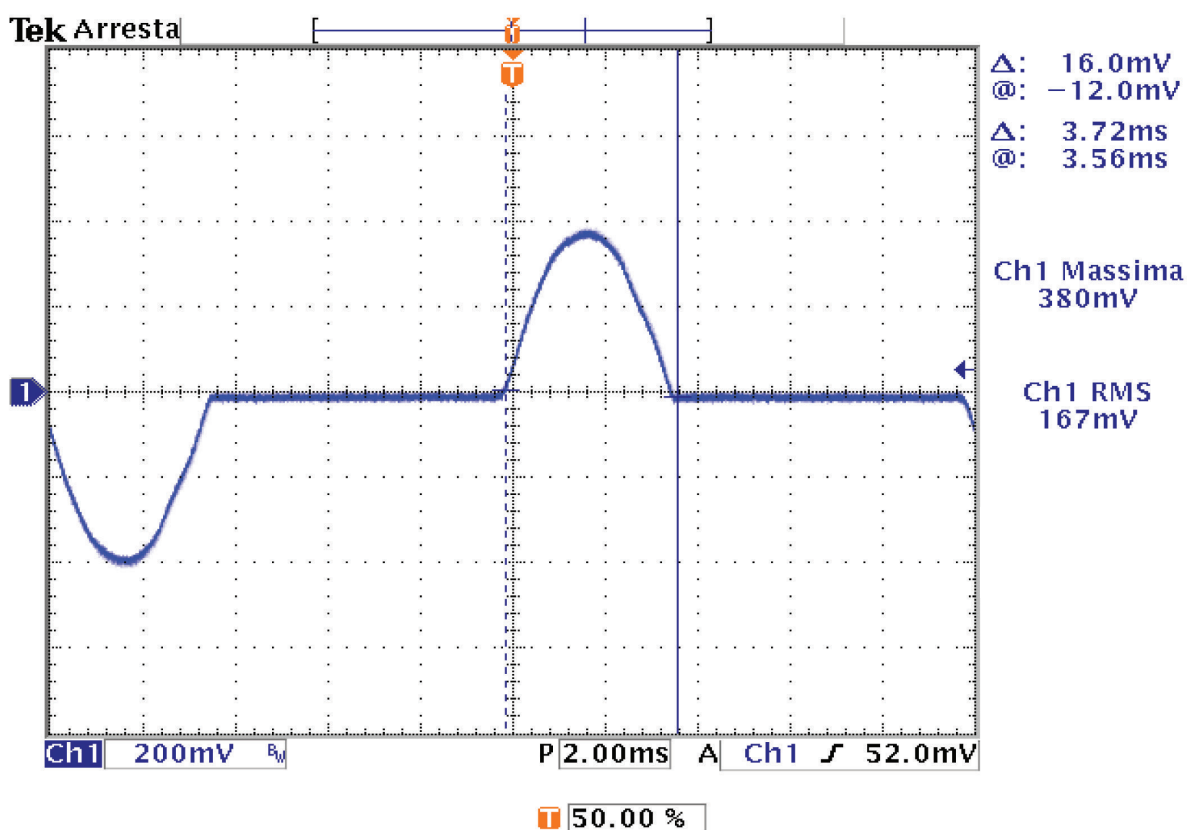
Example of XLF obstruction lighting fixture and ETS series siren installation

n	Description	Code
1	Obstruction lighting fixture	XLF-2R2301
2	Junction box	ST-26.1V
3	Rotating electromechanical siren	ETS60/109DB230V
4	Mounting plate	
5	Nipple	NP2G
6	3-piece union	RMF2G
7	Sealing fittings	EYS2
8	Sealed nipple	NPSF2
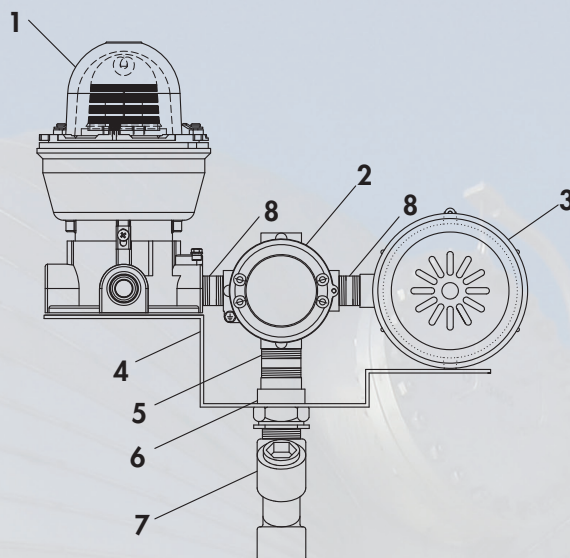
Example of XLF obstruction lighting fixture and ETH series siren installation

n	Descrizione	Code
1	Obstruction lighting fixture	XLF-2R2301
2	Junction box	ST-26.1V
3	Siren	ETS60/109DB230V
4	Mounting plate	
5	Nipple	NP2G
6	3-piece union	RMF2G
7	Sealing fittings	EYS2
8	Sealed nipple	NPSF2
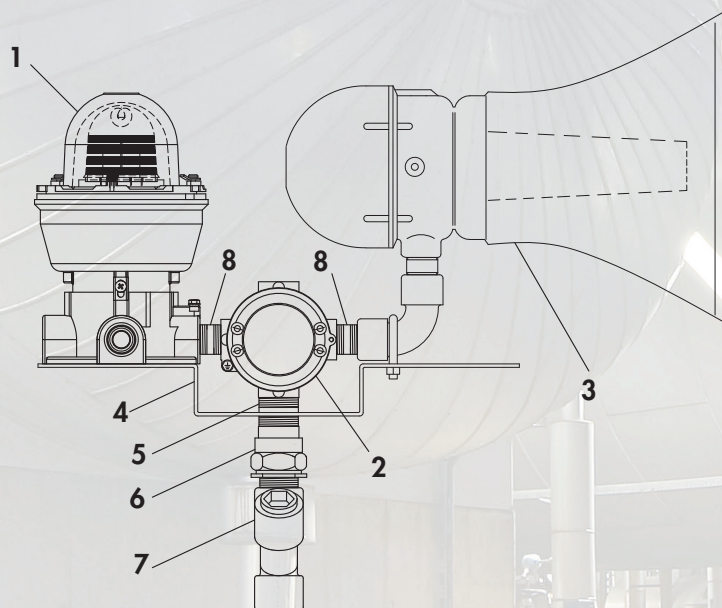
Features of EC series electronic modules.. for XLF

- **EC-05** Double XLF power supply circuit in which a 16J stroboscopic lamp is the main light and the other lamp is a spare.
  Power supply: 230VAC
  Stroboscopic power: 16 J

- **EC-10** Power supply unit for EC-... with 230 VAC power supply.
  This unit has both automatic and manual controls as well as a test button.

- **EC-13** Fixed synchroniser that turns on all the stroboscopic lamps wired with a 230 VAC power supply at the same time.

ETH

- Zones 1, 2, 21, 22
- Max. 110 dB
- Continuous operation
- Ex d protection

Safety wire connecting body and cover

Support bracket mounting

Connection entry

CORTEM GROUP®

ETH series acoustic signals

ETH series sirens are used in closed environments where a warning system is needed and where the atmosphere is potentially explosive. ETH sirens are multi-functional. The five different types of sound can be programmed to provide warning in the event of danger or evacuation in the case of fire.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Onshore plants | Waste water purification | Low temperatures | Combustible liquid depots | Transit areas | Analysis laboratories

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)	ETH12	
	zone 1 - zone 2 (Gas)		ETH20	
Marking:	CE ⟨Ex⟩ II 2 GD Ex d IIC T6 Ex tD A21 IP65		ETH12	
	CE ⟨Ex⟩ II 2 G Ex d IIC - IIB+H2 T4 Gb IP6x		ETH20	
Certification:	ATEX INERIS 02 ATEX 0074X		ETH12	
	ATEX ISSeP 11 ATEX 040X		ETH20	
Standards:	CENELEC EN 60079-0: 2006/09, EN 60079-1: 2004/07, EN 61241-0: 2006, EN 61241-1: 2004, EN 60079-31: 2009 and EUROPEAN DIRECTIVE 2014/34/UE			
Class temperature:	85°C (T6)	135°C (T4)	200°C (T3)	
Ambient temperature:	-20°C +55°C	ETH12		
	-50°C +60°C	ETH20		

MECHANICAL FEATURES

Body and cover:	Low copper content aluminium alloy
Safety wire:	Steel
Bell housing:	Chrome coloured ABS plastic
Gasket:	Acid, hydrocarbon and high temperature resistant silicone
Bolts and screws:	Stainless steel
Mounting:	Direct to 3/4" entry or with mounting bracket (available on request)
Entries:	1 x 3/4" Rc UNI ISO 7/1
Coating:	Epoxy coating Ral 7000 (squirrel grey)

ELECTRICAL FEATURES

ETH-12 siren

Rated voltage:	12/24 - 48 - 110 - 230 V ac/dc
Frequency:	50/60/0 Hz
Driver impedance:	8 Ω
Operation:	Continuous

ETH-20 siren

Rated voltage:	12/24 - 48 - 110 - 230 V ac/dc
Frequency:	50/60/0 Hz
Driver impedance:	16 Ω
Operation:	Continuous

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: FGAB2BK for armoured cable or FB2BK for non-armoured cable
Adjustable support bracket
Epoxy vinyl coating in different colours
NPT or ISO M25 threads
Body in cast iron EN-GJL-200 or stainless steel AISI 316L

ETH series selection chart

Code	Programmable sounds	Voltage	Rated current	Power input	Sound level Frequency	Db/1m	Weight kg	mm
ETH-12MD/12-24V	32	12 - 24 V ac/dc	0,10 - 0,12 A	7 W	340 - 2000 Hz	109	1,2	230x150x150
ETH-12MD/48VCA	32	48 V ac	0,06 A	7 W	340 - 2000 Hz	107	1,4	230x150x150
ETH-12MD/48VCC	32	48 V dc	0,06 A	7 W	340 - 2000 Hz	107	1,2	230x150x150
ETH-12MD/110VCA	32	110 V ac	0,02 A	7 W	340 - 2000 Hz	109	1,4	230x150x150
ETH-12MD/110VCC	32	110 V dc	0,02 A	7 W	340 - 2000 Hz	109	1,4	230x150x150
ETH-12MD/230VCA	32	230 V ac	0,012 A	7 W	340 - 2000 Hz	109	1,4	230x150x150
ETH-20MD/12-24V	32	12 - 24 V ac/dc	0,10 - 0,12 A	10 W	340 - 2000 Hz	113	3,1	390x280x280
ETH-20MD/48VCA	32	48 V ac	0,06 A	10 W	340 - 2000 Hz	111	3,2	390x280x280
ETH-20MD/48VCC	32	48 V dc	0,06 A	10 W	340 - 2000 Hz	111	3,1	390x280x280
ETH-20MD/110VCA	32	110 V ac	0,02 A	10 W	340 - 2000 Hz	113	3,2	390x280x280
ETH-20MD/110VCC	32	110 V dc	0,02 A	10 W	340 - 2000 Hz	113	3,2	390x280x280
ETH-20MD/230VCA	32	230 V ac	0,012 A	10 W	340 - 2000 Hz	113	3,2	390x280x280

Main sounds
(32 selectable sounds, view safety maintenance and mounting instructions)

TWIN TONE: 440 Hz / 0.4 sec alternated with 554 Hz / 0.1 sec

YELP: Increasing and decreasing scale. Fast from 650 to 1600 Hz

WAIL: Increasing and decreasing scale. Slow from 650 to 1600 Hz

INTERMITTENT: 554 Hz, 1 sec ON - 1 sec OFF

FIXED NOTE: 554 Hz continuous.

DIMENSIONAL DRAWINGS

Dimensions in mm

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Adjustable support bracket	ETH-12	Material: galvanised steel	K-340	
		ETH-20		K-340/1	
	Cable gland		For cable gland models and codes see www.cortemgroup.com	NAVB2B NEVB2B	

CORTEM GROUP®

ETH20MDLOUD

- **Zones 1, 2, 21, 22**
- **Output from 100 dB to 112 dB**
- **Ex d protection**
- **IP66**

Entry for connection

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ETH20MDLOU series Loudspeakers

The international standards for safety in industrial environments establish the mandatory installation of suitable audible warning device that can be activated in case of alarm, emergency or danger for the safety of workers which operate at the modern manufacturing processes. The explosion-proof loudspeakers ETH20MDLOUD series have been designed for use in potentially explosive atmospheres in presence of explosive gases and dusts. They have a high degree of protection (IP66) to withstand the harsh off-shore and on-shore plants environmental conditions. They are suitable for connection to standard amplification system with output 100V, to alarm systems and for public address.
The chamber of acoustic compression is separated from the outer atmosphere through a special filter of sintering.
They are equipped with a transformer offering the possibility to adapt and select the sound level according to the real needs of the installation point.

Application sectors:

Oil refineries | Chemical and petrochemical plants | Onshore plants | Waste water purification | Aircraft storage facilities Hangars | Combustible liquid depots | Transit areas | Analysis laboratories

CERTIFICATION DATA

Classification:	Group II	Category 2G		

Installation: EN 60079.14	zone 1 - zone 2 (Gas)			

Marking:	CE $\langle Ex \rangle$ II 2 G - Ex db IIB+H$_2$ T5/T6 Gb - Ex tb IIIC T85°C/T100°C Db IP66

Certification:	ATEX INERIS 09 ATEX 0024X			

Standards:	CENELEC EN 60079-0: 2012, EN 60079-1:2014, EN 60079-31:2014 y a la DIRECTIVA EUROPEA 2014/34/UE

Class temperature:	85°C (T6)	100°C (T5)		

Ambient temperature:	Standard -20°C +40°C	Special -20°C +60°C		

Degree of protection:	IP66

This equipment can be used in an environment containing explosive atmosphere and with the presence of hydrogen.

ETH20MDLOUD series Loudspeaker

MECHANICAL FEATURES

Body, cover and horn cone:	Light alluminium alloy
Gasket:	EPDM acid, hydrocarbon resistant
Bolts and screws:	Stainless steel
Mounting:	Adjustable galvanized steel bracket
Entries:	1 x 3/4" Rc UNI ISO 7/1 for entries with conduit or cable gland
Coating:	Epoxy coating Ral 7000 (Squirrel grey)

ELECTICAL FEATURES

Rated voltage:	100 V			
Audio line:	16 Ohm			
Output:	6 W	12 W	20 W	25 W
Sound level:	100 ÷ 102 dB	104 ÷ 106 dB	107 ÷ 108 dB	109 ÷ 112 dB
Frequency range:	650 ÷ 10000 Hz	450 ÷ 9000 Hz	400 ÷ 9000 Hz	350 ÷ 10000 Hz

Rated voltage:	24 - 48 Vdc (Loudspeaker with incorporate amplifier)			
Audio line:	8 Ohm			
Output:	1,57 W	5,4 W	21,5 W	30,4 W
Sound level:	20 dB	26 dB	32 dB	36 dB

Class D audio amplifier ETH20MDLOUD24VDC 24 - 48Vdc

Input signal: 0dB at 600ohm
Input sensitivity: 40mV / 150Kohm
Power supply: from 24Vdc to 48Vdc
Absorption at maximum power: 0,8A@48V - 1,2A@24Vdc
Piloting: 8ohm loudspeakers
Output power: 30W
Total harmonic distortion + noise: (f= 1Khz, PO= 20W) 0,2%
Signal report / noise: (f= 1Khz, Gain= 20dB) 102dB
Frequency response: from 20Hz to 20Khz

CORTEM GROUP®

ETH20MDLOUD series selection chart

Code	Rated voltage	Output	Sound level		Weight kg	mm
			Frequency level	Db (1mt)		
ETH20MDLOUD/TR	100 V	6W-12W-20W-25W	650 - 10000 Hz	100 - 112	3,5	
ETH20MDLOUD24VDC	24 - 48 Vdc	1,57W-5,4W-21,5W-30,4W	20 - 20000 Hz	112	3,5	

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Mounting bracket in stainless steel
Cable gland: NEVB2B for armoured cable or NAVB2B for non-armoured cable
Epoxy vinyl coating in different colours
Special execution Ex 2GD Ex d IIC T6/T5 Gb
Different threads
Horn cone in anodized aluminium

DIMENSIONAL DRAWING

444
140
Ø270
Ø 3/4" ISO 7/1
35 35 Ø9
Dimensions in mm

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Cablegland		For models and codes, visit www.cortemgroup.com	NAVB2B NEVB2B	

ETS

- **Zones 1, 2, 21, 22**
- **Ex d protection**
- **Max. 114 dB**

Support bracket mounting

Chrome coloured ABS plastic protection

Painted aluminium body

CORTEM GROUP®

ETS series Rotating electromechanical siren

ETS electromechanical sirens are used in potentially explosive environments such as oil refineries and chemical and petrochemical plants or in areas where flammable dusts or substances are present. Given the high level of sound they emit, they are used outdoors in industrial environments where there is significant background noise. They are used for different applications such as fire alarms, safety alarms, for emergencies and to signal plant evacuation and intrusion.

Application sectors:

| Oil refineries | Chemical and petrochemical plants | Onshore plants | Waste water purification | Offshore plants | Combustible liquid depots | Gas plants | Oil loading/ unloading jetties |
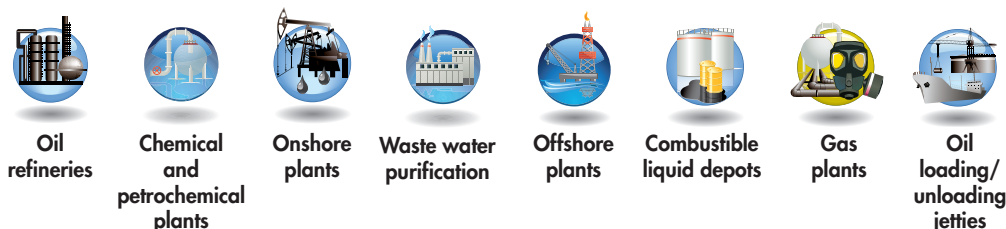
CERTIFICATION DATA

Classification:	Group	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE ⟨Ex⟩ II 2 GD Ex d IIC T6 Ex tD A21 IP65			
Certification:	ATEX INERIS 02 ATEX 0001			
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2004, EN 61241-0: 2006, EN 61241-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE			
Class temperature:	85°C (T6)			
Ambient temperature:	-20°C +40°C			
Degree of protection:	IP65			

CORTEM GROUP®

ETS series Rotating electromechanical siren

MECHANICAL FEATURES

Body and cover:	Low copper content aluminium alloy
Protection:	Chrome coloured AaaaBS plastic
Gasket:	Acid, hydrocarbon and high temperature resistant silicone
Bolts and screws:	Stainless steel
Mounting:	Direct to 3/4" entry or with mounting bracket (available on request)
Entries:	1 x 3/4" Rc UNI ISO 7/1
Coating:	Epoxy vinyl coating Ral 7000 (squirrel grey)

ELECTRICAL FEATURES

ETS60/109 signaller

Rated voltage:	Vac/dc ±10%	12	24	48	110	230
Frequency:	Hz	50/60	50/60	50/60	50/60	50/60
Current:	A	10,6	6,1	3,4	1,1	0,6
Operation:	Intermittent					

ETS60/114 signaller

Rated voltage:	Vac/dc ±10%	12	24	115	230
Frequency:	Hz	50/60	50/60	50/60	50/60
Current:	A	11,5	5,9	1,6	0,9
Operation:	Intermittent				

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: NEVB2B for armoured cable or NAVB2B for non-armoured cable
Adjustable support bracket
Epoxy vinyl coating in different colours
NPT or ISO M25 threads
Different rated voltages

CORTEM GROUP®

ETS series selection chart

Code	Intermittent operation	Voltage	Sound level		Weight kg	mm
			Frequency	Db/m		
ETS60/109DB12V	2 Min. ON / 5 Min. OFF	12 V Ac/Dc	1150 Hz	109	2,8	230x140x140
ETS60/109DB24V	2 Min. ON / 5 Min. OFF	24 V Ac/Dc	1250 Hz	109	2,8	230x140x140
ETS60/109DB48V	2 Min. ON / 5 Min. OFF	48 V Ac/Dc	1300 Hz	109	2,8	230x140x140
ETS60/109DB115V	2 Min. ON / 5 Min. OFF	110 V Ac	1300 Hz	109	2,8	230x140x140
ETS60/109DB230V	2 Min. ON / 5 Min. OFF	230 V Ac	1300 Hz	109	2,8	230x140x140
ETS60/114DB12V	2 Min. ON / 5 Min. OFF	12 V Ac/Dc	650 Hz	114	3,4	260x140x140
ETS60/114DB24V	2 Min. ON / 5 Min. OFF	24 V Ac/Dc	650 Hz	114	3,4	260x140x140
ETS60/114DB115V	2 Min. ON / 5 Min. OFF	115 V Ac	650 Hz	114	3,4	260x140x140
ETS60/114DB230V	2 Min. ON / 5 Min. OFF	230 V Ac	650 Hz	114	3,4	260x140x140

DIMENSIONAL DRAWINGS

ETS60/109

218
88
75
Ø 3/4" ISO 7/1
133

ETS60/114

250
88
75
Ø 3/4" ISO 7/1
133

Dimensions in mm
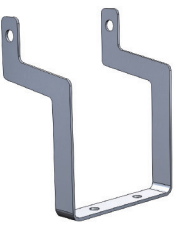
ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Adjustable support bracket	ETS60/109...	Material: galvanised steel	K-340	
		ETS60/114...		K-340/1	
	Cable gland		For cable gland models and codes see www.cortemgroup.com	NAVB2B NEVB2B	

CSCPEA2

- **Zones 1, 2, 21, 22**
- **Emergency alarm button**
- **Suitable for the start of alarm bell or siren**

Body in painted aluminium

Brass hammer

Steel chain
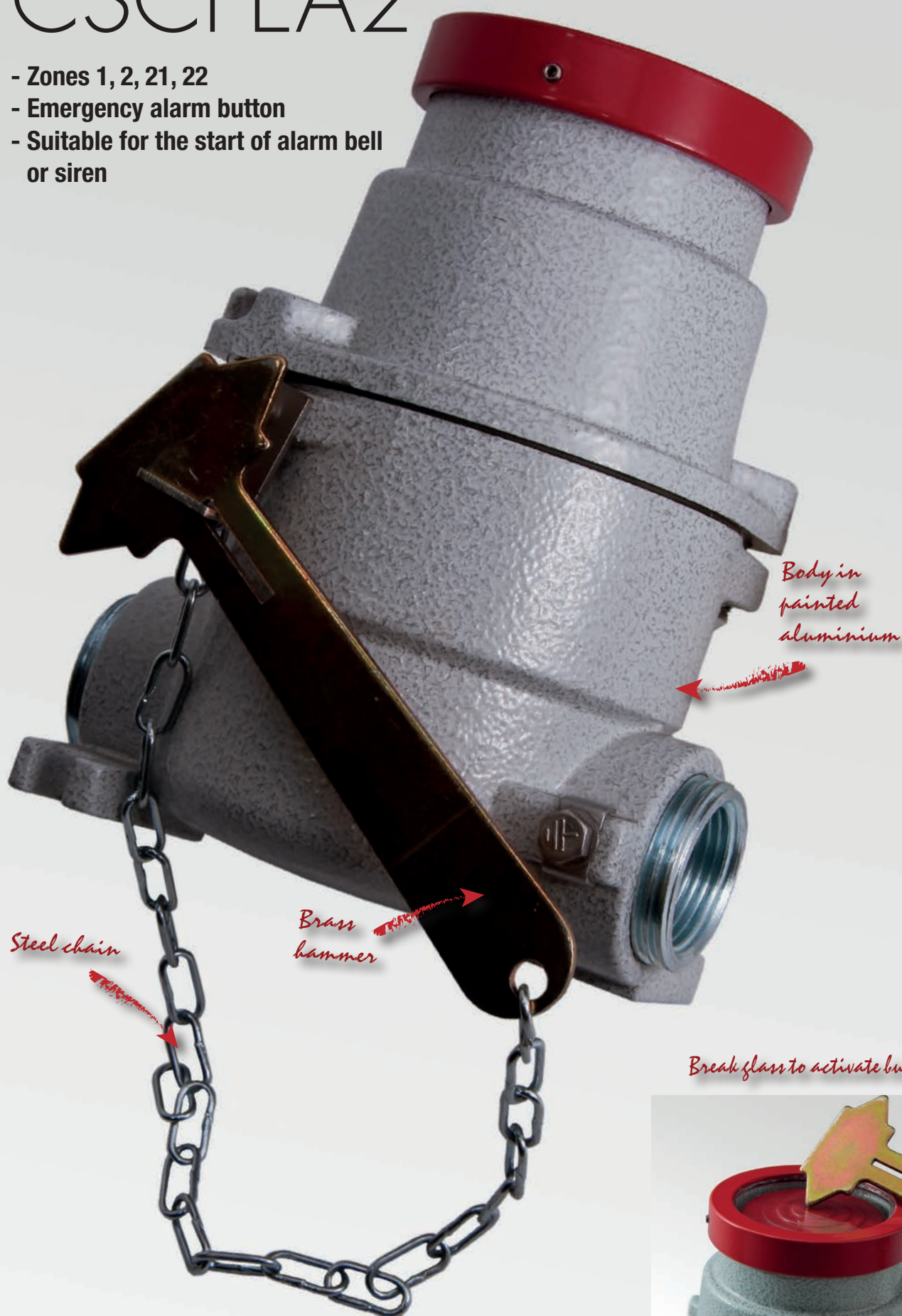
Break glass to activate button

CORTEM GROUP®

CSCPEA2 Emergency alarm button

CSCPEA2 emergency alarm button with its glass protective cover is the ideal solution for setting off audible/visual alarms in the event of danger. The device comes complete with a hammer for breaking the glass. The emergency button is kept pressed by the actual glass. The contacts change when the glass is broken and the button is released automatically.

Application sectors:

Oil refineries	Chemical and petrochemical plants	Onshore plants	Waste water purification	Offshore plants	Combustible liquid depots	Transit areas	Analysis laboratories

CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE ⟨Ex⟩ II 2 GD Ex d IIC T6 Ex tD A21 IP66			
Certification:	ATEX CESI 01 ATEX 092			
	ATEX TSA 06.0009			
	TR CU AVAILABLE	All TR CU certification data can be downloaded at www.cortemgroup.com		
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2007, EN 61241-0: 2006, EN 61241-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2004, IEC60079-1: 2003, IEC61241-0: 2004, IEC 61241-1: 2004			
Class temperature:	85°C (T6)			
Ambient temperature:	Standard -20°C +60°C	Special -50°C +60°C		
Degree of protection:	IP66			

CORTEM GROUP®

CSCPEA2 Emergency alarm button

ORIGINAL PRODUCT

MECHANICAL FEATURES

Body and cover:	Low copper content aluminium alloy
Glass holder ring:	RAL3000 (Fire red) painted aluminium
Glass:	Transparent breakable glass
Hammer:	In brass with steel chain
Emergency button:	Resistant nylon
Gaskets:	Acid/hydrocarbon resistant NBR. For temperatures of -50°C, silicone gasket
Bolts and screws:	Stainless steel
Mounting:	Two 7x9.5 slots
Entries:	2 x 1" ISO 7/1 complete with type RE32G reduction from 1" to 3/4" ISO 7/1
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)

Contacts

Contact operation:	low opening
Connection:	2 x 1.5 mm^2 screw terminals
Torque setting:	0.8...1.2 N.m
Type of screw head:	Grooved, flat Ø 4 mm / Grooved, flat Ø 5.5 mm
	Star headed, Pozidriv No 1 / Star headed, Philips No 1
Contact material:	Silver alloy (Ag/Ni)

ELECTRICAL FEATURES

Rated voltage:	max. 600 V
Rated current:	max. 10 A
Rated frequency:	50/60 Hz
Operating current:	AC-15, A600 : Ue = 600 V Ie = 1.2 A
	AC-15, A600 : Ue = 240 V Ie = 3 A
	AC-15, A600 : Ue = 120 V Ie = 6 A
Board: Std contacts:	1No + 1Nc
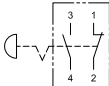
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Cable gland: FGAB2BK for armoured cable or FB2BK for non-armoured cable
Plug: PLG2B
Ex d IIB marking with CSE housing complete with glass protection, hammer and red button M-0429 with 1NO + 1NC contacts (code **CSEPEA-2M**)

CSCPEA2 Emergency alarm button

Code	ø Glass protection mm	Board	Weight kg	mm
CSCPEA2	53		1,1	260x180x130

DIMENSIONAL DRAWINGS

150

22

107

7

89

1" ISO7/1

1" ISO7/1

60

92

Dimensions in mm

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Glass protection		Red painted aluminium ring Non-tempered glass	M-0521	
	Cable gland	3/4" ISO 7/1	std. range cable 12-17	NAVB2B NEVB2B	

LHL

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

*Transparent tube
in polycarbonate*

*LED circuit sealed with
transparent resin*

PVC handle grip

Stainless steel hook

CORTEM GROUP®

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			

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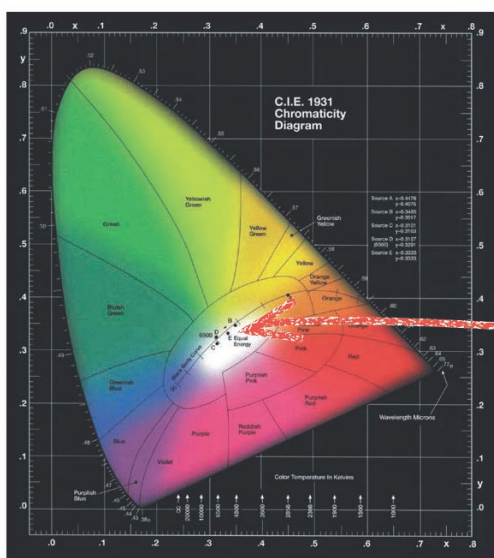
	LHL-10P	LHL-20P
Luminous flux (lm)	790	1580
Colour rendering index (Ra)	80	80
Luminous efficiency (lm/w)	87,78	92,94

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.

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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

R. 12

Ø20

42

L

108

5000

L-3000P, L-5P, L-5RP
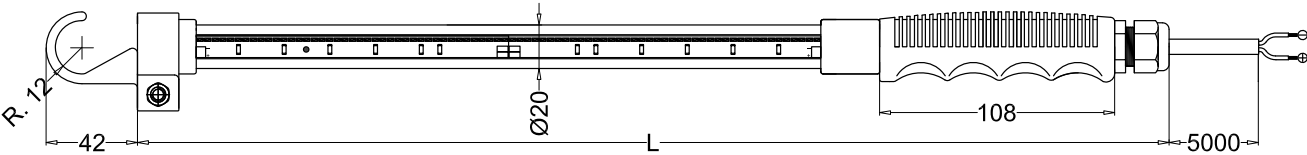
- **High efficiency**
- **Smart energy saving**
- **IP67 protection rating**
- **Exceptional ergonomic design**
- **Zone 0, 1, 2**

L-5RP

L-3000P

L-5P

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

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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			

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L-3000P portable LED torch

Impact resistance and mechanical strength

Battery run time in hours and minutes

Revolutionary optics

0° / 45° / 90° rotating head
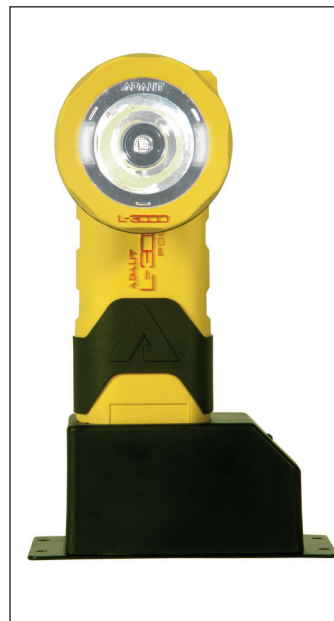
Rechargeable batteries

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

CORTEM GROUP®

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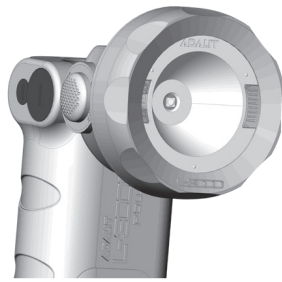
Torch and display switch off
Press button thrice.
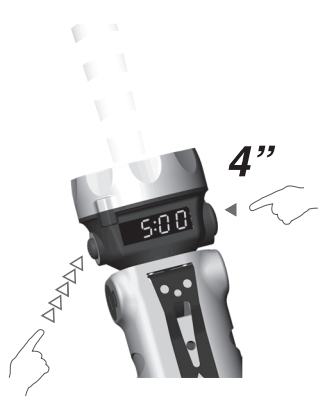
Strobe light
Menu button.
Holding the On|Off button down for four seconds sets the torch to strobe mode. Using the Menu button, you can select up to five different flashing rates.

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.

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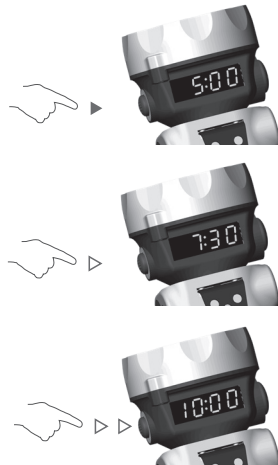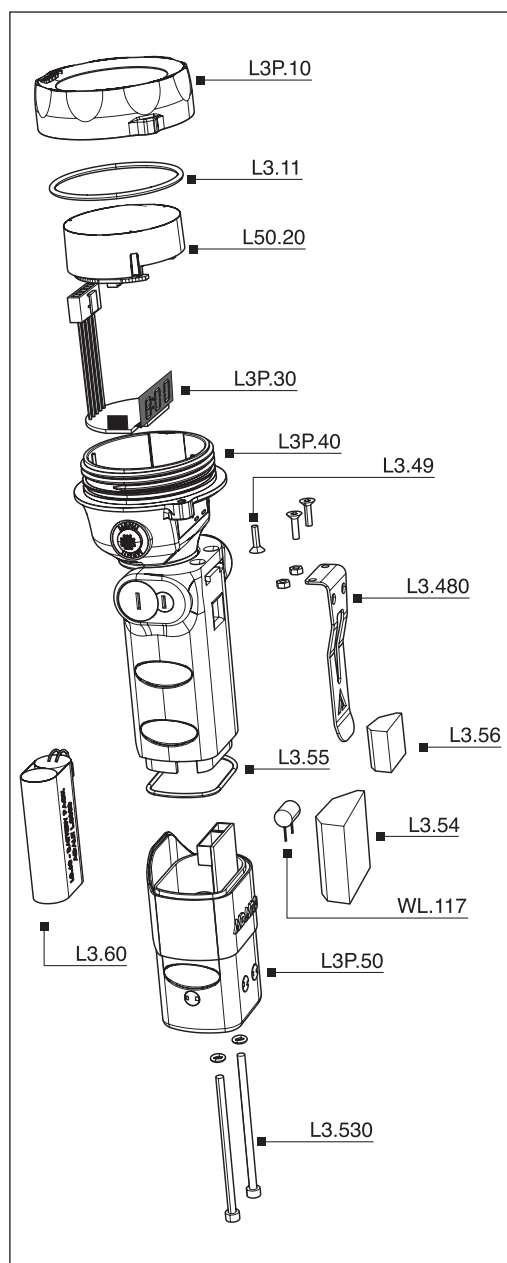
DESCRIPTION	CODE	KEY
Torch end cap with clear lens	**L3P.10**	
End cap O-ring	**L3.11**	
Optics and LED card	**L50.20**	
PCB and display	**L3P.30**	
Complete clip	**L3.480**	SPARE PART
Body O-ring	**L3.55**	
Battery pack	**L3.60**	
Torch body with battery charger PCB	**L3P.50**	

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**	ACCESSORY / SPARE PART
		Voltage 24V	**CV-1000-24V**	
	Battery charger for three torches	Voltage 100-240V	**C-3000**	ACCESSORY / SPARE PART
		Voltage 12/24V	**CV-3000**	
	Battery charger for five torches	Voltage 100-240V	**C-5000**	ACCESSORY / SPARE PART
		Voltage 12/24V	**CV-5000**	
	Holster		**58606580**	ACCESSORY / SPARE PART

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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			

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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

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

Code	Dimensions mm		Light output	Light intensity	Description	Weight kg
	L	Ø				
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

Version L-5P: L5.100P
Version L-5RP: L5.100RP

L5.13

Version L-5P: BAT.AAA (x4)
Version L-5RP: L5.BAT (Li-ion)

L5.300

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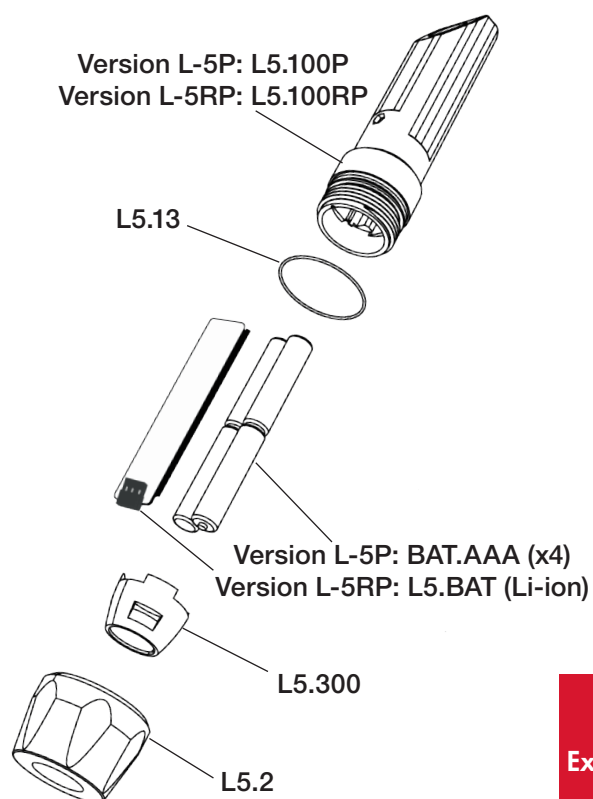
DESCRIPTION	MODEL	CODE	KEY
Torch body	L-5P	**L5.100P**	
	L-5RP	**L5.100RP**	
End cap O-ring		**L5.13**	
Batteries	L-5P	**BATT.AAA (x4)**	
	L-5RP	**L5.BAT**	
LED module		**L5.300**	
Torch end cap with clear lens		**L5.2**	

DON'T FORGET TO ORDER THE ACCESSORIES

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

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

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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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