



2020

Explosion-protected electrical equipment
 QUICK REFERENCE GUIDE



To be sure to be safe.



CORTEM GROUP
To be sure to be safe



Italian Manufacturer

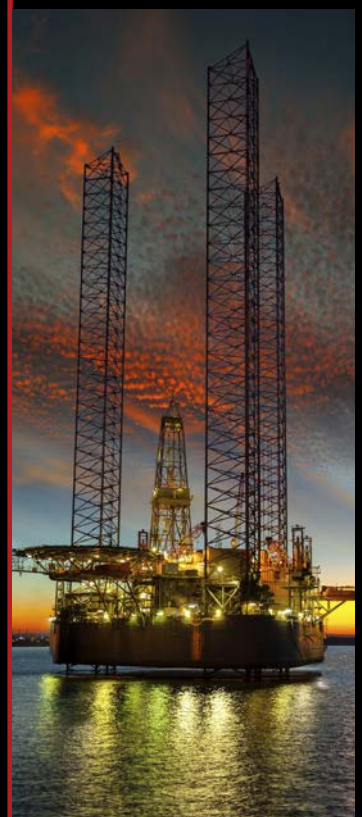
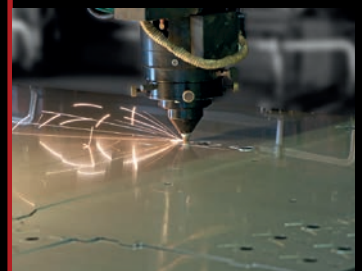
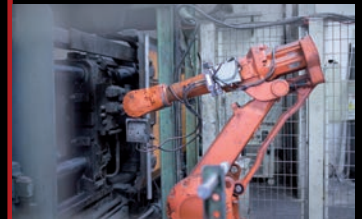
Since 1968, Cortem S.p.A. has been designing and manufacturing explosion-proof and weather-proof electrical equipment addressed to hazardous areas. Thanks to a continuous effort in technical innovation and improvement, it's today a leader in this field, able to provide a whole range of products, meeting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

The peculiarity of the Technology Group Cortem, formed by Cortem, Elfit and Fondisonzo companies, is the experience gained in the Ex field which results not only in the furniture of simple Ex-products, but also in engineered and customized solutions. All our products are designed and manufactured internally according to different methods of protection such as 'Ex d' flameproof, 'Ex e' increased safety, 'Ex de' mixed and 'Ex n' no sparking, using primary aluminium alloys, stainless steels and plastic materials that assure resistance and duration. The aluminum alloy used by Cortem has passed all tests required by EN 60068-2-30 Standard (hot/humid cycles) and EN 60068-2-11 Standard (salt spray test). All our products in aluminium alloy are protected by an polyester coating RAL 7035. This treatment, only provided by Cortem Group, guarantees a durable protection. Cortem production range can be summarized as follows:

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

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

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



SOME OF OUR MAIN CUSTOMERS

ABB S.p.A.
ABU DHABI COMPANY FOR ONSHORE OIL OPERATIONS (ADCO)
ANSALDO
ASIAN ENGINEERING & CONTRACTORS
BASELL POLYOLEFINE
CHINA PETROLEUM ENG & CONSTRUCTION
CHIYODA CORPORATION
DAELIM INDUSTRIAL CO. LTD.
DAEWOO ENGINEERING & CONSTRUCTION
ENEL
ENI REFINING & MARKETING
ENNPI
ERG RAFFINERIE MEDITERRANEE
EXXON MOBIL CORPORATION
FINCANTIERI
GAZPROM
GE NUOVO PIGNONE
GS ENGINEERING & CONSTRUCTION CORP.
HELLENIC PETROLEUM
HYUNDAI ENGINEERING AND CONSTRUCTION CORP.
HYUNDAI HEAVY INDUSTRIES CO.LTD
IRASCO
JGC CORPORATION
KUWAIT NATIONAL PETROLEUM COMPANY
KUWAIT OIL COMPANY
KUWAIT PARAXYLENE PRODUCTION COMPANY (KPPC)
MARIE TECNIMONT
MITSUBISHI HEAVY INDUSTRIES
NATIONAL IRANIAN GAS COMPANY NIGC
NATIONAL IRANIAN OIL COMPANY NIOC
NOVARGI INDUSTRIES
NVENT THERMAL EUROPE
PETROBEL
PETROBRAS
PETROCHEMICAL IND. DES. & ENG. CO - PIDEC
PETROCHEMICAL INDUSTRIES COMPANY (PIC)
PETROFAC INTERNATIONAL
PETROLEUM DEVELOPMENT OMAN (PDO)
QATAR GAS
RAS GAS
SABIC
SAIPEM
SAIMEXICANA S.A. de C.V.
SAMSUNG ENGINEERING & CONSTRUCTION
SAUDI ARAMCO
SATORP
SINOPEC
SK ENGINEERING & CONSTRUCTION
SONATRACH
STAATSOLIE
TECHINT
TECHNIP
TECNICAS REUNIDAS
TECNIMONT
TOYO ENGINEERING CORPORATION
TOTAL
USTAY
WOOD
YPF





PRODUCTS



LED LIGHTING FIXTURES



LED
Lighting Fixtures

EVL SERIES

EVL with LED technology allows to obtain high values of lumen output and the installation at low heights, without the risk of disturbing the operator. EVL series represents the LED alternative for all those areas in which it was usual to use lighting fixtures with discharge lamps of low and medium power more than 400W.

- Four lighting fixtures sizes: EVL-60, EVL-70, EVL-80, EVL-100.
- New supply voltages available (from 12 to 277 V)
- Different powers available for each model with different lumen output (from 1.700 lm up to 21.000 lm)
- New hand-held model
- Available EVL-60B and EVL-70B series floodlights, also as obstruction lighting equipment (EVL-60B/G)

'Ex op is'
safe optical radiation

Group II, Category 2GD

Ex db eb op is IIC T.. Gb
Ex tb op is IIIC T... °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED LIGHTING FIXTURES



LED
Lighting Fixtures

EVML-50

EVML lighting fixtures have been conceived to offer a Low Bay lighting fixture that could replace incandescent equivalents at lower costs. They are suitable for the illumination of small areas in which it's necessary to limit the obstruction such as tunnels, passages, corridors, stairways, perimeter walls and command and control cabins. The model with the side entry meets, at last, some specific installation needs, reducing the overall dimensions (code EVML-50L).

- 'Ex e mb' method of protection.
- New models for low supply voltages
- New EVML-50P hand-held model available
- Available also EVML-50/G series obstruction lighting fixtures a LED plate and a globe of different colours

'Ex op is'
safe optical radiation

Group II, Category 2GD

Ex eb mb op is IIC T.. Gb
Ex tb op is IIIC T... °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

TANK AND VESSEL INSPECTION LED LIGHTING FIXTURES



LED
Lighting Fixtures

EVML-50/O.. SERIES

EVML-50/O.. series lighting fixtures have been designed to illuminate and monitor hazardous materials contained inside tanks and cisterns thanks to a bracket for the coupling with the porthole flange.

- 'Ex e mb' method of protection.
- Four different size of flange.

Group II, Category 2GD

Ex eb mb op is IIC T.. Gb
Ex tb op is IIIC T... °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED LIGHTING FIXTURES



LED
Lighting Fixtures

EVNL SERIES

Suitable for plants in zone 2 and zone 22 keeping cost reductions at the foreground, improving the quality of the product and increasing the lighting solution specifications.

The advantage of the EVNL lighting fixtures is the implementation of the "Ex nR" protection which classifies the equipment as a restricted breathing device. The careful design together with the meticulous choice of materials to seal the lighting fixture limits the entry of flammable gases, vapours or mists during normal operation of the lighting fixture.

- LED lighting system "COB" (ChipOnBoard).
- Four lighting fixtures sizes: EVNL-60, EVNL-70, EVNL-80, EVNL-100.
- High efficiency electronic ballast multi voltage.

Group II, Category 3GD

Ex nr IIC T.. Gc - Ex tc IIC T... °C Db

IP66

Zone 2-22

Low copper content aluminium alloy

LED LIGHTING FIXTURES AND FLOODLIGHTS



LED
Lighting Fixtures

EVNL-B SERIES

The advantage of the EVNL-B lighting fixtures is the implementation of the "Ex nR" protection combined with the "Ex op is" which classifies the equipment as a restricted breathing device with certified optical safety. The EVNL-B series can be supplied with 10°, 20° and 40° optics (60° and 80° optics are also available for the EVNL-60B series) fitted directly on the LED board, which modify the photometry allowing different concentrations of the light beam. An advantage provided by the LED floodlights of the EVNL-B series is the assurance that lighting will never fail. In fact, if one LED stops working, the others will continue.

- Heat dissipation body which guarantees the LED plate long duration.
- As floodlights, the LED plate can be accompanied by an optics that vary the photometry.
- High efficiency electronic ballast multi voltage.

'Ex op is'

safe optical radiation

Group II, Category 2GD

Ex db eb op is IIC T. Gb
Ex tb IIIC T. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED LIGHTING FIXTURES AND FLOODLIGHTS



LED
Lighting Fixtures

EWL SERIES

EWL series floodlights and lighting fixtures are designed according to the LED technical requirements in order to make the most of this new technology. The project combines a lightweight and compact design with high performance in terms of reliability, safety, efficiency and energy savings, ensuring unalterable brightness and light quality.

- Heat dissipation body which guarantees the LED plate long duration.
- As floodlights, the LED plate can be accompanied by an optics that vary the photometry.
- Simple installation and continuous illumination even in the event of failure of some LEDs.
- 'Ex e' internal terminal junction box which allows the connection with an 'Ex e' cable gland (not barrier).
- Designed to replace traditional up to 700W mercury, 400W metal halide and 500W incandescent lamps for power and quality of light emitted thus saving 50% of the energy consumed.

'Ex op is'

safe optical radiation

Group II, Category 2GD

Ex db eb op is IIC T. Gb
Ex tb IIIC T. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LIGHTING FIXTURES FOR ENERGY SAVING AND DISCHARGE LAMPS



EV, EW, EWA, EVE, EWE, EWAE SERIES

EV... EW... EWA... series lighting fixtures are designed for the petrochemical industry, combining aesthetics with functionality, performance with simplicity in full compliance with the severity of Ex regulations. The aluminium alloy with low copper content, the shock-resistant borosilicate glass and the electro-polished stainless steel make this fixture strong to corrosion agents of salt atmospheres and of industrial pollutions.

- Globe in borosilicate glass with high thermal and mechanical stability.
- EVE fixtures have an 'Ex e' internal terminal junction box which allows the connection with an 'Ex e' cable gland (not barrier).
- Suitable for discharge lamps up to 150W (EW, EWE) and up to 400W (EWA, EWAE).

Group II, Category 2GD

EV, EW, EWA series
Ex d IIC T. Gb - Ex tb IIIC T. °C Db

EVE, EWE, EWAE series
Ex de IIC T. Gb - Ex tb IIIC T. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LIGHTING FIXTURES FOR DISCHARGE LAMPS



EWN SERIES

EWN series lighting fixtures are able to mix structural strength and resistance to chemically aggressive environments with a lighting efficiency and an optimal distribution for industrial process areas where both the lighting of on-walk-way and working surfaces (Horizontal Lux) and the lighting of potential obstructions (Vertical Lux) are required. The 'Ex nR' (restricted briefing) mode of protection, obtained thanks to the use of special silicone gaskets resistant to ageing and wear, makes EWN series a "Category 3" equipment.

- Simplified re-lamping.
- High resistance to corrosion and extreme weather conditions.
- Suitable for discharge lamps up to 400W.

Group II, Category 3GD

Ex nR IIC T... Gc - Ex tc IIIC T... Dc

IP66

Zone 2-22

Low copper content aluminium alloy

LIGHTING FIXTURES FOR DISCHARGE LAMPS



RLFE SERIES

RLFE series lighting fixtures for discharge lamps are suitable for lighting large areas, specifically for chemical and petrochemical industry, off-shore and on-shore. The body is made of aluminium alloy with low copper content, the globe is of borosilicate glass. They have an high thermal and mechanical stability.

- Quick and simple maintenance.
- Robust and reliable over time.
- Suitable for discharge lamps up to 400W.

Group II, Category 2GD

Ex de IIC T. Gb - Ex tb IIIC T. Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LIGHTING FIXTURES FOR LEDS TUBES/ STRIPS, FOR FLUORESCENT TUBES, AND COMPACT FLUORESCENT TUBES

LED
Lighting Fixtures



FLF, FLFE, FLF-L, FLFE-L, EVFD-L SERIES

FLF and FLFE series lighting fixtures are available for fluorescent tubes or strips, compact fluorescent tubes (FLF/FLFE...36C) LED tubes (FLF/FLFE...L). They consist of two heads in aluminum alloy with low copper content provided with a G13 lamp holders, a tempered borosilicate glass tube heat resistant and an internal white painted aluminium reflector. EVFD-L lighting fixtures are designed for a uniform illumination of locations and facilities that require compact devices and high luminous efficiency. The exclusive curvature of the reflector, combined with the transparency of the protective tube, allows a wide spread of light, less wearing and more comfortable in any environment.

- FLF, FLFE series: excellent "CX" coefficient, less wind resistance and less accumulation of dust.
- FLFE fixtures have an 'Ex e' internal terminal junction box which allows the connection with an 'Ex e' cable gland (not barrier).

'Ex op is'
safe optical radiation

Group II, Category 2GD

FLF, FLFE series

Ex d IIC T6 Gb - Ex tb IIIC T67°C Db
Ex de IIC T6 Gb - Ex tb IIIC T67°C Db

FLF-L, FLFE-L series

Ex db op is IIC T6 Gb - Ex tb op is IIIC T80°C Db
Ex db eb op is IIC T6 Gb - Ex tb op is IIIC T80°C Db

EVFD-L series

Ex db op is IIB T6 Gb - Ex tb op is IIIC T85°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED LIGHTING FIXTURES

LED
Lighting Fixtures



EXEL-L SERIES

EXEL-L series increased safety lighting fixtures for LEDs tubes are suitable to be installed in hazardous areas where a high degree of protection and resistance against corrosion is required. EXEL-L series is GRP made and features the 'Ex de mb' method of protection. It's equipped with LED tubes sealed in a transparent resin. The through wiring double ended makes installation on field easier and faster. The transparent cover is clipped into place on both sides of the fixture body ensuring excellent protection against dust and water.

- Body in antistatic GRP (glass reinforced polyester).
- VØ (UL 94) guaranteed self-extinguishing and UV resistant.
- Screws and accessories in stainless steel AISI 316L.
- Standard power supply 220/240V 50/60Hz.

'Ex op is'
safe optical radiation

Group II, Category 2GD

Ex de mb op is IIC T5/T6 Gb - Ex tb IIIC T64°C/T49°C Db IP 66

Zone 1-2-21-22

GRP

LIGHTING FIXTURES FOR FLUORESCENT TUBES



EXEL, EXEN SERIES

EXEL and EXEN series fluorescent lighting fixtures have a great mechanical strength and they can be installed in hazardous areas where a high protection against corrosion, dust, water and humidity is required. They have an high reliability thanks to the EOL Protected system which allows the fluorescent tube to exhaust and shut down safely and securely.

Thanks to the dual-channel electronic ballast, if one of the two tubes fails, the other continues to operate independently.

- Opening and closing slide system controlled by an hexagonal wrench.
- Body in black antistatic polyester resin reinforced with fiberglass shock and UV resistant. Diffuser in transparent polycarbonate, shock and UV resistant.
- Loop-in/Loop-out connection on both sides.
- Suitable for fluorescent tubes up to 2 x 36W.

EXEL series

Group II, Category 2GD

Ex de IIC T4 Gb
Ex de mb IIC T4 Gb
Ex tb IIIC T70°C Db

IP66

Zone 1-2-21-22

EXEN series

Group II, Category 3GD

Ex nA II T4/T5 - Ex tD A22

Group II, Category 3D

Ex tD A22

IP 66

Zone 2-22

Antistatic glass reinforced polyester

STAINLESS STEEL LIGHTING FIXTURES FOR FLUORESCENT TUBES



VIXLU SERIES

VIXLU series increased safety lighting fixtures feature a body in AISI 304 stainless steel (AISI 316L upon request) and a tempered shock- and high temperature-resistant glass diffuser.

This particular construction makes them particularly suitable for applications requiring greater protection against chemically aggressive environments or with high risk of mechanical shock.

- Flat glass anti-light pollution.
- Stainless steel locking.
- EOL protected system.
- Up to 2 x 36W fluorescent tubes.

Group II, Category 2GD
VIXLU series

Ex e mb IIC T4 Gb
Ex tb IIIC T70°C Db

IP66

Zone 1-2-21-22

AISI 304 Stainless steel

LIGHTING FIXTURES FOR FLUORESCENT TUBES AND LED STRIPS



EXEN-C, EXEN-CL SERIES

EXEN-C/EXEN-CL series lighting fixtures provide mechanical properties that ensure reliability and safety. They feature a body in polyester resin reinforced with glass fiber and a diffuser in transparent polycarbonate for T8 fluorescent or LED tubes.

- Opening and closing slide system controlled by an hexagonal wrench, loop-in/loop-out connection, suitable for fluorescent tubes and LED strips.
- Acid/hydrocarbon resistant expanded silicone gasket.
- Inner frame/reflector in white painted steel.

'Ex op is'

safe optical radiation

Group II, Category 3GD

EXEN-C
Ex nA IIC T... Gc - Ex tc IIIC T...°C Dc
Ex tb IIIC T...°C Db

EXEN-CL
Ex nA IIC T... Gc - Ex tc IIIC T...°C Dc
Ex tb op is IIIC T...°C Db IP66
Zone 2-22

Antistatic glass reinforced polyester

LED
Lighting Fixtures

LED FLOODLIGHTS



SLED SERIES

SLED series floodlights with LED technology combine lightweight, compact design and high performance in terms of reliability, safety, efficiency and energy saving. The finned body of the floodlight acts as a heat sink for the LED plate, allowing the installation of greater light output without incurring the deterioration of the LEDs.

- Colour rendering index > 70
- Galvanized steel adjustable bracket
- SLED-250, SLED-400, SLED-600 with optics "square shaped beam" for a uniform light distribution.
- SLED 401, 601 and 1000 have no reflector optics and are characterized by a diffused light beam and greater Lumen.

Group II, Category 2GD

Ex de mb IIB+H2 T5/T6 Gb - Ex tb IIIC T100°C T85°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED
Lighting Fixtures

VERTICAL RECTANGULAR FLOODLIGHTS



SLFE SERIES

SLFE series floodlights are designed to ensure a symmetrical distribution and a light power in all those areas that require an intense and concentrated stream of light. Their rectangular shape makes them unique and innovative in the design for their maintenance function; in fact, through a side access, it's possible to replace the bulb without removing the front glass.

The electrical connection to the floodlight is made through a terminal inserted into an "Ex e" enclosure which allows the entry by a cable gland with an "Ex" sealing ring (no barrier).

- Flat glass anti-light pollution.
- Reinforced steel bracket for moving structures upon request.
- Suitable for lamps up to 600W.

Group II, Category 2GD

Ex de IIB T2/T3 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

HORIZONTAL RECTANGULAR FLOODLIGHTS



SLEE SERIES

SLEE series floodlights are suitable for installation in environments where hydrogen (H₂) is present. They are certified with a high degree of mechanical protection (IP67) and they provide a symmetrical and concentrated distribution of the luminous flux.

The electrical connection to the floodlight is made through a terminal inserted into an "Ex e" enclosure which allows the entry by a cable gland with an "Ex" sealing ring (no barrier).

- Flat glass anti-light pollution.
- Reinforced steel bracket for moving structures upon request.
- Suitable for lamps up to 400W.

Group II, Category 2GD

Ex de IIB + H₂ T₂/T₃/T₄ -
Ex tD A21

IP66/67

Zone 1-2-21-22

Low copper content aluminium alloy

RECTANGULAR FLOODLIGHTS



TIGER SERIES

These floodlights are ideal for lighting large areas, if equipped with symmetrical reflector, or for a selective concentration of light on specific areas when equipped with asymmetric reflector. The high degree of protection IP66 combined with an optimum efficiency at low (-50° C) and high (+60° C) temperatures, make TIGER floodlights suitable for the use in all environments where climatic conditions are extreme.

- Fast maintenance.
- Simple wiring thanks to the use of marked terminals.
- Anti-corrosion aluminium clips.
- Flat glass anti-light pollution.
- Suitable for lamps up to 400W.

Group II, Category 3GD

Ex nR II T₂/T₃ - Ex tD A22

IP66

Zone 2-22

Die-cast aluminium

LED LIGHTING FIXTURES FOR SAFETY WARNINGS



LED
Lighting Fixtures

CCA-03EX SERIES

CCA-03EX series LED lighting fixtures for safety warnings are designed for installation in areas with risk of explosion where lighting may be stopped due to abnormal, unusual or accidental situations. The new CCA-03EX lighting fixture can be installed in indoor and outdoor environments and it can operate both in normal and emergency service, with a maximum duration of about 2 hours. In case of interruption of the supply voltage, electronics automatically turn on the lighting fixture.

- Simple wiring, two threaded hubs studied for the through-wiring.
- Compact size, two directional LED spotlights.
- LED COB (Chip on Board: high performance in terms of lumens, low maintenance costs and long life.
- Color temperature 3.500°C, 595 lm for each LED.

Group II, Category 2GD

Ex d IIC T₆ G_b - Ex tb IIIC T₈₅°C Db
IP66

Zone 1-2-21-22

Low copper content aluminium alloy

LED
Lighting Fixtures

LED OBSTRUCTION LIGHTING FIXTURES



XLFE-MIB, XLFE-4/1 SERIES

XLFE-MIB and XLFE-4/1 obstruction lighting fixtures are suitable for installation on towers or high buildings as obstruction signal thanks to light signals emitted by LEDs of high power and luminous efficiency. The use of LED technology provides low power consumption, long life (approx. 50.000 hours) and, consequently, a reduction in maintenance costs.

- Lighting fixtures in red color complies with ICAO Standard (International Civil Aviation Organization).
- 2000 candles for medium intensity XLFE-MIB and 32 candles for low intensity XLFE-4/1 obstruction lighting fixtures.
- Different colors available.

'Ex op is'
safe optical radiation

Group II, Category 2GD

XLFE-MIB
II 2GD Ex db eb op is IIC T₄ G_b; Ex
tb op is IIIC T₁ 10°C Db IP66

XLFE-4/1
Ex de IIC T₆ G_b; Ex tb IIIC T. Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

OBSTRUCTION LIGHTING FIXTURES



XLI, XLF 1-2 SERIES

XLI and XLF 1-2 series lighting fixtures are ideal for installation on towers and high buildings as obstruction signal with a fixed light (XLI) or with a flashing light (XLF 1-2). Their mechanical strength combined with the functionality and security make them durable even in the presence of salt atmosphere and industrial pollutions.

- Possibility of double lighting fixture wired and sealed to the junction box.
- Different colors available.
- XLI series is suitable for lamps up to 100W.
- XLF 1-2 series is suitable for lamps up to 16 Joule.

Group II, Category 2GD

XLI series
Ex d IIC T.. Gb - Ex tb IIIC T.. °C Db
IP66

XLF 1-2 series
Ex d IIC T..Gb- Ex tb IIIC T... Db

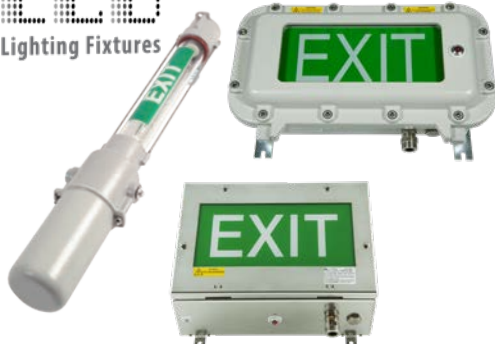
IP66

Zone 1-2-21-22

Low copper content aluminium alloy

EMERGENCY SIGNALLING LIGHTING FIXTURES FOR FLUORESCENT TUBES AND LED STRIPS

LED
Lighting Fixtures



EVF-18EX, LFED, LFEE SERIES

Emergency lighting fixtures LFEE, LFED and EVF-18EX series are designed for the lighting and identification of emergency exits or escape routes in case of danger. LFEE and LFED series are made of a stainless steel AISI 316L enclosure, a window with a screen-printed pictogram and an LED strip. EVF-18EX series is equipped with an electronic ballast for 8W fluorescent lamps.

- EVF-18EX: suitable for fluorescent tube up to 1 x 8W, two-color LED (green/red) which monitors batteries
- LFEE, LFED: 'Ex op is' method of protection, models for normal and emergency operation available

'Ex op is'

safe optical radiation

Group II, Category 2GD

EVF-18EX
Ex d IIC T5 - Ex td A21

LFED
Ex db op is IIB+H2 T6 Gb
Ex tb op is IIIC Db

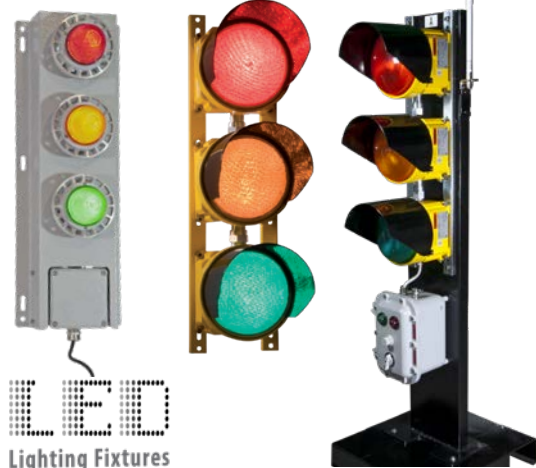
LFEE
Ex db eb mb op is IIC T5/T6 Gb
Ex tb op is IIIC T70/T60°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy or AISI 316L stainless steel

LED TRAFFIC LIGHTS



LED
Lighting Fixtures

MSU, CCA-02E/S...LD, TL SERIES

MSU, CCA-02E/S...LD and TL series traffic light systems are suitable for the traffic regulation in chemical aggressive industrial environments or potentially hazardous areas, including marine one. TL series Wi-Fi traffic lights uses the technology of RF (radio frequency) communication. This technology eliminates the need to dig up the road surface in order to "bury" the cables and/or sensors required in the systems used today.

- Two, three, four or five signallers and combinations of colors (for MSU)
- One, two or three signallers and combinations of colors like green, yellow and red (for CCA-02E/S...LD)
- TL series available with 2 or 3 lights: CCA-02E/S...LD series traffic light + EJB-1A series junction box

Group II, Category 2GD

Ex d IIC T6 Gb - Ex tb IIIC T... Db
(CCA-02E/S...LD)

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

FLUORESCENT AND LED HAND LAMPS



LED
Lighting Fixtures

L, FHL, LHL-P SERIES

Hand lamps are suitable to be used for inspection, operation and plant maintenance. L-5, L-5R series have a light sensor for saving energy and batteries level information. They can be mounted on fire helmets. L-3000 series has 2 LEDs of 135 lumens each in a double optic with different light beams and Led Engine technology with a step light system. FHL series hand lamps are suitable for compact fluorescent tubes of 24/36 W whereas LHL...P series for LED tubes of 9/17W. Thanks to their special construction, robust and easy to handle, they provide excellent performance in any position and ambient temperature.

- L-3000: swivelling head with 3 positions 0° | 45° | 90°.
- FHL series: built-in electronic ballast, power supply 24 V dc.
- LHL...P: light color temperature around 5500 K, 72 LEDs, lifespan > 50.000 hours, stainless steel hook and 5m cable.

L-5, L-5R, L-5S SERIES

Group II, Category 1GD

Ex ia IIC T4 Ga - Ex ia IIIC T85° Da

L-3000 SERIES

Group II, Category 1GD/1D

Ex ia IIC T4 Ga | Ex ia IIIC T85° Da

IP67

Zone 0-1-2-21-22

Thermoplastic resin

FHL

Group II, Category 2GD

Ex d IIC T6 Gb; Ex tb IIIC T85°C Db

Aluminium alloy

LHL-P

Group 2, Category 2G

Ex mb IIIC T95°C/T130°C (Db)

Ex mb IIIC T95°C/T130°C (Db)

Polycarbonate and PVC

IP66

Zone 1-2-21-22

JUNCTION BOXES



EJB, EJB...A, EJB...W SERIES

EJB and EJB...A series junction boxes are used either as junction boxes with/without terminals or for installation of electrical equipment such as circuit breakers, signals, remote control switches, transformers. The cover may be equipped with a borosilicate, rectangular window to visualize instruments mounted inside. EJB...W series instrument housing boxes, with one or two circular windows, are suitable for containing analogical and digital measuring instruments. The full series has casting hinges.

- Stainless steel hinges mounted as standard on the long side with predisposition of mounting on the short side.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD/2(1)GD

Ex d IIB+H₂ Gb - Ex tb IIIC Db
Ex d IIB+H₂ T... Gb - Ex tb IIIC T... °C Db
Ex d [Ia Ga] IIB+H₂ T... Gb - Ex tb [Ia Da] IIIC T... °C Db

IP66/67

Zone 1-2-21-22

Low copper content aluminium alloy

JUNCTION BOXES



EJBX SERIES

EJBX series junction boxes in stainless steel have mechanical and anti-corrosion features superior than boxes in aluminium alloy making them suitable for chemically aggressive and extreme environments as marine one. They are used either as junction boxes with/without terminals or for installation of electrical equipment.

- Stainless steel hinges with mounting brackets included.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group I/II, Category M2/2GD/2(1)GD

Ex d IIB+H₂ Gb - Ex tb IIIC Db
Ex d IIB+H₂ T... Gb - Ex tb IIIC T... °C Db
Ex d [Ia Ga] IIB+H₂ T... Gb - Ex tb [Ia Da] IIIC T... °C Db
Ex d IIB+H₂ T6/T5 - Ex td A21 T85°C/T100°C
Ex d I mb

IP66/67

Zone 1-2-21-22

AISI 316L Stainless steel

JUNCTION BOXES



GUB, GUB...V SERIES

GUB series junction boxes have a screw cap and are used either as junction boxes with/without terminals or for installation of electrical equipment such as fuses, relays, disconnectors, remote control switches, transformers, ballast. GUB...V series instrument housings, supplied with a circular borosilicate window, are used to contain analogical and digital instruments such as ammeters and voltmeters.

- Casting fixing lugs.
- Stainless steel screws.

Group II, Category 2GD/2(1)GD

Ex d IIC Gb - Ex tb IIIC Db
Ex d IIC T6, T5 Gb - Ex tb IIIC T85°C, T100°C Db
Ex d IIC T6/T5 - Ex tb IIIC T85°C/T100°C Db
Ex d [Ia Ga] IIC T... Gb - Ex tb [Ia Da] IIIC T85°C, T100°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

JUNCTION BOXES



CCA...E, CCA...EH, CCA...C SERIES

CCA...series junction boxes are used either as junction boxes with/without terminals or for installation of electrical equipment. CCA...C series can be equipped with control devices whereas CCA...EH series instrument housings, supplied with a borosilicate glass round window, are used to contain analogical and digital instruments.

- In CCA...E and CCA...EH series, the internal components can be easily installed thanks to the external flange structure.
- CCA...C series boxes are equipped with a cylindrical coupling joint so that they can be equipped with control devices. Hinged cover.
- Stainless steel screws.
- Zone 1-2-21-22
- Low copper content aluminium alloy

CCA...E and CCA...EH series

Group II, Category 2GD
Ex d IIC Gb - Ex tb IIIC Db
Ex d IIC T6, T5 Gb - Ex tb IIIC T85°C, T100°C Db
Ex d IIC T6/T5 - Ex tb IIIC T85°C/T100°C Db -
Ex d [Ia Ga] IIC T... °C, Gb - Ex tb [Ia Da] IIIC T... °C Db

CCA...C series

Group II, Category 2GD/2(1)GD
Ex d IIC Gb - Ex tb IIIC Db
Ex d IIC T6, T5 Gb - Ex tb IIIC T85°C, T100°C Db
Ex d IIC T6/T5 - Ex tb IIIC T85°C/T100°C Db
Ex d [Ia Ga] IIC T... °C, Gb - Ex tb [Ia Da] IIIC T... °C Db
IP66

JUNCTION BOXES



SX7E, SX6GUA, SX9GUB SERIES

SX7E, SX6GUA and SX9GUB series junction boxes are UL certified. SX7E and SX6GUB may be used either as junction boxes with/without terminals or for installation of electrical equipment. SX6GUA series is suitable for installation along pipe courses as junction boxes and distribution boxes for conductors. They are available in many and different dimensions.

- SX7E and SX9GUB series: cover in low copper content aluminum alloy, stainless steel screws, mounting plate, fixing lugs, epoxy coating.
- SX6GUA series: body in cast iron, stainless steel screws, NPT thread.

Class I, Groups C and D; Class II, Groups E, F and G

Directive

NEC, CEC, NFPA

Standards

NEMA 7, NEMA 9, NEMA 4X, NEMA 3, UL 886, UL 1203, NEC Art 500-503

JUNCTION BOXES



CCAI SERIES

CCAI series junction boxes are made of stainless steel. They are used either as junction boxes with/without terminals or for installation of electrical equipment. Their square shape, without external flanges, allows to realise modular panels certified for gases of IIC group. They can be equipped with control devices.

- Wall and cover can be drilled and threaded according to customers' specification.
- Internal and external stainless steel earth screws.
- Fixing lugs.
- Hinged cover.

Group I/II, Category M2/2GD

Ex d I Mb
Ex d IIC Gb - Ex tb IIIC Db
Ex d IIC T6, T5 Gb - Ex tb IIIC T85, T100°C Db
Ex d IIC T6/T5 - Ex tb IIIC T85°C/ T100°C
Ex d [ia Ga] IIC T... Gb - Ex tb [ia Da] IIIC T...°C Db

IP66

Zone 1-2-21-22

AISI 316L Stainless steel.

JUNCTION BOXES WITH SCREW COVER



CCAIF, CCAIF...H SERIES

CCAIF and CCAIF..H series junction boxes in stainless steel have a screw cover with or without round window. They are used either as junction boxes with/without terminals. The body can be drilled and threaded according to customers' specification.

- AISI 316L stainless steel.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2 GD

Ex d IIC Gb Ex tb IIIC Db

IP66

Zone 1-2-21-22

AISI 316L Stainless steel

JUNCTION BOXES



CTB...CSTB...CTBE... SERIES

CTB...CSTB...CTBE... series junction boxes, stainless steel made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal strips and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels with IP66 protection degree.

- Upon request can be supplied with removable gland plates, hinged and lockable lid (no CTBE).
- Stainless steel screws.
- CTBE series now available

Group II, Category 2GD

Ex eb IIC T... Gb - Ex tb IIIC T... Db
Ex eb ia IIC T... Gb - Ex ia IIIC T... Db
Ex eb ia IIC T... Gb - Ex tb ia IIIC T... Db
Ex de IIC T6/T5 Gb - Ex tb IIIC T85°C/ T100°C Db

IP 66

Zone 1-2-21-22

AISI 316L stainless steel

JUNCTION BOXES



SA...SS SERIES

SA...SS series junction boxes, AISI 316L stainless steel made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal strips and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels with IP66 protection degree.

- Upon request, they can be supplied with hinged and lockable lid.
- Stainless steel screws.

Group II, Category 1/2(1)/2GD

Ex e II T5/T6 Ex tD A21
Ex e (ia) IIC T5/T6 Ex tD A21
Ex ia IIC T5/T6 Ex tD A21
Ex de IIC T5/T6 Gb Ex tb IIIC
T100°C-T85°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel

JUNCTION BOXES



SA, SA/P SERIES

SA and SA/P series junction boxes are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal strips and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels.

- SA junction boxes are made in low copper content aluminium alloy whereas SA/P boxes are in glass reinforced resin.
- RAL 7035 (Ex e) or RAL 5015 (Ex i) polyester coating for SA series.
- They can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD

Ex e IIC T. Gb - Ex tb IIIC T. Db
Ex ia IIC T. Gb - Ex ia IIIC T. Db
Ex e ia IIC T. Gb - Ex tb ia IIIC T. Db
Ex de IIC T6/T5 Gb - Ex tb IIIC
T85°C/T100°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy, GRP

JUNCTION BOXES



SAG SERIES

SAG series junction boxes, aluminium alloy made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. Thanks to the walls thickness (7 mm), they can be directly connected to pipes and conical threaded unions. They can be supplied with multipolar or modular terminal strips and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels.

- Greater walls thickness.
- RAL 7035 (Ex e) or RAL 5015 (Ex i) polyester coating.
- They can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD

Ex e IIC T. Gb - Ex tb IIIC T. Db
Ex ia IIC T. Gb - Ex ia IIIC T. Db
Ex e ia IIC T. Gb - Ex tb ia IIIC T. Db
Ex de IIC T6/T5 Gb - Ex tb IIIC
T85°C/T100°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

CONTROL STATIONS



A, I, P SERIES

A, I and P series control stations are ideal to house on the cover electrical equipment as control and signalling devices. They are suitable for chemical, petrochemical and pharmaceutical industries and they can be installed either on board machine or by remote control.

- A series is in aluminium alloy, I series is in stainless steel while P series is in glass reinforced resin.
- A, I, P series are supplied with cable gland. Wide range of models and accessories available.
- Stainless steel screws.

Group II, Category 2GD

Ex de IIC T5 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy, stainless steel, GRP

ROUND JUNCTION BOXES



S, SF, SSC SERIES

S, SF, and SSC series junction boxes are suitable for installation along piping as junction boxes and distribution boxes for conductors. Several models are available in relation to size and to holes number. They can be supplied as pulling boxes or as terminal boxes with multipolar or modular terminal strips.

- SF series has a wall mounting bracket whereas SSC series has a ceiling mounting bracket.
- Stainless steel screws.
- Available SF...S and SSC...S series in stainless steel.

Group II, Category 2GD

Ex d IIC Gb - Ex tb IIIC Db
Ex d IIC T... Gb - Ex tb IIIC T... Db
Ex e IIC T... Gb - Ex tb IIIC T... Db
Ex i IIC T... Gb - Ex tb IIIC T... Db

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy and stainless steel

ROUND JUNCTION BOXES



SWS SERIES

SWS series junction boxes, are suitable for containing temperature sensors such as thermocouples.

- Stainless steel screws.
- SWS series features a galvanized steel chain which prevents from losing the lid.

Group II, Category 2GD

SWS SERIES

Ex d IIC T... Gb - Ex tb IIIC T... Db
Ex e IIC T... Gb - Ex tb IIIC T... Db
Ex i IIC T... Gb - Ex tb IIIC T... Db
Ex d IIC Gb - Ex tb IIIC Db

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

JUNCTION BOXES FOR EX DE PANEL BOARDS



EJBE, EJBXE SERIES

EJBE, EJBXE series is composed by one 'Ex d' EJB (aluminium) or EJBX (stainless steel) series junction box and one 'Ex e' CTB series connection box through the flange assembly. Viewing windows are available on 'Ex d' enclosure for the visualization of indicators, displays and monitoring devices.

- AISI 316L stainless steel or copper free aluminium alloy.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2GD

Ex de IIB+H, T5/T6 Gb
Ex tb IIIC T85°C T100°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel or copper free aluminium alloy

JUNCTION BOXES FOR EX DE PANEL BOARDS



GUBE, GUBE...H SERIES

GUBE series control panels, consisting of a 'Ex d' junction box CCAIF series and a 'Ex e' junction box CTB series in stainless steel AISI316L, have been specifically designed for the offshore market. The 'Ex d' junction box is used for the installation of electrical components such as measuring instruments, PLCs, etc., while the 'Ex e' increased safety junction box is used for the installation of terminal strips for the connection of incoming cables.

- GUBE...H series features a circular viewing windows.
- AISI 316L stainless steel.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2GD

Ex de IIC T5/T6 Gb - Ex tb IIIC T85°C T100°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel

CONTROL PANEL 'Ex tb'



SA SAG, SA/P, CTB SERIES

The control, monitoring and signalling units SA, SA/P, CTB include a series of enclosures with "Ex tb" protection available in aluminium, polyester or stainless steel and in different measures.

According to the size and the material chosen, there are three maximum dissipation limits that correspond to each of the three maximum optional ambient temperatures: + 40°C, + 55°C and + 60°C.

- Several IECEx/ATEX certified devices can be mounted on the enclosure faces.
- A glass or polycarbonate window can also be fixed to the lid.
- Various electronic devices can be installed internally such as terminals, analog and digital instruments, control and measurement devices, circuit breakers and IECEx / ATEX certified battery packs.

Group II, Category 2D

Ex tb IIIC T80°C Db

IP 66

Zone 21-22

Low copper content aluminium alloy, stainless steel, GRP

LIMIT SWITCHES



YFC SERIES

YFC series limit switches are used as protection and reset switches, devices for presence recognition or objects count and transit, measurement on / off, position measurement. Easy wiring and quick installation, solidity, reliability in time are the main features. Furthermore, they are provided with a wide range of actuators and contacts combinations which allow offering the best solution for proper functioning of a system in dangerous zone.

- 25 different types of interchangeable 90° step adjustable positionable heads.
- Visibility during operation, able to switch high electrical currents (max.10A), contacts electrically separated, definite and adjustable points of intervention.
- Stainless steel screws.

Group II, Category 2GD

Ex d IIC T6 Ex tD A21 T85°C

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

ROTARY SWITCHES ROUND INSTRUMENT HOUSINGS



CSC, EFSCO, EMHA-9, CSC-H SERIES

CSC and EFSCO series circuit breakers, switches and change-over switches are rotary type models with a control device on the cover. CSC switches have a range of 16A whereas EFSCO series have ranges of 25, 50 and 63A. CSC switches are supplied with Male 1" - Female 3/4" reducer.

- Front aluminium control device.
- Cover fitted with stainless steel closing screw. Fixing lugs.

EMHA-9 and CSC-H series instrument housings are normally used to enclose analogical instruments such as ammeters and voltmeters. CSC-H series control stations may be supplied with a single or a double unit. Measuring instruments upon request.

- Borosilicate front glass.
- Stainless steel screws. Fixing lugs.

Group II, Category 2GD

CSC series
Ex d IIC T6 Ex tD A21
EFSCO series
Ex d IIC T5/T6 Ex tD A21
EMHA-9, CSC-H series
Ex d IIC T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

CONTROL STATIONS



CSE, EFDC SERIES

CSE, EFDC series are suitable as control and signalling devices. They are suitable for chemical, petrochemical and pharmaceutical industries and they can be installed either on board machine or by remote control. CSE series control stations are rectangular whereas EFDC series are cylindrical. On EFDC control stations may be installed up to four different control devices.

- Voltage/amperage for standard use.
- Stainless steel bushing and push button shaft.
- Cover fitted with stainless steel closing screw. Lugs for wall mounting.

Group II, Category 2GD

CSE series
Ex d IIB T5/T6 Ex tD A21
EFDC series
Ex d IIC T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

BREAKER



EFD3 SERIES

EFD3 series tripolar thermo-magnetic circuit breakers are used for command (start - stop) and protection of three-phase motors. The circuit breaker has an adjustable thermo-magnetic protection and an external control device.

- Stainless steel screws. Fixing lugs.
- Thermal range from 0,16 - 0,25A up to 20,00 – 25,00A.

Group II, Category 2GD
Ex d IIB T5/T6 Ex tD A21
IP 66
Zone 1-2-21-22
Low copper content aluminium alloy

AUDIBLE WARNINGS AND LOUDSPEAKER



ETH, ETH20MDLOUD/TR SERIES

ETH series audible warnings are recommended when it's necessary the use of a signalling bell and/or alarm in areas with potentially explosive atmosphere. The explosion-proof loudspeakers ETH20MDLOUD series are suitable for connection to standard amplification system with output 100V, to alarm systems and for public address.

- ETH series: two sizes available and different colors upon request. Five sounds with different intensity and frequency: bi-tone - yelp - wail - intermittent - fixed note.
- ETH20MDLOUD/TR: equipped with a transformer offering the possibility to adapt and select the sound level.

ETH-12
Group II, Category 2GD
Ex d IIC T6 Gb – Ex tb IIIC T85°C
IP65
ETH-20
Group II, Category 2G
Ex d IIC - IIB+H, T4 Gb IP6x
Zone 1-2-21-22
ETH20MDLOUD/TR
Group II, Category 2GD
Ex d IIB+H, T6/T5 Gb - Ex tb IIIC
T85°C/T100°C Db
Low copper content aluminium alloy

ROTATING ELECTROMECHANICAL SIRENS



ETS60 SERIES

ETS60 series sirens are recommended when it's necessary the use of a signalling bell and/or alarm in areas with potentially explosive atmosphere.

- ETS60 series: ideal for noisy environments, mounting bracket with fixing holes and different power voltages VAC/VDC upon request.

ETS60 series
Group II, Category 2GD
Ex d IIC T6 – Ex tD A21 IP65
Low copper content aluminium alloy

ELECTRONIC GROUNDING SYSTEM



GRD-4200 SERIES

GRD-4200 series electronic grounding equipment provides the earthing for tankers during loading and unloading operations of flammable liquids in hazardous areas. Its operation consists in reading the resistive parameter which guarantees the earthing connection and the control of the pump during loading and unloading operations.

- Connecting clamp complete with 8 meters of cable.
- Stainless steel cover bolts. Fixing lugs.
- Nickel-plated brass cable gland.
- Selector, red "stop" indicator light and green "go" indicator light on the cover.
- SIL Certified, Level 2.

Group II, Category 2(1)GD
Ex d [ia] Ia IIB + H₂T6 Ex tD [ia D] A21
Zone 1-2-21-22
Low copper content aluminium alloy

PLUGS AND SOCKETS



PY, SPY SERIES

PY series sockets, with a interlocked disconnecting switch included, are suitable for every explosive atmosphere. They are joined up to SPY plugs and, thanks to their construction features, they can't be combined with industrial plugs. SPY plugs can be used with industrial sockets in accordance with European directive CEE 17. Rated voltage identification by ring color.

- Voltage range from 16A to 32A.
- PY socket has a PVC blinding plug with a chain which prevents from losing it.
- Brass pins. Fixing lugs.

Group II, Category 2GD

Ex d IIC T6 Gb; Ex tb IIIC T76°C Db

IP65

Zone 1-2-21-22

Low copper content aluminium alloy

PLUGS AND SOCKETS



FSQC, FP SERIES

FSQC series sockets and FP series plugs are made of two pole or three pole models plus earth. Equipment energizing is achieved by inserting the plug, which acts on the internal circuit breaker, avoiding the formation of arcs between the cavities and the pins both in plug and socket. The circuit breaker can be closed only with the plug inserted and its extraction is possible only with the circuit breaker in the "open" position.

- Voltage range from 32A to 63A.
- Socket has a PVC blinding plug with a chain which prevents from losing it.
- Automatic circuit breaker. Brass pins. Fixing lugs.

Group II, Category 2GD

FSQC series

Ex d IIC T6 Gb Ex tb IIIC T85°C Db

FP series

Ex d IIC T6 Gb Ex tb IIIC T85°C Db

IP 65

Zone 1-2-21-22

Low copper content aluminium alloy

PLUGS AND SOCKETS



EPC, EPRC, AP SERIES

EPC, EPRC series sockets, characterized by a voltage range from 63A to 125A, are suitable for the powering of welding equipment, compressors, generators and large mobile equipment in general. AP series plugs are available in two or three poles models plus earth. The circuit breaker can be closed only when the plug is inserted and the plug can be extracted only when the circuit breaker is in the "open" position.

- Socket has a PVC blinding plug with a chain which prevents from losing it.
- Automatic circuit breaker. Brass pins. Fixing lugs.

Group II, Category 2GD

Ex d IIC T5/T6 Ex tD A21

Zone 1-2-21-22

Low copper content aluminium alloy

CONTROL DEVICES



M-O... SERIES

M-O... series control devices are normally installed as external operators on "Ex d", "Ex e", "Ex tb" enclosures suitable for all kind of industry where an explosive atmosphere may be present. Push buttons have an axial motion, the handles have a rotating motion to start up electrical or mechanical contacts inside the cases. The body is in aluminium with a black anodized finish, pin and spring are in stainless steel, silicone gaskets.

- High mechanical strength; easy contacts replacement and cables connection.
- Protection class to meet harsh environments with IP66 as standard.
- Indicator lights available for -60°C.

Group II, Category 2GD

Ex d IIC Ex tD A21

Ex e IIC Gb; Ex tb IIIC Db

Ex II 2D Ex tb IIIC Db IP66

IP66

Zone 1-2-21-22

CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



NAV, NEV SERIES

NAV and NEV series cable glands are suitable for the direct insertion of non-armoured and armored cables into explosion-proof junction boxes and/or lighting fixtures, plugs and sockets. They have three type of protection 'Ex d', 'Ex e' and 'Ex tb' and they are equipped with one sealing ring on the inner and outer sheath of the cable. NAV series has a single sealing ring which tightens the incoming cable ensuring the 'Ex d' way of protection. NEV series has a second sealing ring that tightens on the outer sheath of the cable to ensure the IP66/68 avoiding the ingress of water, moisture, rain and dust.

- Nickel-plated brass standard. Other materials (galvanized steel - stainless steel) upon request.
- High-tech and high mechanical performance compression rings and gaskets with high-temperature resistance.

REV, REVD series available while supplies last.

Group II, Category 2GD

Ex db IIC Gb
Ex eb IIC Gb
Ex tb IIIC Db

IP66/68

Zone 1-2-21-22

Nickel-plated brass standard

CABLE GLANDS FOR NON-ARMORED CABLES WITH MALE AND FEMALE THREADED ENTRY



NAVF, NAVN SERIES

NAVF (female threaded entry) and NAVN (male threaded entry) series cable glands have the technical features of NAV series.

- NAVF, NAVN available standard in nickel-plated brass. Other materials (galvanized steel - stainless steel) upon request.
- High-tech and high mechanical performance compression rings and gaskets with high-temperature resistance.
- NPT and isometric threads.

REVF, REVN series available while supplies last.

Group II, Category 2GD

Ex db IIC Gb
Ex eb IIC Gb
Ex tb IIIC Db

IP66/68

Zone 1-2-21-22

Nickel-plated brass standard

BARRIER CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



NAVB, NEVB SERIES

NAVB and NEVB series barrier cable glands are used for the direct insertion of cables into Ex d boxes. Every single conductor is locked and 'Ex d' sealed into the bushing using a special sealing compound which prevents the propagation of flames. Therefore, they are used instead of the locking joint in conduit installation. They are supplied with a resin finishing kit. Many accessories are available: shrouds, earthing ring, locknut and gasket for parallel threads.

- Nickel-plated brass. Other materials (galvanized steel - aluminium - stainless steel) upon request.
- Bi-component epoxy resin for extreme temperatures
- Different threads available.

Group II, Category 2GD/3G

Ex db IIC Gb - Ex eb IIC Gb
Ex tb IIIC Db
Ex nR IIC Gc

IP 66/67

Zone 1-2-21-22

Nickel-plated brass standard

POLYAMIDE CABLE GLANDS FOR NON-ARMORED CABLES



UNI SERIES

UNI series cable glands in polyamide are used for the direct insertion of non-armoured cables into 'Ex e' or 'Ex i' equipment or junction boxes. They can be easily installed and the clamping is obtained on the cable external sheath.

- Polyamide 6, neoprene gaskets.
- ISO lead 1,5 thread for UNI series.
- Ral 9005 black color (Ex e) or Ral 5015 blue color (Ex i).
- 7J impact resistance.

Group II, Category 2GD

Ex e IIC Gb
Ex tb IIIC Db
IP 66/68

Zone 1-2-21-22

Polyamide

LOCKNUTS, EARTHING RINGS, PVC SHROUDS, GASKETS



DL, DL...EP, DL...A, A, PGA, GRN, RDI SERIES

These materials are used as cable gland accessories. DL, DL...EP and DL...A series are used as locknuts with parallel thread. Earthing rings A series are used inside boxes and their connection is guaranteed by the coupling of cable gland and its locknut. PGA series shrouds, TPV made, are ideal to guarantee a further protection to cable glands against dust and liquids. Furthermore, GNR gaskets in Teflon are used to guarantee, together with the cable gland, the IP protection of enclosures threaded hubs.

- Locknuts threads: DL and DL...A series ISO 228; DL...EP series ISO lead 1,5. Other threads upon request.
- Earthing rings: nickel plated brass. Stainless steel earth screw. Other materials upon request.
- RDI serrated or shake-proof washers act as an anti-vibration device to prevent the cable gland from loosening. It can be also used as an earth enhancing device on painted enclosures.

Locknuts materials:

DL series galvanized steel or aluminium;

DL...A series carbon steel or aluminium; DL...EP series polyamide.

THREE PIECES UNIONS



BFF, BMF, BMM SERIES

Three pieces unions for gas group IIB are used to guarantee an independent rotation and the connection between pipes of an electrical equipment, enclosures or different devices of an explosion-proof system.

- BFF series (female/female); BMF series (male/female); BMM series (male/male).
- ISO 7/1 thread.
- Different threads available.

Group II, Category 2GD

Ex d IIB Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel or stainless steel.

THREE PIECES UNIONS



RFF, RMF, RMM SERIES

Three pieces unions for gas group IIC are ideal to guarantee an independent rotation and the connection between pipes of an electrical equipment, enclosures or different devices of an explosion-proof system.

- RFF series (female/female); RMF series (male/female); RMM series (male/male).
- ISO 7/1 thread.
- Different threads available.

Group II, Category 2GD

Ex d IIC Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel or stainless steel.

ELBOWS AND OPEN ELBOWS



ELF, ELM, ELMF, LBH, LBHS SERIES

90° non-inspectable elbows are used in conduit system of electrical equipment. They are available in the following configurations: ELF series (female/female), ELM series (male/male) and ELMF series (male/female). The male entry for ELM and ELMF series elbows is obtained with the addition of a nipple NP series. LBH and LBHS series L shaped open elbows are used for the cables insertion in conduit system of electrical installations. The flanged opening enables an easy inspection and insertion of electrical cables.

- ELF, ELM, ELMF series: low copper content aluminium alloy.
- LBH, LBHS series: body and cover in low copper content aluminium alloy. Galvanized screws.
- Different threads available.

ELF, ELM, ELMF series
Group II, Category 2GD
Ex d IIC Ex tD A21
Ex e II Ex tD A21

LBH, LBHS series
Group II, Category 2G
Ex d IIB

IP66/67

Zone 1-2

Low copper content aluminium alloy

PULLING BOXES



EKC SERIES

EKC pulling boxes are used in conduit system of electrical equipment to facilitate the cables insertion. The flanged opening enables an easy inspection and insertion of electrical cables.

- Body and cover in low copper content aluminium alloy.
- Galvanized screws.
- Stainless steel screws.
- Different threads available.

Group II, Category 2G

Ex d IIB

Zone 1-2

Low copper content aluminium alloy

VERTICAL AND HORIZONTAL SEALING FITTINGS



EYS, EYD, EZS SERIES

Sealing fittings prevent the passage of gas, vapors or flames through pipes system. EYS series vertical fittings are available in two different dimensions: the first up to 1"; the second up to 3" with an additional lateral opening for an easy insertion of glass-fiber and sealing compound resin. EZS series are used for both vertical and horizontal mounting. The fittings must be installed as close as possible to the 'Ex d' junction box and must be filled using CRV 420 approved resin supplied in a precise quantity along with the fitting.

- Other sealing compounds are not allowed.
- Possibility to add an ECD valve to drain the condensation inside the conduit. Code EYD... series.
- Different threads available.

Group II, Category 2GD

Ex d IIC Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

REDUCERS AND ADAPTORS



RE, REB, REM, REN SERIES

Reducers and adaptors are used to connect equipment, enclosures, pipes and hubs of different diameters and threads. The series of adaptors is as follows: RE series reduces a female hub or increases a male hub; REB series increases a female hub or reduces a male hub; REM series is used to vary the diameter of a male hub transforming it into a female hub; on the contrary, REN series varies the diameter of a female hub transforming it into a male hub.

- Galvanized steel or low copper content aluminium alloy.
- Different threads available.
- Other materials (brass, stainless steel).

Group II, Category 2GD

Ex d IIC Ex tD A21

Ex e II Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel or low copper content aluminium alloy

DRAIN AND BREATHER VALVES



ECD, ECDE SERIES

ECD drain or breather valves are used on EYD or EZD series sealing fittings and on any type of ex-proof devices where it's necessary to drain the condensation inside the conduit or to breathe out possible internal vapors.

ECDE series automatic drainage and breather valves facilitate a continuous drainage and breathing of 'Ex e' junction box, avoiding the periodic manual discharge while ensuring a suitable IP degree of protection.

- ECD series: AISI 316 stainless steel or aluminium alloy upon request. Different threads available.
- ECDE series: AISI 316 stainless steel or nickel-plated brass. Silicone gaskets. Internal filter and seeger in stainless steel.

ECD 1... series

Group II, Category 2G

Ex d IIC Gb

Ex d IIB Gb

ECDE 2... series

Group II, Category 2GD

Ex d IIC Gb/IIB Gb - Ex e IIC Gb/IIB Gb - Ex tB IIC Db

ECDE... series

Group II, Category 2GD

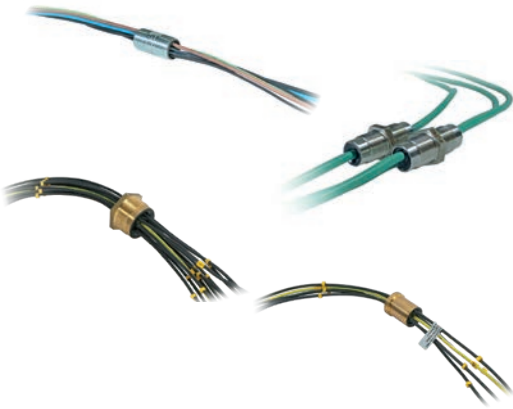
Ex eb IIC Gb Ex tB IIC Db

IP66

Zone 1-2

Stainless steel or nickel-plated brass

NIPPLES AND SEALED BUSHINGS



NPS, TP, CP SERIES

Sealed bushings and nipples are suitable to interconnect junction boxes, electrical motors, panel boards, switch racks and other electrical devices. The standard sealed bushings are: TP threaded sealed bushings, CP sealed bushing with cylindrical joint, NPS sealed nipple. The cables are sealed using a sealing compound bi-component resin set around each conductor.

- NPS, TP, CP series are made in brass, galvanized steel and stainless steel with bi-component resin.
- NPS series is also available for thermocouples.

NPS, TP, CP series
Group II, Category 2G
Ex d IIC
Zone 1 - 2

Brass and other materials.

NIPPLES, COUPLINGS, BUSHINGS AND PLUGS



NP, EM, DB...A, DB...PVC, DBT, MC, PLG SERIES

NP series nipples are used to connect equipment or other unions with female hub.
EM series couplings are used for the connection of pipes with threaded male ends. DB...A and DBT series bushings are made in aluminium whereas DB...PVC in PVC. They are screwed to the pipe and they work as a cable guard. They prevent the cable from rubbing on any pipe burr/edge which could damage it. MC series female plugs and PLG series male plugs are used to close pipes ends and unused entries. NP series are made in galvanized steel or stainless steel. Other threads upon request

- DBT series are equipped with earth screw for reduction grounding.
- PLG series plugs have a hexagonal head so that they can be opened with proper tools only.

EM, PLG series
Group II, Category 2GD
Ex d IIC Ex tD A21
Ex e II Ex tD A21

NP series
Group II, Category 2GD
Ex d IIC Ex tD A21
Ex e II Ex tD A21

IP 66/67

Zone 1 - 2 - 21 - 22

EM series in galvanized steel. MC and PLG series in galvanized steel or low copper content aluminium alloy. NP galvanized steel, stainless steel.

SADDLES, CONDUIT CLAMPS AND U-BOLTS



GF, MP, MT, UBD SERIES

GF series saddles are used to fix conduits/rigid pipes (carrying cables) on walls or on flat surfaces. MP and MT series conduit clamps are ideal to mount conduit pipes in parallel or in perpendicular to the support structure. UBD series are used to fix rigid conduit pipes to flat surfaces.

- Galvanized steel standard or aluminium for GF series saddles. Stainless steel upon request for GF and UBD series.
- Galvanized bolts and nuts for MP and MT series.

FLEXIBLE AND RIGID CONDUITS



SP, BC SERIES

SP series flexible conduits are used to connect offset equipment or devices subject to vibrations such as electrical motors. Furthermore, they are suitable for installation of lighting fixtures and, in alternative, to rigid conduits when they are difficult to install. BC series rigid conduits are used in hazardous areas to connect electrical equipment setting up a complete explosion-proof system through blocking and connecting unions and sealing fittings.

- SP series conduits have a good flexibility and an excellent damping effect against vibrations.
- BC series conduits are drawn inside so that all roughness, which could damage the electrical cables, are eliminated.
- BC series standard bar length: 6 meters. Plastic couplings for thread protection.
- ISO7/1 thread. Other threads available.

SP flexible conduits
Group II, Category 2GD
Ex d IIB Gb Ex tb IIIC Db
Ex d IIC Gb Ex tb IIIC Db

IP 66/67

Zone 1 - 2 - 21 - 22

Galvanized steel

WATERPROOF JUNCTION BOXES



CS, CSG, CS.../P, CS...SS SERIES

CS series waterproof junction boxes, in aluminium alloy, GRP and stainless steel, are suitable for containing any electrical and electronic equipment. Thanks to their design and features, they are ideal for any industrial environment.

- Stainless steel screws and bolts.
- Silicone gasket.
- Internal/external earth screws.
- Fixing lugs. RAL 7035 polyester coating for aluminium version.

IP66

Low copper content aluminium alloy, GRP and stainless steel.

CTBEW SERIES

CTBEW series waterproof junction boxes, in stainless steel, are suitable for containing any electrical and electronic equipment. They feature a wall thickness of 1,5 mm.

CONDULET



C, LB, LL, LR, LU, T, TB, X SERIES

These boxes are used in conduit installations as pulling boxes to prevent the entry of solids and liquids.

- Cover complete with elastomeric gasket and with galvanized steel fixing screws.
- ISO 228 parallel threaded hubs.
- Coating and other threads upon request.

IP55

Body and cover in low copper content aluminium alloy.

WATERPROOF CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



TEV, TEVD

TEV, TEVD cable glands are suitable for use in industrial plants for the direct insertion of non-armored and armored cables into waterproof equipment and junction boxes. The most important innovation of TEV, TEVD series is the use of one sealing ring on the inner and outer sheath of the cable.

- TEV, TEVD series: high-tech and high mechanical performance compression rings and gaskets with high-temperature resistance. Light weight and small dimensions. ISO7/1, NPT and isometric threads. Easy and quick installation.

IP66/67

Nickel-plated brass. Other materials (galvanized steel - stainless steel) upon request for TEV, TEVD series.

LOCKNUTS, EARTHING RINGS, PVC SHROUDS, GASKETS



DL, DL...EP, DL...A, A, PGA, GRN, RDI SERIES

These materials are used as cable gland accessories. DL, DL...EP and DL...A series are used as locknuts with parallel thread. Earthing rings A series are used inside boxes and their connection is guaranteed by the coupling of cable gland and its locknut. PGA series shrouds, TPV made, are ideal to guarantee a further protection to cable glands against dust and liquids. Furthermore, GNR gaskets in Teflon are used to guarantee, together with the cable gland, the IP protection of enclosures threaded hubs.

- Locknuts threads: DL and DL...A series ISO 228; DL...EP series ISO lead 1,5. Other threads upon request.
- Earthing rings: nickel plated brass. Stainless steel earth screw. Other materials upon request.
- RDI serrated or shake-proof washers act as an anti-vibration device to prevent the cable gland from loosening. It can be also used as an earth enhancing device on painted enclosures.

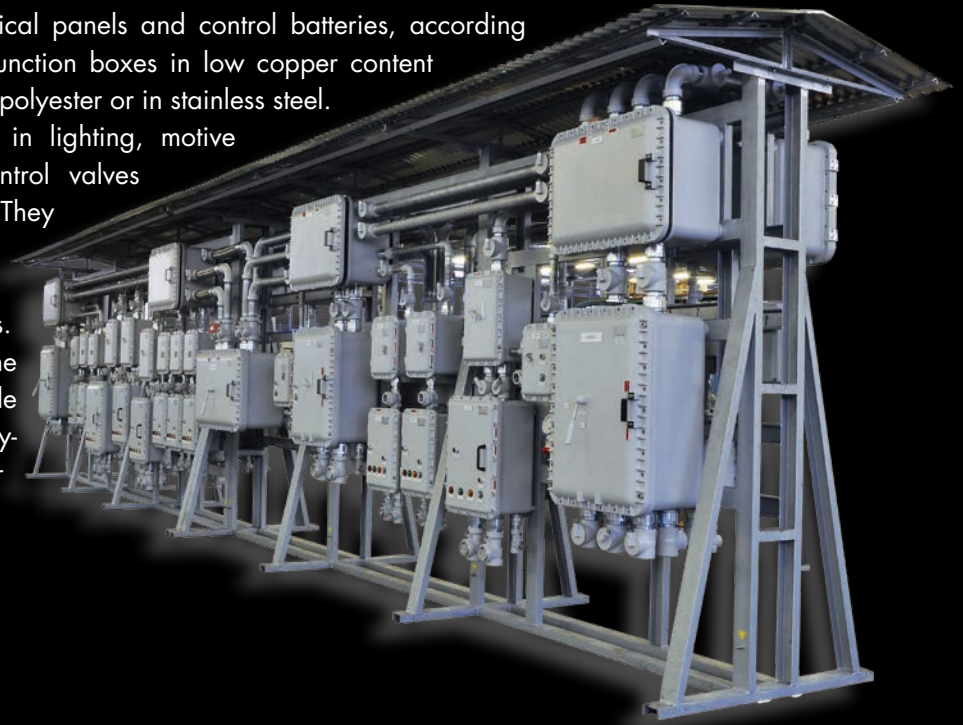
Locknuts materials:

DL series galvanized steel or aluminium;

DL...A series carbon steel or aluminium; DL...EP series polyamide.

SWITCHGEARS AND PANEL BOARDS

Cortem Group manufactures electrical panels and control batteries, according to customer's specification, using junction boxes in low copper content aluminium alloy, in glass reinforced polyester or in stainless steel. Such equipment can be installed in lighting, motive power distribution and motor control valves systems and in panels with sockets. They are provided with various current rated switches, control or signal electrical and electronic devices. They are made in accordance to the main types of protections suitable for heavy-duty environments, ready-to-use and finished with polyester powder paint.



Example of Cortem Marking Label

SAFETY AND QUALITY

MANAGEMENT SYSTEM CERTIFICATIONS

Cortem Group manufactures its products using modern processes, plants and qualified personnel. There's an internal control system of all the productive-cycle which guarantees more efficiency, autonomy and velocity. The Quality Management System conforms to UNI EN ISO 9001:2015 Standard. The Environmental Management System is also a part of the Organization overall management system which promotes activities in order to maintain and improve the environment and territory quality. It conforms to UNI EN ISO 14001:2015 Standard. Furthermore, Cortem Group has developed an Occupational Safety and Health Management System certified according to OHSAS 18001:2007 Standard.



PRODUCT CERTIFICATIONS

The explosion-proof and water-proof electrical equipment manufactured by Cortem Group are certified in accordance with the European standard ATEX and the International regulation IEC Ex, also obtained the Brazilian INMETRO certifications and the TR CU certifications attesting the conformity of the production with the standards of the Customs Union formed by the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation. Respecting these strict international construction rules, Cortem guarantees the safety of people and environment.



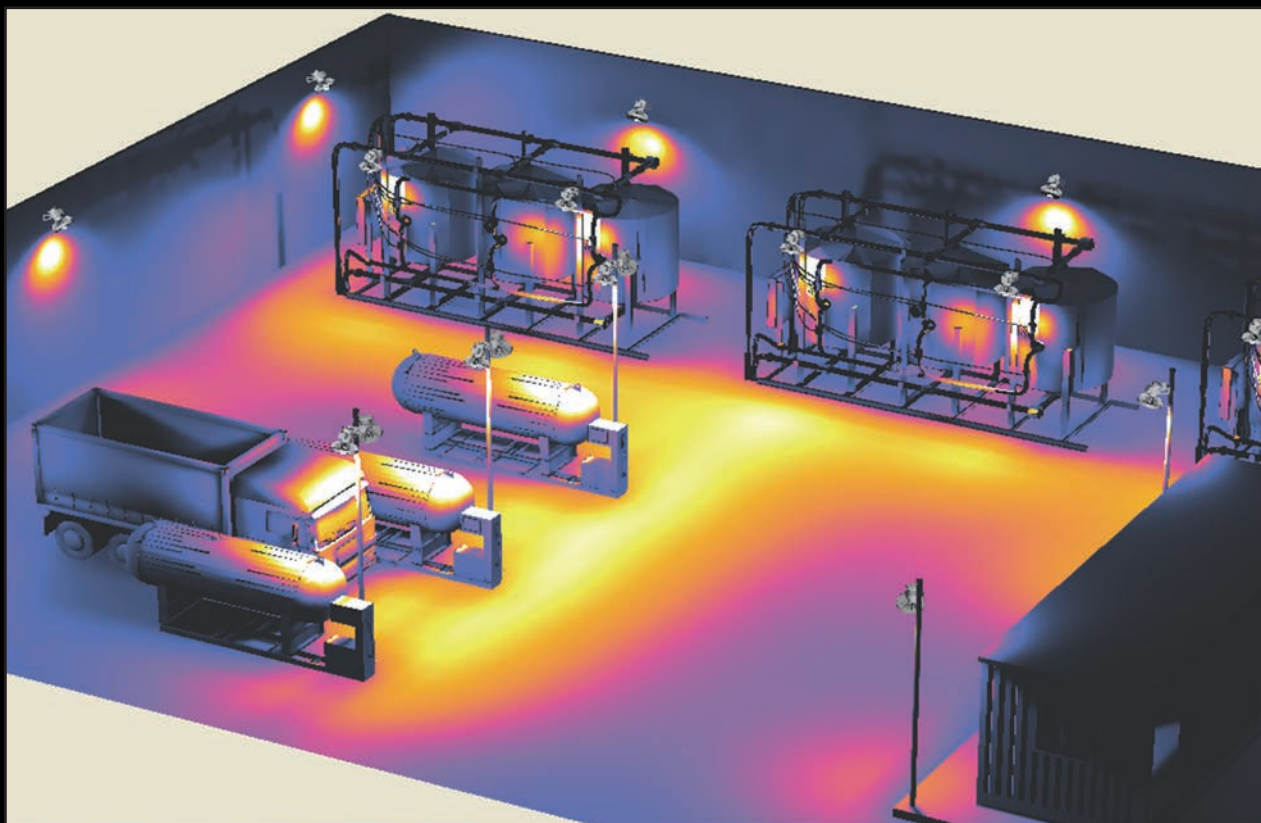
"NO FAKE" PROJECT

Cortem Group "No Fake" project tackles the counterfeiting of products. The authenticity of Cortem products is guaranteed by the application of an adhesive label with holographic image, an alphanumeric code and a QR code for smartphone readers. The correctness of the alphanumeric code can be checked on Cortem web site www.cortemgroup.com. The material is a new tamper-evident metallic base for high refractive index holograms, while the image was originated on Cortem Group graphics with technologies used by current banknote and document of identity applications.



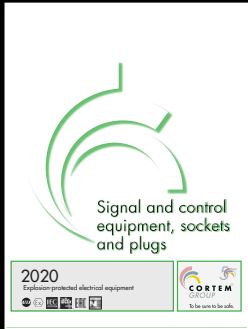
PHOTOMETRIC FILES FOR LIGHTING PROJECTS

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. 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 FURTHER INFORMATION ON OUR PRODUCTS AND CERTIFICATIONS DOWNLOAD
VISIT US AT WWW.CORTEMGROUP.COM.

Cortem Catalogs List



Signal and control equipment,
sockets and plugs

LED Lighting Solutions



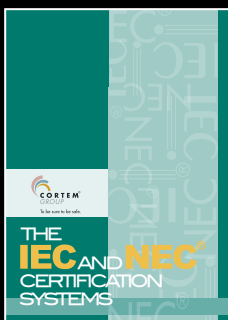
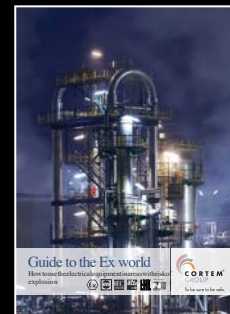
Lighting and Signalling

Junction Boxes



Cable glands and
electrical fittings

Guide to the Ex world



The IEC and NEC
certification system

Worldwide Network

Branch Offices, Agents and Distributors



To be sure to be safe



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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To be sure to be safe.

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