

C&E *group*

rev_221006

H4air

**HYDROGEN ENERGY
FOR CLIMATE**

www.h4air.com



The C&E Group SRL group designs and manufactures equipment for areas classified as at risk explosion since 1988. Nowadays we can offer a full range of enclosures suitable for potentially explosive environment, where there is the presence of hydrogen (IIB + H2 and IIC).

We can offer a complete range of obstacle warning lights and heliport lights certified for installation in areas at risk of explosion.

All products are designed and manufactured in Italy and certified ATEX, IECEx, INMETRO and PESO. The company itself is ATEX and IECEx approved.

We can offer customized solutions.

INDEX

VERTIPORT

- ▶ What is a Hydrogen? 07
- ▶ What is Advanced Mobility? 08

HELIDECK LIGHTS

- ▶ Repeater status light Ex d IIC 14

AIRCRAFT WARNING LIGHTS

LOW INTENSITY OBSTRUCTION LIGHT

- ▶ LIOL-A Ex, LIOL-B Ex and LIOL-E Ex 24

MEDIUM INTENSITY OBSTRUCTION LIGHT

- ▶ MIOL-B Ex eb mb op is and MIOL-C Ex eb mb op is 29
- ▶ MIOL-A Ex eb mb op is 32
- ▶ MIOL-AB Ex eb mb op is and MIOL-AC Ex eb mb op is 35

EX ENCLOSURES

EJB SERIES ENCLOSURES

- ▶ EJB series - Technical specifications 41
- ▶ EJB series - Aluminium dimensions 42
- ▶ EJB series - Aluminium drawings 43
- ▶ EJB series - Stainless Steel dimensions 44
- ▶ EJB series - Stainless Steel drawings 45
- ▶ EJB series - Windows dimensions and drawings 46
- ▶ EJB series - Features 48
- ▶ EJB series - Operators 50

INDEX

GUB SERIES ENCLOSURES

▶ GUB Series - Technical specifications	53
▶ GUB Series - Aluminium and AISI 316L dimensions	54
▶ GUB Series - Aluminium and AISI 316L general drawings	55
▶ GUB Series - Aluminium dimensions and drawings - with windows	56
▶ GUB Series - Features	57

INSTRUMENT ENCLOSURES AND TERMINAL BOXES

▶ Instrument Enclosures - Technical specifications	61
▶ AISI 316L Instrument Enclosures - Drawings and Dimensions	63
▶ Aluminium Instrument Enclosures - Drawings and Dimensions	64
▶ Terminal Boxes - Technical specifications	65
▶ AISI 316L and Aluminium Terminal Boxes - Drawings and Dimensions	67

CONTROL STATIONS AND TERMINAL BOXES

▶ AISI 316L Control Stations - Technical specifications	69
▶ AISI 316L Control Stations - Dimensions	71
▶ AISI 316L Control Stations - Drawings	73
▶ GRP Control Stations - Technical specifications	74
▶ GRP Control Stations - Dimensions	76
▶ GRP Control Stations - Drawings	77
▶ AISI 316L Terminal Boxes - Technical specifications	78
▶ AISI 316L Terminal Boxes - Dimensions	80
▶ AISI 316L Terminal Boxes - Drawings	82
▶ GRP Terminal Boxes - Technical specifications	83
▶ GRP Terminal Boxes - Dimensions	85
▶ GRP Terminal Boxes - Drawings	86



What is Hydrogen?

Hydrogen is the most prevalent element in the universe, representing about 92% of all known substances. It is a colorless and odorless gas, not perceptible to the human senses, classified as "extremely flammable" and capable of forming explosive mixtures with air.

Hydrogen flammability

Flammability is the most relevant chemical property of hydrogen.

Hydrogen reacts with all oxidizing agents, such as oxygen, chlorine, nitrous oxide etc., provoking exothermic reactions.

If there was of an ignition source, reactions could become explosive, especially indoors.

The energy required to ignite hydrogen in the air is very low: about 10% compared to that necessary for the LPG.

The hydrogen flame is very hot and pale, in daylight it may not be visible.

Hydrogen risk

Fire

A lack of hydrogen can easily ignite, even with weak sparks.

A loss of compressed hydrogen produces an invisible, very narrow and directional flame, which concentrates energy on a small area. Due to its low density and viscosity there is a risk of escaping from circuits and materials normally impermeable to other gases.

Explosion

Hydrogen could develop explosive mixtures with air, oxygen and other gases.

Explosion can occur due to certain circumstances:

- **presence of air in the circuit**
- **oxygen return from the torch**
- **flame return in pipes devoid of appropriate safety equipment**
- **indoors lack of gas**

Precaution

In order to avoid the presence of ignition sources, it is necessary to classify and identify the areas with risk of explosion, in accordance with current legislation.

In these areas, the electrical system must be explosion-proof and all equipment in use must be marked Ex (Dir. ATEX) of the appropriate category.

What is Advanced Mobility?

Technological innovation and, in particular, electrification and digitalisation are radically changing the world of aviation, making possible new ways of moving goods and people in urban areas and beyond. These new forms of transport, grouped under the name of Advanced Air Mobility (AAM), are projected towards the third dimension and digitalisation and are made possible thanks to the development of a series of innovative, safe, silent, sustainable and economical means of transport, which are better suited to operating in populated areas and to being integrated into the local transport system in a multimodal perspective and to improving overall accessibility.

Advanced Air Mobility is set to have a significant impact on the urban mobility sector for goods and people and its supply chain. In this scenario, countries and companies that remain focused on more traditional technology models will be unprepared to cope with new types of demand, and will deny their economies and populations important opportunities for growth and development.

H4AIR

C&E Group SRL is focusing on expand its supply range with products that could meet this brand new market's needs. Thanks to its ten-year experience in airport lights, heliport lights, aircraft warning lights and control systems design and development, C&E Group engineering department is confident about its contribution for advanced mobility integration on national and international territory. H4AIR is a registered trademark.

H4AIR is dedicated to vertiports, especially on hydrogen storage and refuelling infrastructures.

Hydrogen Powered

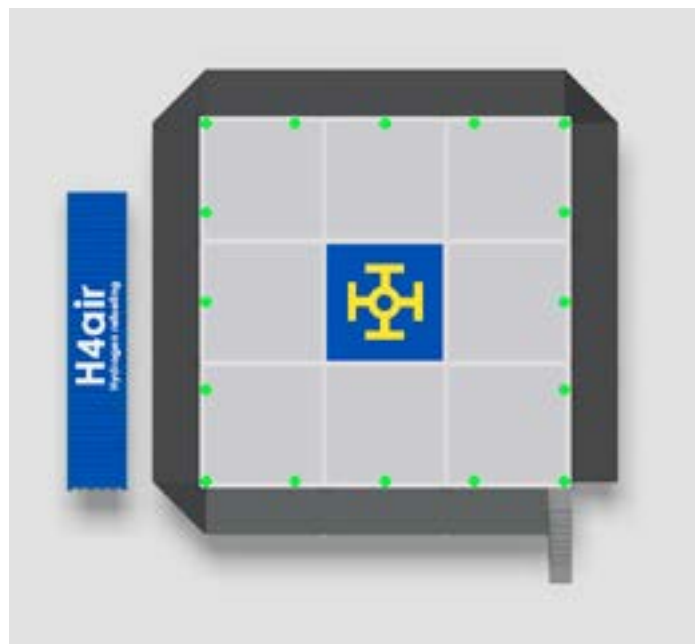
Vertiport (HPV)

Hydrogen Powered Vertiport is the solution for power recharge the people transport drones.

The HPV can be equipped with one of the following:

- Drone tank refill
- Drone cylinders replacement

Hydrogen can be produced locally or transported by truck and stored.



H4AIR



Rendering of Vertiport installed in a urban green area.



Rendering of Vertiport installed in a public space (such as sport recreation center).

Hydrogen powered stand (HPS)

Hydrogen Powered Stand is the first concept born in R&D department. It's a vertiport for landing and power recharge of surveillance drones through hydrogen fuel cell: via induction from 50 to 500 kw.

Stand side walls, could be dedicated to advertisements and public transports timetables goods distributors and or toilet can be installed.



HPS with toilet.



HPS with goods distributors.

H4AIR



HPS with AED.



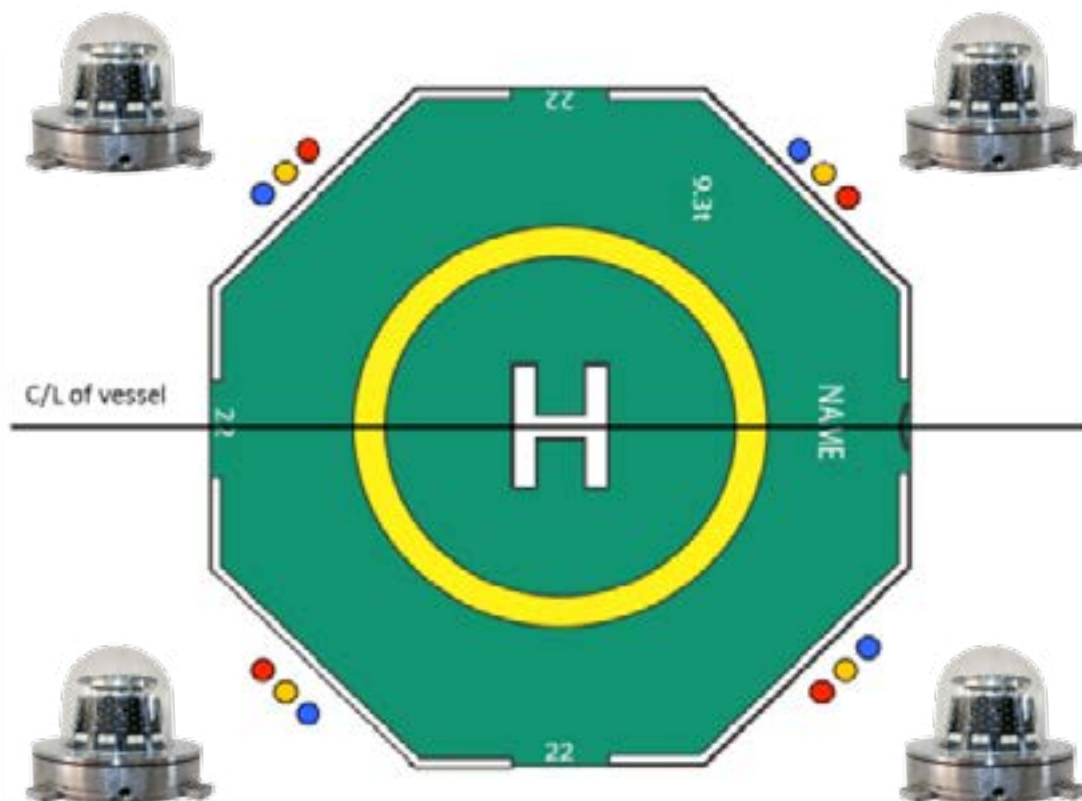
HPS with advertisement.





EX HELIDECK LIGHTS

HELIDECK MONITORING SYSTEM REPEATER STATUS LIGHTS Explosion Proof Ex d IIC - Zone 1/21/2/22



According to **CAP437 "Standards for Offshore Helicopter Landing Areas" 8th Edition Amendment 1**, from 1st April 2021 all moving helidecks must be provided with a **Helideck Monitoring System compliant with Rev.9 or later of the standard published on the Helideck Certification Agency's website.**

The Helideck Monitoring System provides information on helideck movement and includes a helideck mounted light signalling system. **This system indicates the motion status of the helideck directly to pilots prior to landing, and provides warnings of any deterioration in conditions after landing.**

HELIDECK

REPEATER STATUS LIGHT Ex d IIC

Tempered glass dome

Light specifically designed to comply with CAP 437

SS316L body enclosure

Explosion Proof certified light Ex d
IIC - Zone 1 / 21 / 2 / 22

Terminal box



<150mm light elevation from helideck surface

IP66

HMS-LXS-Ex Helideck Monitoring Light System is realized as **fully in compliance with CAP437 and ATEX/IECEx standards EN60079-0 and EN60079-1.**

With a **compact body specifically designed to respect Explosion Proof rules requirements, high quality materials such as SS316L and borosilicate for maximum resistance to salt-atmosphere during the years, high quality and ultra-bright LEDs, customized lenses for optimum light emission, HMS-LXS-Ex beacons are the most up-to-dated and technologically advanced lighting system for Helideck operations.**

The system comes with a **dedicated control panel that can be provided suitable for safe or hazardous area, easy and quick to install and connect to helideck Motion Monitoring System for an high performance and safe lighting system.**

CERTIFICATION



COMPLIANCE



FEATURES



TYPICAL APPLICATION



HELIDECK

REPEATER STATUS LIGHT Ex d IIC TECHNICAL SPECIFICATION

OPTICAL FEATURES

- Based on LED technology
- AMBER/RED/BLUE light in one light fixture
- FLASHING/STEADY burning mode as per CAP437 (see page 4)
- Horizontal beam radiation: 360°
- Vertical beam spread: as per CAAi rule
- ATEX and IECEx certified (certifications ongoing)

LIGHT MECHANICAL FEATURES

- SS316L body material, natural finish
- SS316L fixing bracket, natural finish
- Borosilicate glass cover protection
- Degree of protection: IP66
- Ambient temperature: -50°C to +60°C
- Lamp unit weight: 19Kg

PANEL MECHANICAL and ELECTRICAL FEATURES

Common features:

- Complete with LUXSOLAR electronic components for HMS Repeater System operation
- Complete with 3 contacts to connect to helideck's Helideck Monitoring System (HMS)
- Power consumption for HMS Repeater Light LUXSOLAR system (4HMS lights + 1 Control Panel): 300W approx

Specific features for Safe Area Control Panel:

- Available in carbon steel (painted RAL7035) or SS316L (natural finish) material
- Ambient temperature: -20°C to +50°C

Specific features for Hazardous Area Control Panel:

- Available in SS316L (natural finish) or aluminium (painted RAL7035) material
- Ambient temperature: -50°C to +50°C

APPLY TO

- Vessel
- Floating Production Unit
- Semi-Submersible Rig
- Floating Jack Up Rig
- Any other moving helideck

COMPLIANCE

- CAP437 - Standards for Offshore Helicopter Landing Area, 8th Edition Amendment 1
- Standard Measuring Equipment for Helideck Monitoring System (HMS) and Weather Data, Rev. 9b



ORDER CODE

HMS-LXS-Ex-

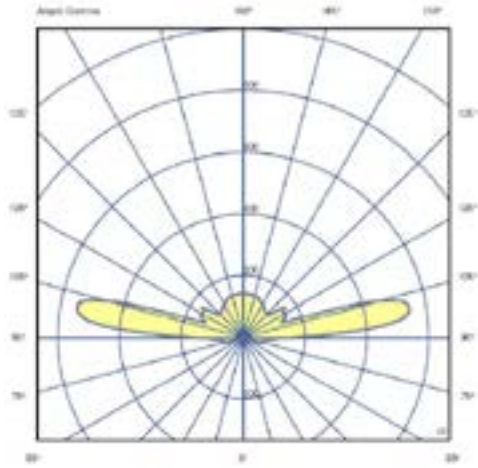
Number of lights per system = N

IP = Panel suitable for safe area

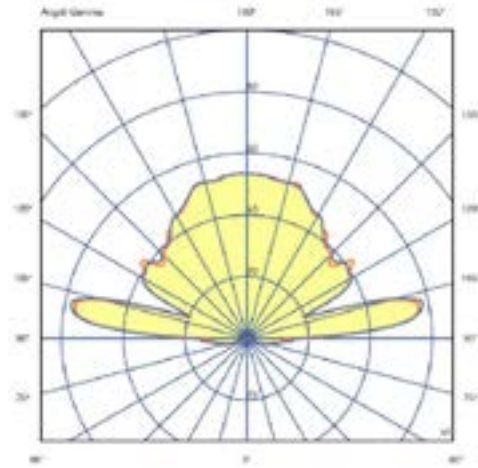
Ex = Panel suitable for hazardous area

HELIDECK

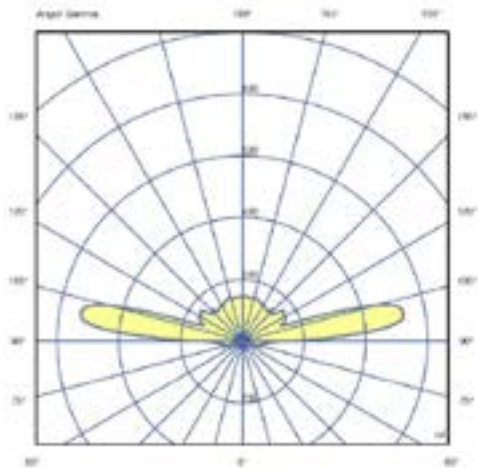
REPEATER STATUS LIGHT Ex d IIC LIGHT DISTRIBUTION STEADY



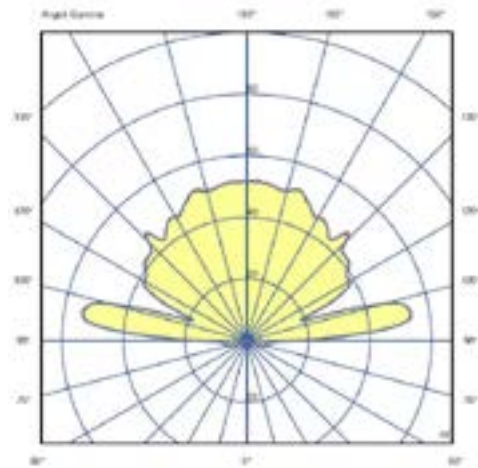
AMBER LIGHT DAY



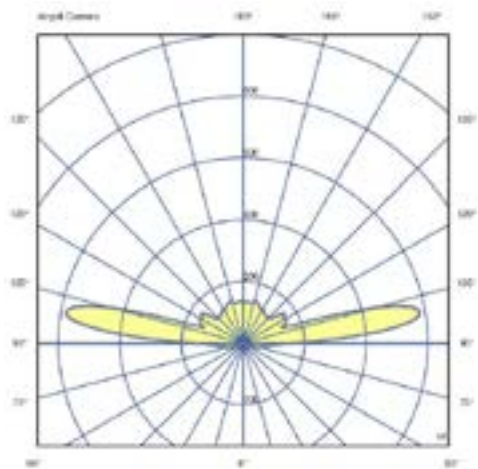
AMBER LIGHT NIGHT



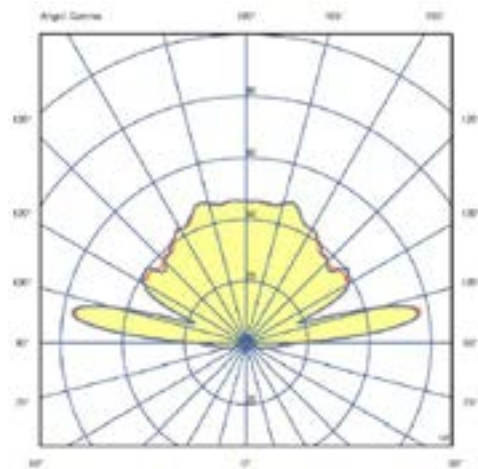
RED LIGHT DAY



RED LIGHT NIGHT



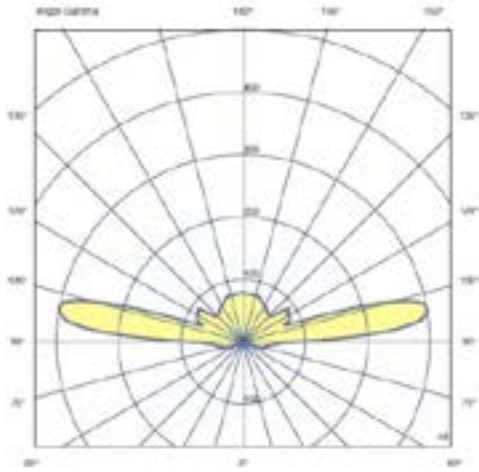
BLUE LIGHT DAY



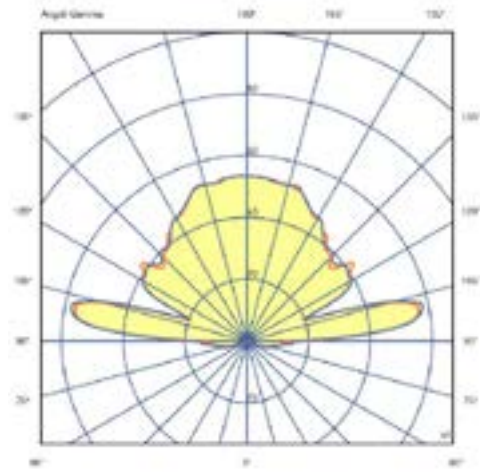
BLUE LIGHT NIGHT

HELIDECK

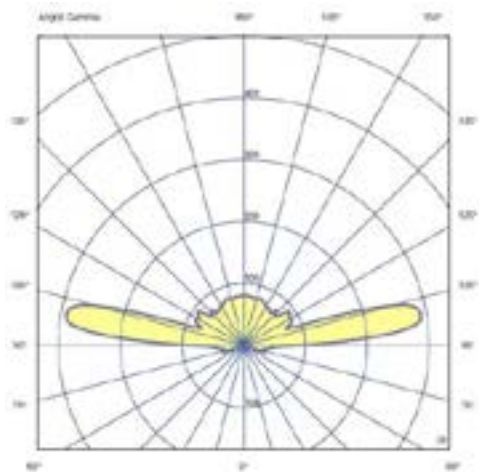
REPEATER STATUS LIGHT Ex d IIC LIGHT DISTRIBUTION FLASHING



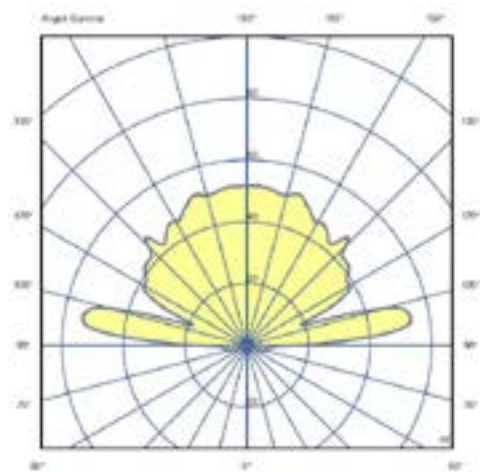
AMBER LIGHT DAY



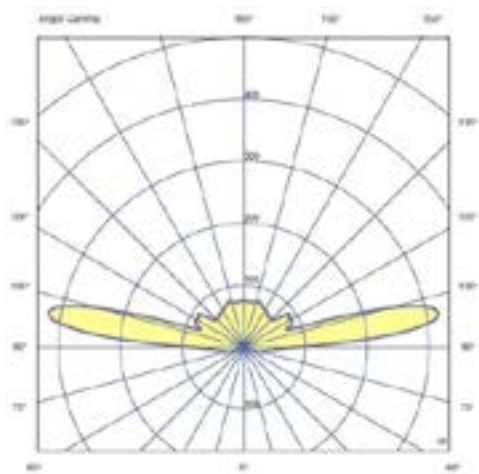
AMBER LIGHT NIGHT



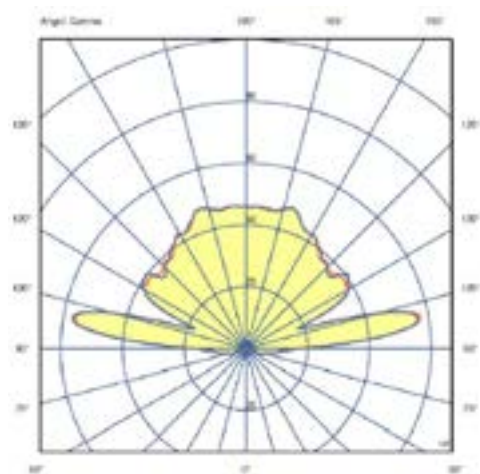
RED LIGHT DAY



RED LIGHT NIGHT



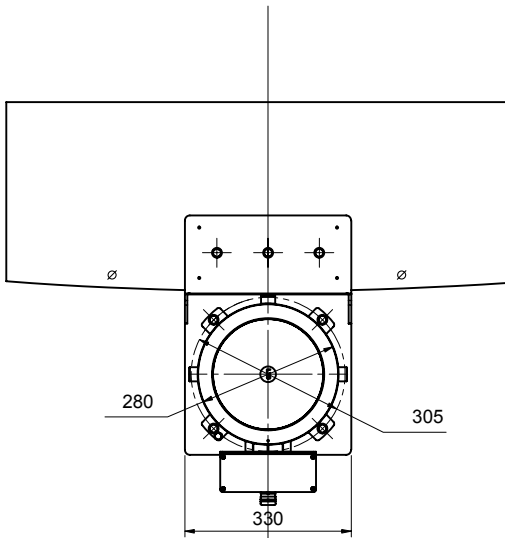
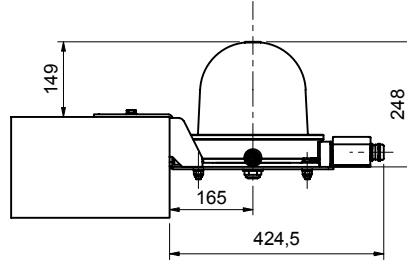
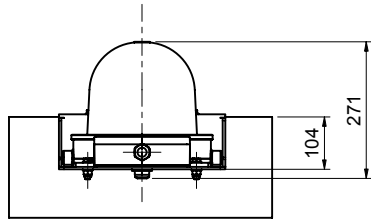
BLUE LIGHT DAY



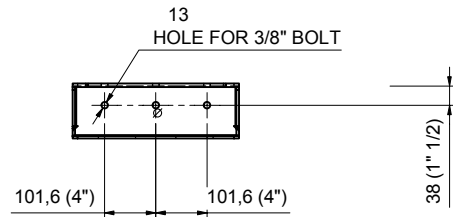
BLUE LIGHT NIGHT

HELIDECK

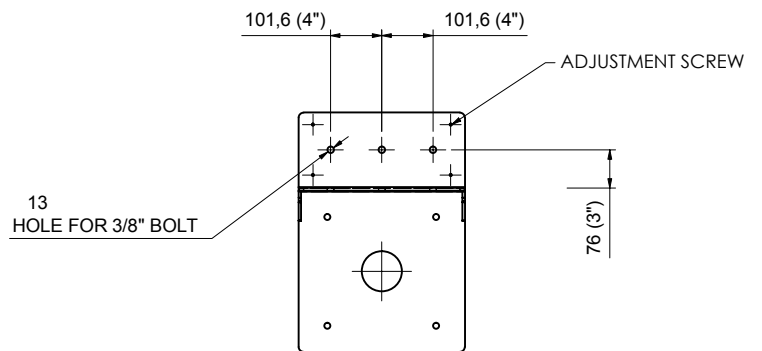
REPEATER STATUS LIGHT Ex d IIC TECHNICAL DRAWINGS



LATERAL FIXING



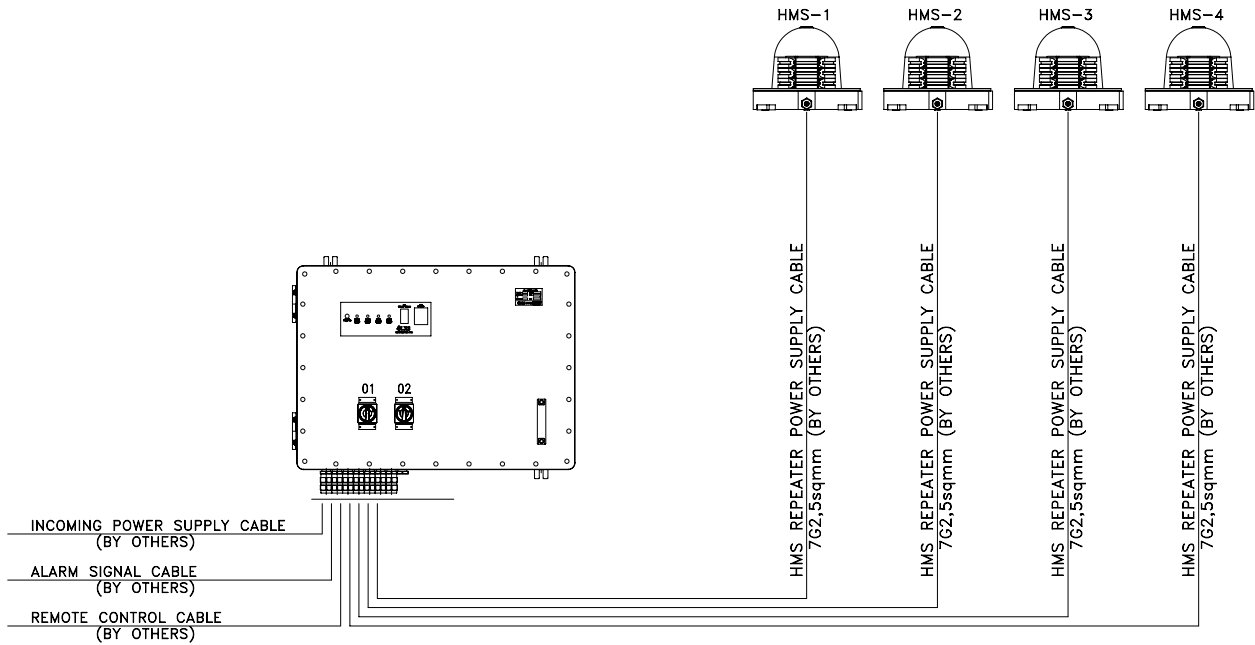
TOP FIXING



HELIDECK

REPEATER STATUS LIGHT Ex d IIC TECHNICAL DRAWINGS

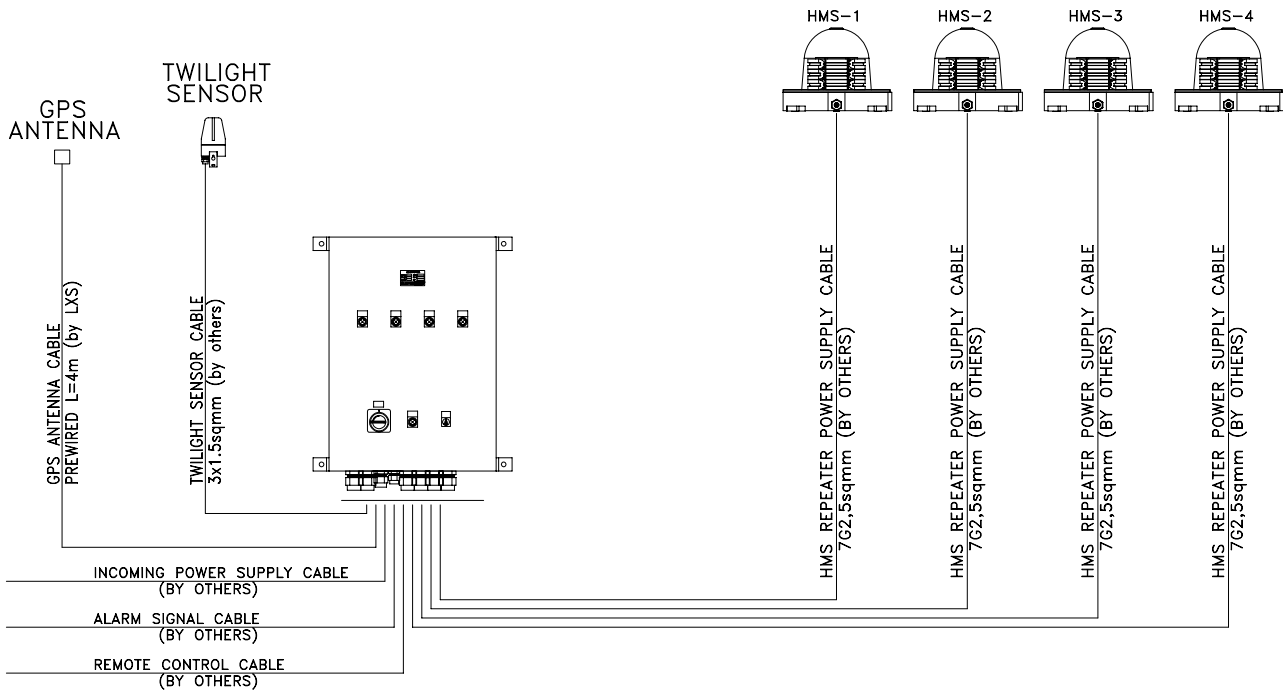
TYPICAL CONFIGURATION HAZARDOUS AREA PANEL



HELIDECK

REPEATER STATUS LIGHT Ex d IIC TECHNICAL DRAWINGS

TYPICAL CONFIGURATION SAFE AREA PANEL





Dasa-Rägister

IQ-1200-15
Certificato n°

2000-12-30
Data di prima emissione
First issue date

2020-02-05
Data di ultima emissione
Last issue date

2023-02-12
Data di rinnovo
Expire date



CEO

Dasa-Rägister S.p.A.
certifica che il sistema di gestione per la qualità è
certifies that the quality management system of

Combustion and Energy S.r.l.
Italia - 23848 - Oggiono (Lecco) - Via per Dolzago, 21

È stato verificato e trovato conforme ai requisiti dello standard
It has been assessed and found in compliance with the standard requirements

UNI EN ISO 9001:2015

Per le seguenti attività come oggetto
For the following activities having as object
Progettazione e produzione di sistemi di segnalazione ottocolori al volo per aree sicure e classificate,
caselle per aree classificate, strumenti e sistemi di controllo e comando per il rilevamento e l'innescio della
combustione negli impianti chimici, petrolchimici e per la produzione di energia
Design and production of Aircraft Warning Light Systems for safe and hazardous area, enclosures for
hazardous area, flame detection and ignition systems for chemical, petrochemical and energy production
plants

Settori - Sectors 19

Dasa-Rägister S.p.A.
Italy - 20171 Pinerolo - Torino
Via dei Cavallotti, 12
Tel. +39 011 262202
Fax +39 011 262120
www.dasa-raegister.com



Informazioni generali e aggiuntive sono in sede
general information and additional information are
available at the issuing office or on the website
www.dasa-raegister.com

Questo documento è un Sistema di Gestione Qualità
certificato secondo la norma UNI EN ISO 9001:2015
in virtù di essere iscritta a un registro di
certificazione per attività di progettazione e
produzione di sistemi di segnalazione ottocolori al
volo per aree sicure e classificate, caselle per
aree classificate, strumenti e sistemi di controllo e
comando per il rilevamento e l'innescio della
combustione negli impianti chimici, petrolchimici
e per la produzione di energia.

Refer to the Document of the Quality Management System
certified according to the standard EN ISO 9001:2015
in virtue of being registered in a register of
certification for activities of design and production of
aircraft warning light systems for safe and hazardous
area, enclosures for hazardous area, flame detection
and ignition systems for chemical, petrochemical and
energy production plants and to its scope and
activities.



Dasa-Rägister

IS-0217-01
Certificato n°

2017-02-17
Data di prima emissione
First issue date

2021-02-07
Data di ultima emissione
Last issue date

2023-02-16
Data di rinnovo
Expire date



CEO

Dasa-Rägister S.p.A.
certifica che il sistema di gestione per la sicurezza di
certifies that the safety management system of

Combustion and Energy S.r.l.
Italia - 23848 - Oggiono (LC) - Via per Dolzago, 21

È stato verificato e trovato conforme ai requisiti dello standard
It has been assessed and found in compliance with the standard requirements

UNI ISO 45001:2018

Per le seguenti attività come oggetto
For the following activities having as object
Progettazione e produzione di sistemi di segnalazione ottocolori aerei, strumenti e sistemi di controllo e
comando per il rilevamento e l'innescio della combustione negli impianti chimici, petrolchimici e per la
produzione di energia
Design and production of aircraft warning light systems, control instruments by flame detection and
ignition systems and energy production in chemical and petrochemical plants

Settori - Sectors 19

Dasa-Rägister S.p.A.
Italy - 20171 Pinerolo - Torino
Via dei Cavallotti, 12
Tel. +39 011 262202
Fax +39 011 262120
www.dasa-raegister.com



Informazioni generali e aggiuntive sono in sede
general information and additional information are
available at the issuing office or on the website
www.dasa-raegister.com

Questo documento è un Sistema di Gestione della
Sicurezza certificato secondo la norma UNI ISO 45001:2018
in virtù di essere iscritta a un registro di
certificazione per attività di progettazione e
produzione di sistemi di segnalazione ottocolori aerei,
strumenti e sistemi di controllo e comando per il
rilevamento e l'innescio della combustione negli
impianti chimici, petrolchimici e per la produzione
di energia.

Refer to the Document of the Safety Management System
certified according to the standard UNI ISO 45001:2018
in virtue of being registered in a register of
certification for activities of design and production of
aircraft warning light systems, control instruments by
flame detection and ignition systems and energy
production in chemical and petrochemical plants and
to its scope and activities.



PRODUCTION QUALITY ASSURANCE NOTIFICATION 

(1) Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU - Annex IV

(2) Notification Number: **EPT 22 ATEX 4875 Q** Issue 0

(3) Equipment: **Aircraft warning lights, Junction Boxes, Control and Signalling Units, Flame detection and ignition systems for chemical, petrochemical and energy production plants.**

Types of protection: **Ex d, Ex ia, Ex l, Ex m, Ex n, Ex op**

(4) Manufacturer: **Combustion and Energy S.r.l.**

(5) Sites of manufacture: **Via per Dolzago, 21 - 23848 Oggiono (LC) - Italy**

(6) Eurofins Product Testing Italy S.r.l., notified Body N. 0471 in accordance with Article 21 of Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014, notifies that the Manufacturer has a production quality system which complies with Annex IV of the Directive. The quality system, in compliance with Annex IV of the Directive, also meets the requirements of Annex Vb.

(7) This Notification is based on Audit Report N. EPT 22 REL 210213056 issued on 2022-08-29 that includes also the list of the EU-Type Examination Certificates covered by this Notification. This Notification can be withdrawn if the Manufacturer no longer satisfies the requirements of Annex IV. The results of periodic re-assessment of the quality system are part of this Notification.

(8) This Notification can be withdrawn if the Manufacturer does not satisfy the production quality assurance re-assessment.

Date of first issue: 16-07-2019
Place and date of issue: Torino, 07-01-2022
This Notification is valid until: 17-07-2025


Giuseppe Baccioni
Director Responsible



EUROFINS PRODUCT TESTING ITALY S.R.L. - Via Cavour, 21 - 10198 TORINO - Italia
Notified Body n. 0471

IECEx Quality Assessment Report Summary

**INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

QAR Ref. No.: **CH/SEV/QAR19.001003** Page 1 of 1

QAR Free Ref. No.: **EPT22.REL.02/2213056** Status: **Issued**

Details of change: **Re-Assessment** Date of issue: **2022-08-09**

Site(s) audited: **Combustion and Energy S.r.l.
Via per Dolzago 21
23848 Oggiono (LC)
Italy** Valid until: **2025-06-13**
Audit date: **2022-06-14**

Issuing EXCB: **SEV - Eurofins Electric & Electronic Product Testing AG**

Manufacturer: **Combustion and Energy S.r.l.
Via per Dolzago, 21
23848 Oggiono (LC)**

Location of Manufacturer: **Italy**

Product information: **Aircraft warning lights, Junction Boxes, Control and Signalling Units, Flame detection and ignition systems for chemical, petrochemical and energy production plants.**

Protection concept: **"d", "e", "i", "m", "n", "op"**

Related QARs:
CH/SEV/QAR19.001000 **CH/SEV/QAR19.001001** **CH/SEV/QAR19.001002**

Related Certificates (manual insertion):

Related Certificates (automatic linking):

Related Certificates for previous versions:
IECEx EUT 16.0007X issue: 2 **IECEx FTU 15.0035X issue: 3** **IECEx EUT 17.0029X issue: 1**
IECEx EUT 18.0029X issue: 1 **IECEx FTZU 15.0035X issue: 1** **IECEx FTZU 15.0035X issue: 2**
IECEx INE 14.0016U issue: 2 **IECEx INE 14.0017X issue: 2** **IECEx INE 14.0017X issue: 3**
IECEx SEV 18.0040X issue: 1

Comments: **Next Quality Audit due: July 2023 (Surveillance)**



EX AIRCRAFT WARNING LIGHTS

LOW INTENSITY

LOW INTENSITY OBSTRUCTION LIGHT



As specified by **Annex 14 of ICAO regulation, Low Intensity Obstruction Lights (LIOL) should be used to warn the presence of obstacles up to 45m height**, such as chimneys, cranes, flares and other structures.

Low Intensity Obstruction Lights are the simplest devices according to ICAO standards and they have the following characteristics and uses:

- **LIOL Type A (intensity >10cd, red steady burning)** can be used alone;
- **LIOL Type B (intensity >32cd, red steady burning)**, can be used either alone or in combination with medium intensity obstacle lights Type B or Type AB;
- **LIOL Type E (intensity >32cd, red flashing)**, can be used either alone or in combination with medium intensity obstacle lights, Type B. Flashing rate will be set at the same rate of other flashing beacons installed on the structure.

LOW INTENSITY

LIOL-A Ex/LIOL-B Ex/LIOL-E Ex LOW INTENSITY OBSTRUCTION LIGHT

Twilight sensor*

Stabilised light output:
LIOL-A: >10cd
LIOL-B: >32cd
LIOL-E: >32cd

Based on LED technology
Red flashing light
Red steady burning light

- ▶ Standard circuits or TWIN*
- ▶ Infrared version*

Borosilicate glass dome

Cable gland M25x1,5

Painted RAL 7035 aluminium body



*as option

IP66



L810-LXS-Ex Low Intensity Obstruction Light is fully compliant to ICAO/EASA (Low Intensity - Type A or B), **FAA** (Type L-810), and **ATEX - IECEx - TRCU certified**.

The light fixture is designed for hazardous areas Zone 1/21, 2/22 with Ex db IIC and Ex tb IIIC protection, compliant to EN/IEC60079-0, EN/IEC60079-1 and EN/IEC60079-31 standards.

With a compact body, high quality and **ultra-bright LEDs**, optical reflector for an optimum beam spread, LUXSOLAR L810-LXS-Ex product is **your best choice for an efficient, long life and reliable Aircraft Warning Obstacle Light**.

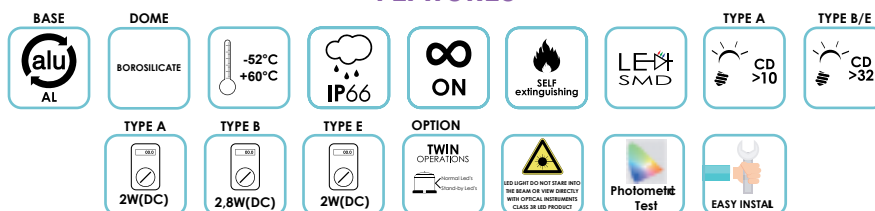
CERTIFICATION



COMPLIANCE



FEATURES



TYPICAL APPLICATION



LOW INTENSITY

LIOL-A Ex/LIOL-B Ex/LIOL-E Ex TECHNICAL SPECIFICATIONS

OPTICAL FEATURES

- Based on LED technology
- RED light - Steady Burning
- RED light - Flashing (LIOL-E)
- LIOL-A Ex: >10 cd
- LIOL-B/E Ex: >32 cd
- Cd emission: +6° and +10°
- Horizontal beam radiation: 360°
- Vertical beam spread: >10°
- Optical reflector

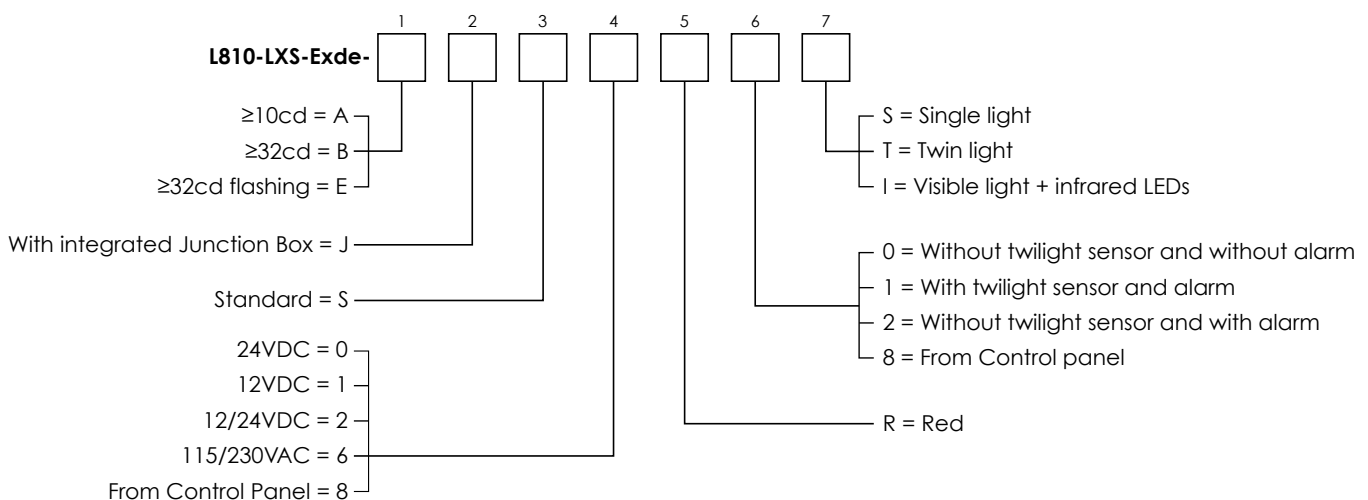
MECHANICAL FEATURES

- Painted RAL 7035 aluminium body
- Borosilicate glass dome
- Degree of protection: IP66
- Operating temperature: -52°C to +60°C
- Lamp unit weight: 7kg
- **ATEX marking:**
II 2GD Ex de IIC T4 Gb, Ex tb IIIC T135°C Db
- **IECEX marking:**
Ex de IIC T4 Gb, Ex tb IIIC T135°C Db
- **TRCU marking:**
1 Ex db e IIC T6...T3 GbX,
Ex tb IIIC T135°C...T200°C Db X

ELECTRICAL FEATURES

- Power supply AC or DC or from Luxsolar Control Panel
- Power consumption LIOL-A: 2W @12/24Vdc
- Power consumption LIOL-B: 2,8W @12/24Vdc
- Power consumption LIOL-E: 2W @12/24Vdc
- LED feeded at constant current

ORDER CODE



OPTIONS

- TWIN version: two separate LED circuits in the same fixture (normal + stand-by)
- Automatic changeover from normal to backup light
- Fault contact
- IR Wavelength - 850nm, compatible with pilot's NVG

APPLY TO

- Stack
- Chimney
- Tower crane
- Offshore Platform
- Chemical and petrochemical plant

CERTIFICATIONS

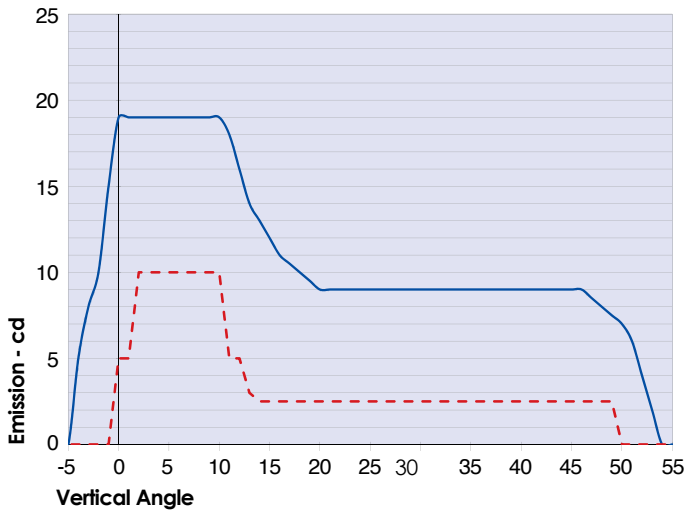
- ATEX certificate
- IECEX certificate
- TRCU certificate
- ICAO/EASA test report (EN 17025 marking laboratory) nr. 326-QL20-R05/R06
- CE marking

COMPLIANCE

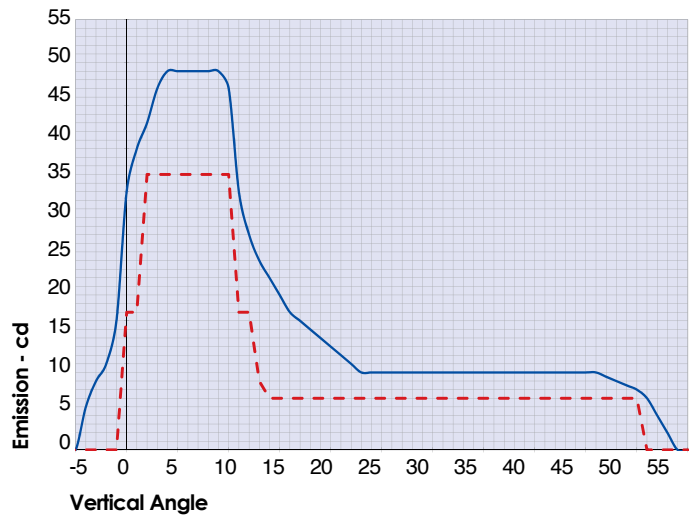
- ICAO Aerodromes -Annex 14 Volume 1, Chapter 6: Low intensity, Type A-B steady burning obstacle light, Type E flashing obstacle light
- FAA AC150/5345-43; E.B. #67 type L-810
- EASA CS-ADR-DSN, Chapter Q

LOW INTENSITY

LIOL-A Ex/LIOL-B Ex/LIOL-E Ex TECHNICAL SPECIFICATIONS

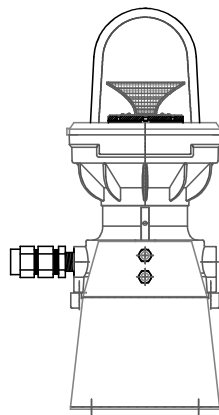


— L810-LXS-A Exde average emission level
- - - ICAO ANNEX 14 low intensity type A Minimum Required Intensity

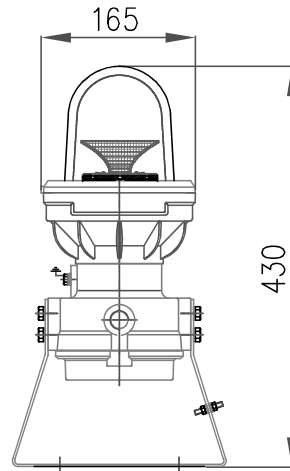


— L810-LXS-B Exde average emission level
- - - ICAO ANNEX 14 low intensity type B Minimum Required Intensity

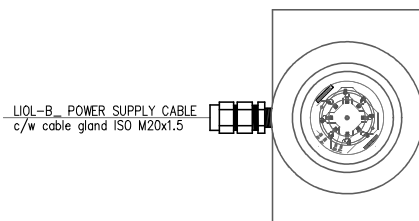
BEACON FRONT VIEW



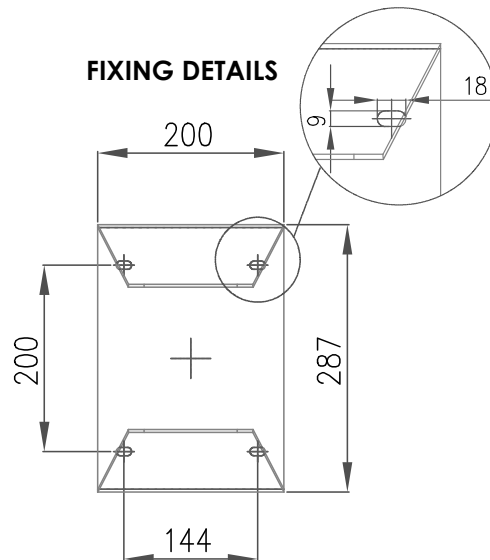
BEACON SIDE VIEW



BEACON TOP VIEW



FIXING DETAILS



MEDIUM INTENSITY

MEDIUM INTENSITY OBSTRUCTION LIGHT



According to **Annex 14 of ICAO regulation**, **Medium Intensity Obstruction Lights (MIOL)** should be used to warn the presence of obstacles with an height between 45m and 150m, such as telecommunication towers, wind turbines, chimneys, cranes, buildings and other structures.

Medium Intensity Obstruction Lights include three type of beacons, with different characteristics and uses:

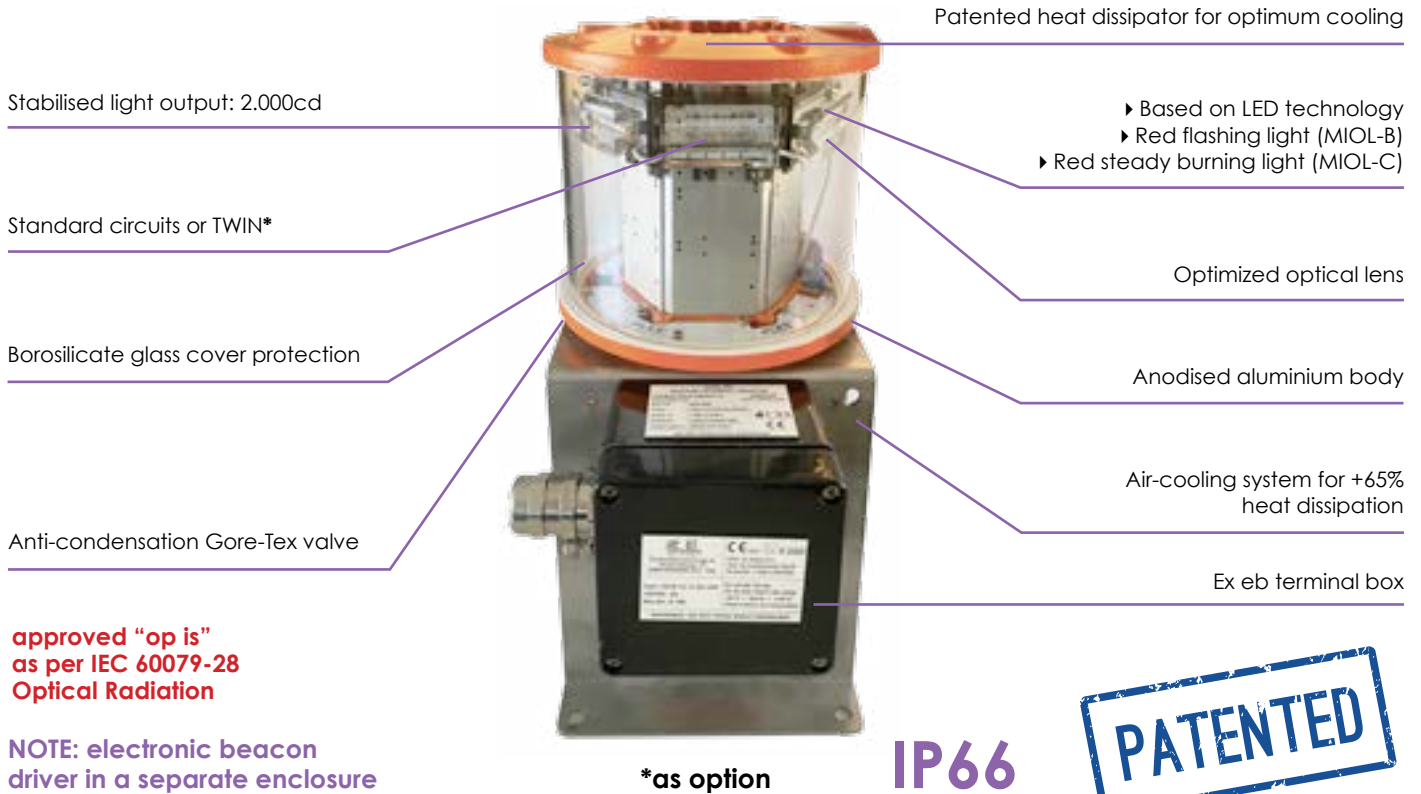
- **MIOL Type A (intensity 20.000cd, day-mode white flashing; 2.000cd, night-mode white flashing)** should be used alone;
- **MIOL Type B (intensity 2.000cd, night-mode red flashing)** should be used either alone or in combination with Low Intensity Obstacle Lights, Type B or Type E;
- **MIOL Type C (intensity 2.000cd, night-mode red steady burning)** should be used either alone or in combination with Medium Intensity Obstacle Lights, Type AC.

C&E offers to its customers also **DUAL type beacons in the same light fixture, suitable to be used during the day (with white LEDs) and during the night (with red LEDs)**; these beacons are:

- **DUAL MIOL Type AB (intensity 20.000cd, day-mode white flashing; 2.000cd, night-mode red flashing)** should be used in combination with Low Intensity Obstacle Lights, Type B or Type E;
- **DUAL MIOL Type AC (intensity 20.000cd, day-mode white flashing; 2.000cd, night-mode red steady burning)** should be used in combination with Medium Intensity Obstacle Lights, Type C.

MEDIUM INTENSITY

MIOL-B Ex eb mb op is/MIOL-C Ex eb mb op is



approved "op is"
as per IEC 60079-28
Optical Radiation

NOTE: electronic beacon
driver in a separate enclosure

L864-LXS Medium Intensity Obstruction Light is compliant to ICAO (Medium Intensity - Type B or C), **FAA** (Type L-864), **ENAC** and **EASA** compliant.

With a **compact body**, high quality and **ultra-bright LEDs**, **customised lenses for an optimum beam spread**, MIOL-B/C Ex product is **your best choice for an efficient, long life and reliable Aircraft Warning Obstacle Light**.

This beacon has been designed for hazardous areas with Ex eb mb op is IIC and Ex tb op is IIIC protection. **ATEX**, **IECEX** and **INMETRO** certified, compliant to **EN/IEC 60079-0**, **EN/IEC 60079-7**, **EN/IEC 60079-18**, **EN/IEC 60079-28**, **EN/IEC 60079-31** regulations. **It is suitable for hazardous areas Zone 1, Zone 21, Zone 2, Zone 22** where potentially explosive atmosphere due to the presence of flammable and explosive vapours, gas or dust may be present.

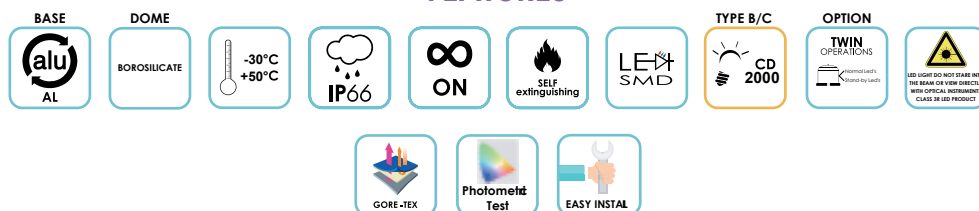
CERTIFICATION



COMPLIANCE



FEATURES



TYPICAL APPLICATION



MEDIUM INTENSITY

MIOL-B Ex eb mb op is/MIOL-C Ex eb mb op is TECHNICAL SPECIFICATIONS

OPTICAL FEATURES

- Based on LED technology
- RED light 2.000cd
- Horizontal beam radiation: 360°
- Vertical beam spread: 4°
- PMMA lens
- **ATEX marking:**
 - II 2GD
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - II 3GD
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80°C Dc
- **IECEx marking:**
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80° Dc

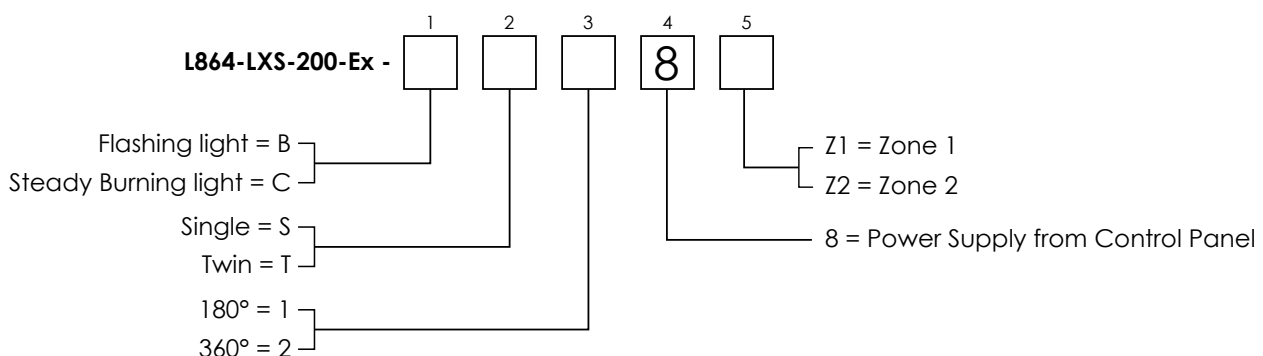
MECHANICAL FEATURES

- RAL 2004 painted aluminium body
- Borosilicate glass cover protection
- Base wind collector and internal heat sink for optimum cooling
- Degree of protection: IP66
- Anti-Condensation Gore-Tex Valve
- Operating temperature: -30°C to +50°C
- Lamp unit weight: 12kg

ELECTRICAL FEATURES

- Power supply by Luxsolar Control Panel:
 - 12/24 Vdc
 - 115/230 Vac
- Average power consumption for MIOL-B Ex:
 - @20fpm: 1,5W
 - @40fpm: 3W
 - @60fpm: 4,5W
- Average power consumption for MIOL-C Ex (Steady Burning): 21W
- LED feeded at constant current
- No RF-radiations

ORDER CODE



OPTIONS

- TWIN version: two separate LED circuits in the same fixture (normal + stand-by)

APPLY TO

- Stack
- Chimney
- Tower crane
- Offshore Platform
- Chemical and petrochemical plant

CERTIFICATIONS

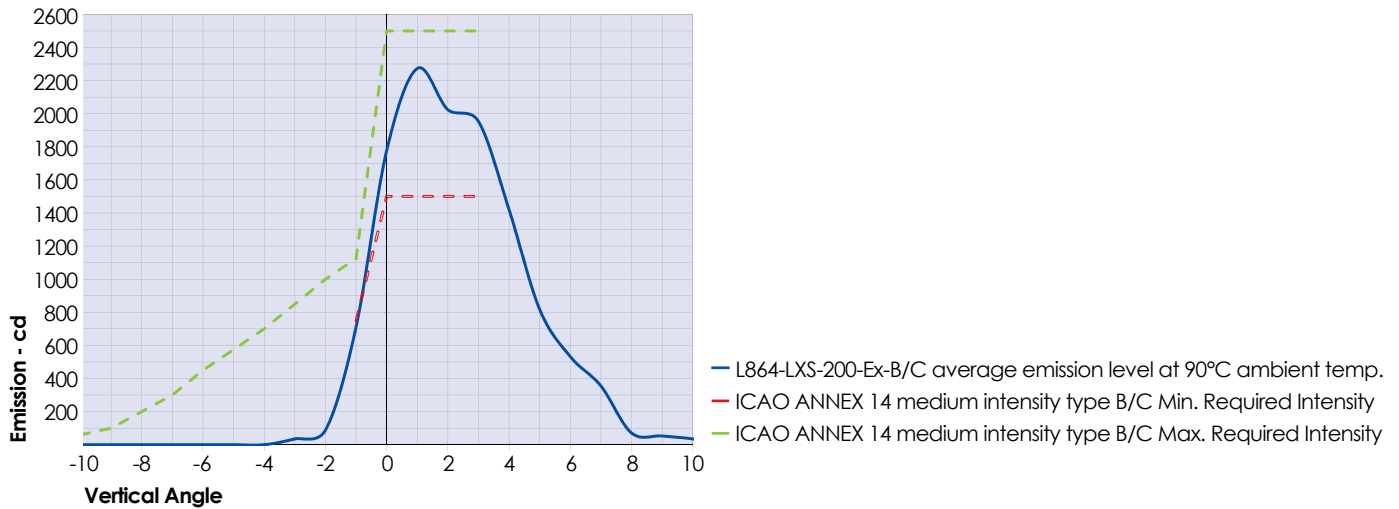
- ATEX certificate
- IECEx certificate
- INMETRO certificate
- EASA test report (EN 17025 laboratory) nr. 326-QL20-R09/R10
- CE marking

COMPLIANCE

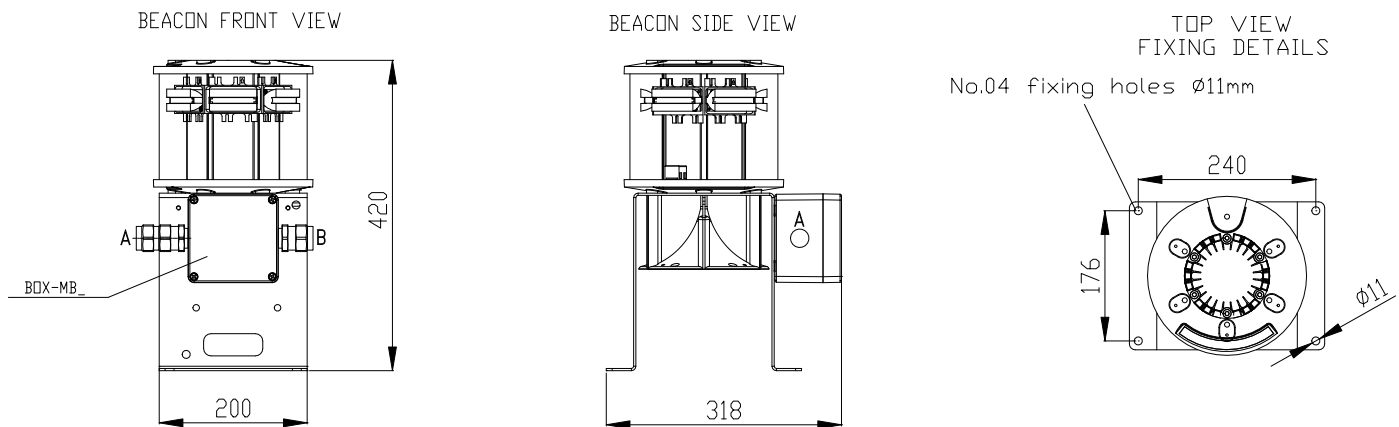
- ICAO Aerodromes -Annex 14 Vol. 1, Chapter 6: Medium intensity, Type B flashing obstacle light MIOL-B type or Type C steady burning obstacle light MIOL-C type
- FAA AC150/5345-43 E.B. #67 type L-864
- EASA CS-ADR-DSN, Chapter Q

MEDIUM INTENSITY

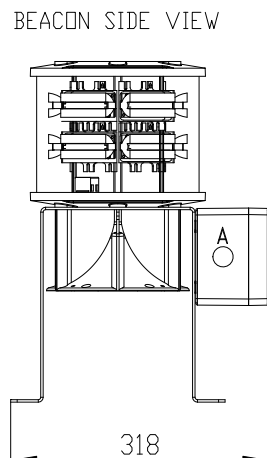
MIOL-B Ex eb mb op is/MIOL-C Ex eb mb op is TECHNICAL SPECIFICATIONS



SINGLE VERSION

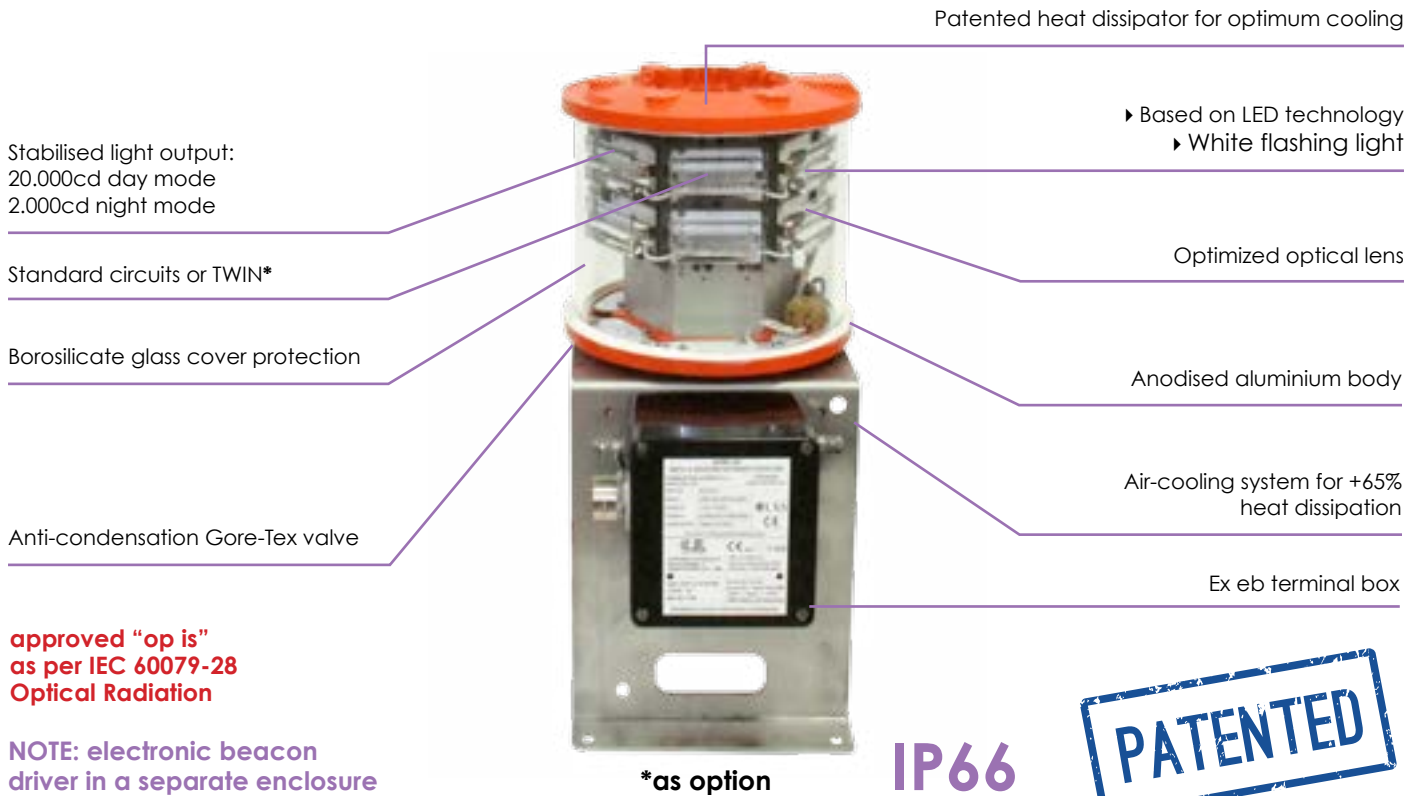


TWIN VERSION



MEDIUM INTENSITY

MIOL-A Ex eb mb op is



approved "op is"
as per IEC 60079-28
Optical Radiation

NOTE: electronic beacon
driver in a separate enclosure

*as option

IP66



L865-LXS Medium Intensity Obstruction Light is compliant to ICAO (Medium Intensity - Type A), FAA (Type L-865), ENAC and EASA compliant.

With a **compact body**, high quality and **ultra-bright LEDs**, **customised lenses for an optimum beam spread**, MIOL-A Ex product is **your best choice for an efficient, long life and reliable Aircraft Warning Obstacle Light**.

This beacon has been designed for hazardous areas with Ex eb mb op is IIC and Ex tb op is IIIC protection. **ATEX**, **IECEX** and **INMETRO** certified, compliant to **EN/IEC 60079-0**, **EN/IEC 60079-7**, **EN/IEC 60079-18**, **EN/IEC 60079-28**, **EN/IEC 60079-31** regulations. **It is suitable for hazardous areas Zone 1, Zone 21, Zone 2, Zone 22** where potentially explosive atmosphere due to the presence of flammable and explosive vapours, gas or dust may be present.

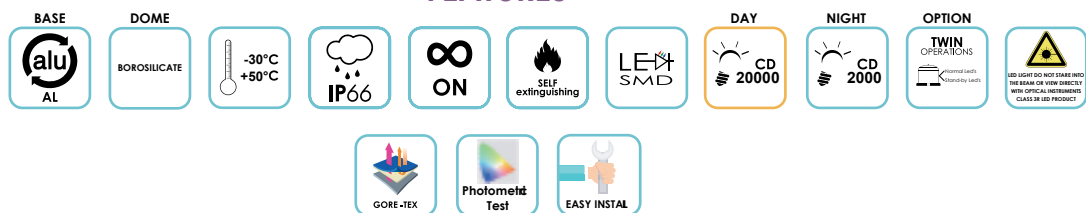
CERTIFICATION



COMPLIANCE



FEATURES



TYPICAL APPLICATION



MEDIUM INTENSITY

MIOL-A Ex eb mb op is TECHNICAL SPECIFICATIONS

OPTICAL FEATURES

- Based on LED technology
- 20.000cd day mode, WHITE flashing
- 2.000cd night mode, WHITE flashing
- Horizontal beam radiation: 360°
- Vertical beam spread: 4°
- PMMA lens
- **ATEX marking:**
 - II 2GD
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - II 3GD
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80°C Dc
- **IECEx marking:**
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80° Dc

MECHANICAL FEATURES

- RAL 2004 painted aluminium body
- Borosilicate glass cover protection
- Base wind collector and internal heat sink for optimum cooling
- Degree of protection: IP66
- Anti-Condensation Gore-Tex Valve
- Operating temperature: -30°C to +50°C
- Lamp unit weight: 12kg

ELECTRICAL FEATURES

- Power supply by Luxsolar Control Panel:
 - 12/24 Vdc
 - 115/230 Vac
- Average power consumption (@20fpm):
 - day mode: 45W
 - night mode: 10W
- Average power consumption (@40fpm):
 - day mode: 110W
 - night mode: 13W
- Average power consumption (@60fpm):
 - day mode: 160W
 - night mode: 18W
- LED feeded at constant current
- No RF-radiations

OPTIONS

- TWIN version: two separate LED circuits in the same fixture (normal + stand-by)

APPLY TO

- Stack
- Chimney
- Tower crane
- Offshore Platform
- Chemical and petrochemical plant

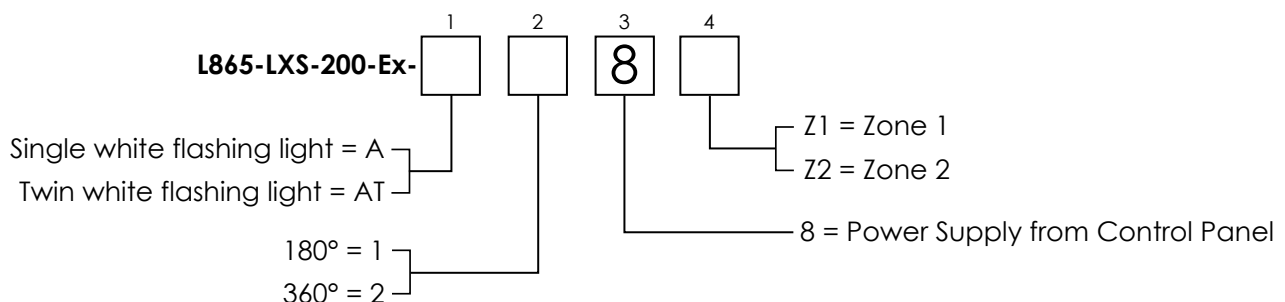
CERTIFICATIONS

- ATEX certificate
- IECEx certificate
- INMETRO certificate
- CE marking

COMPLIANCE

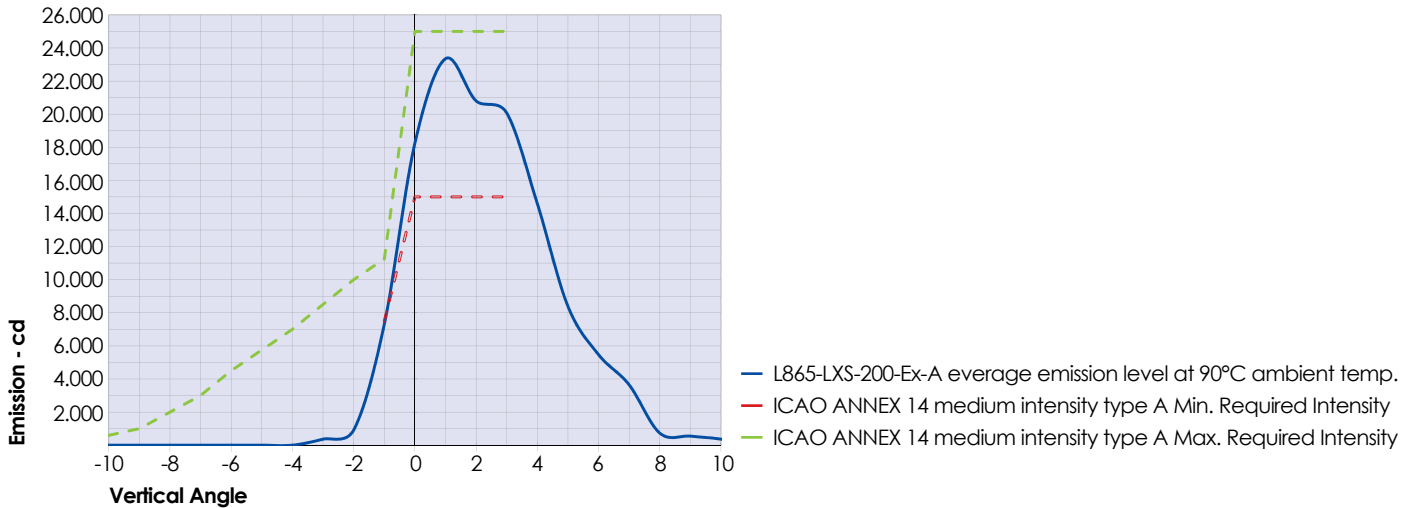
- ICAO Aerodromes -Annex 14 Vol. 1, Chapter 6: Medium intensity, Type A flashing obstacle light MIOL-A type
- FAA AC150/5345-43F E.B. #67 Lamp type L-865
- EASA CS-ADR-DSN, Chapter Q

ORDER CODE

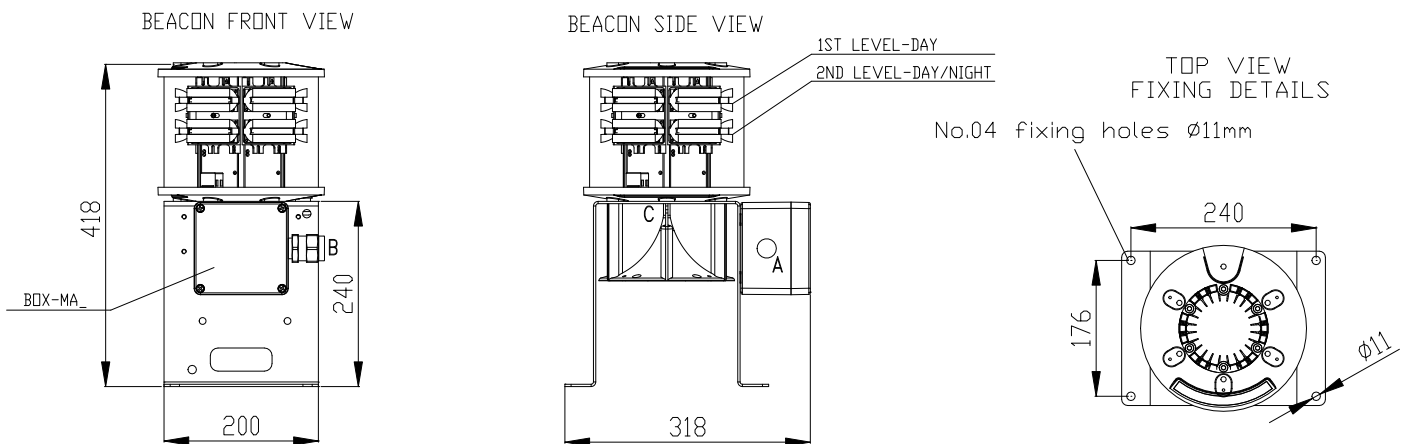


MEDIUM INTENSITY

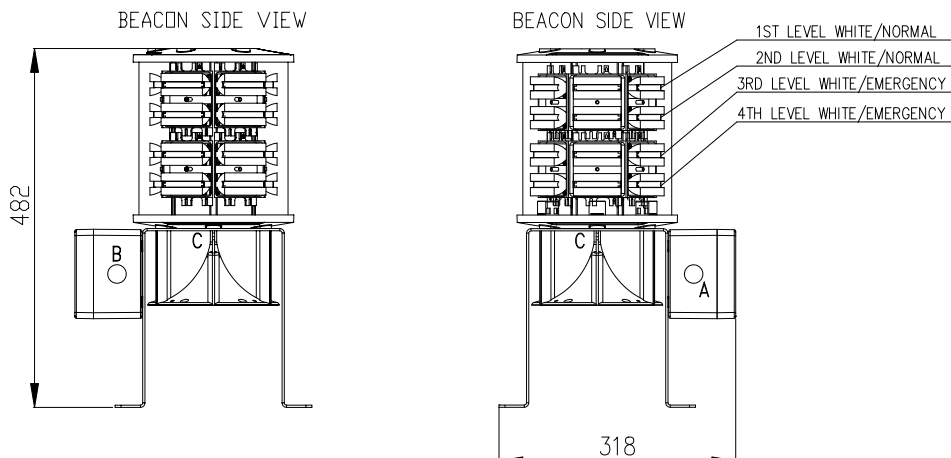
MIOL-A Ex eb mb op is TECHNICAL SPECIFICATIONS



SINGLE VERSION

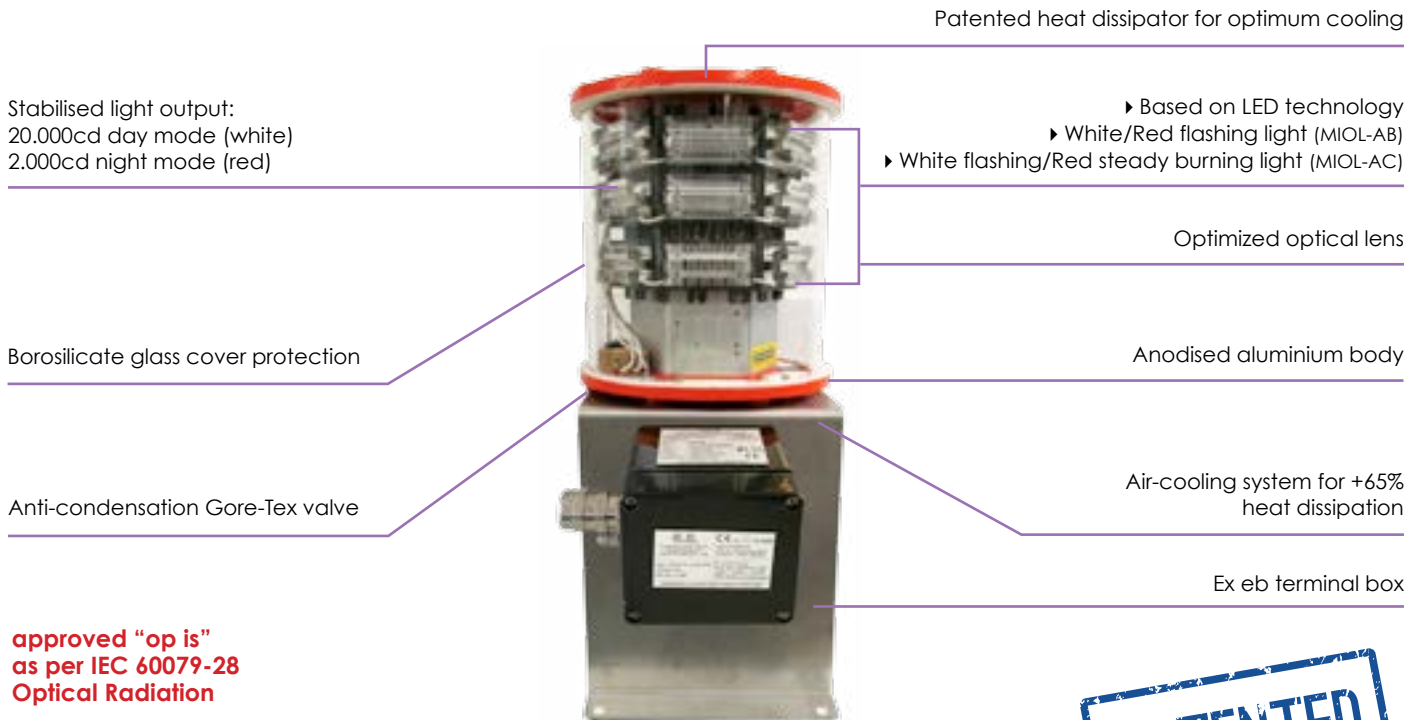


TWIN VERSION



MEDIUM INTENSITY

MIOL-AB Ex eb mb op is/MIOL-AC Ex eb mb op is



approved "op is"
as per IEC 60079-28
Optical Radiation

NOTE: electronic beacon driver in a separate enclosure

*as option

IP66



L864/L865-LXS Medium Intensity Obstruction Light is compliant to ICAO (Medium Intensity - Type AB or AC), FAA (Type L-864/L-865), ENAC and EASA compliant.

With a **compact body**, high quality and **ultra-bright LEDs**, **customised lenses for an optimum beam spread**, MIOL-AB/AC Ex product is **your best choice for an efficient, long life and reliable Aircraft Warning Obstacle Light**.

This beacon has been designed for hazardous areas with Ex eb mb op is IIC and Ex tb op is IIIC protection. **ATEX**, **IECEX** and **INMETRO** certified, compliant to **EN/IEC 60079-0**, **EN/IEC 60079-7**, **EN/IEC 60079-18**, **EN/IEC 60079-28**, **EN/IEC 60079-31** regulations. **It is suitable for hazardous areas Zone 1, Zone 21, Zone 2, Zone 22** where potentially explosive atmosphere due to the presence of flammable and explosive vapours, gas or dust may be present.

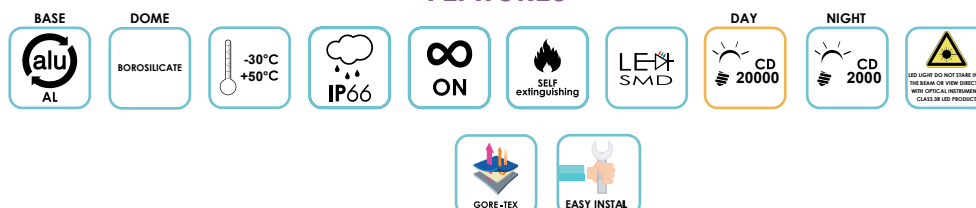
CERTIFICATION



COMPLIANCE



FEATURES



TYPICAL APPLICATION



MEDIUM INTENSITY

MIOL-AB Ex eb mb op is/MIOL-AC Ex eb mb op is TECHNICAL SPECIFICATIONS

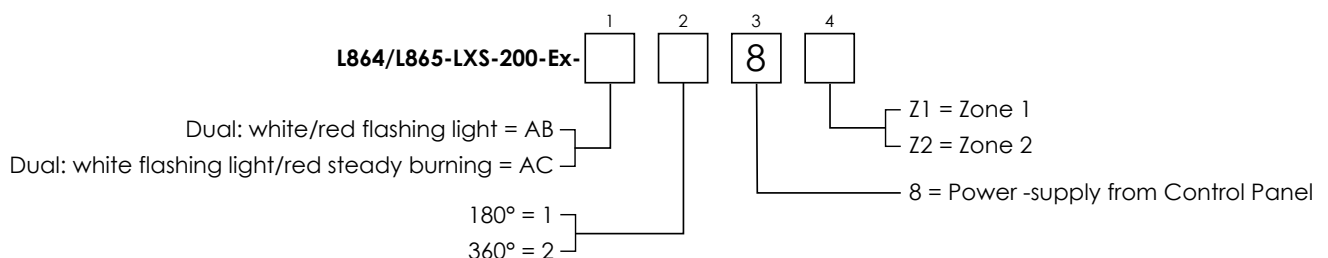
OPTICAL FEATURES

- Based on LED technology
- 20.000cd day mode, WHITE light
- 2.000cd night mode, RED light
- Horizontal beam radiation 360°
- Vertical beam spread 4°
- PMMA lens
- **ATEX marking:**
 - II 2GD
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - II 3GD
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80°C Dc
- **IECEx marking:**
 - Ex eb mb op is IIC T6 Gb;
 - Ex op is tb IIIC T80°C Db
 - Ex eb mb IIC T6 Gc;
 - Ex tb IIIC T80° Dc

MECHANICAL FEATURES

- RAL 2004 painted aluminium body
- Borosilicate glass cover protection
- Base wind collector and internal heat sink for optimum cooling
- Degree of protection: IP66
- Anti-Condensation Gore-Tex Valve
- Operating temperature: -30°C to +50°C
- Lamp unit weight: 12kg

ORDER CODE



ELECTRICAL FEATURES

- Power supply by Luxsolar Control Panel:
 - 12/24 Vdc
 - 115/230 Vac
- Average power consumption:
 - @20fpm day mode: 45W (Miol-AB/Miol-AC)
 - @20fpm night mode: 10W (Miol-AB)
 - @40fpm day mode: 110W (Miol-AB/Miol-AC)
 - @40fpm night mode: 12W (Miol-AB)
 - @60fpm day mode: 160W (Miol-AB/Miol-AC)
 - @60fpm night mode: 16W (Miol-AB)
 - night mode (steady) Miol-AC: 54W
- LED feeded at constant current
- No RF-radiations

APPLY TO

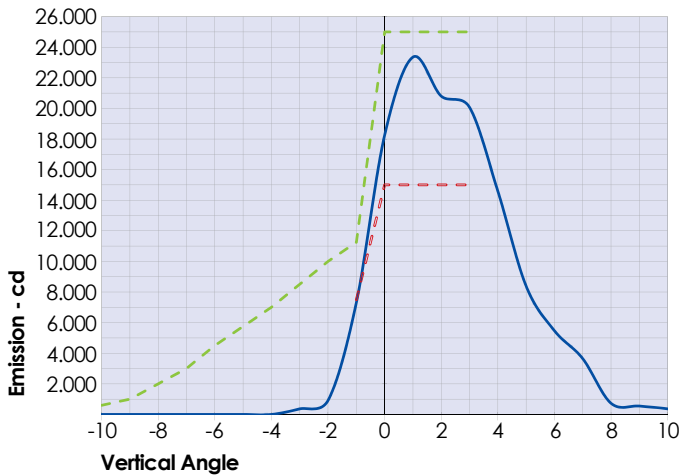
- Stack
- Chimney
- Tower crane
- Offshore Platform
- Chemical and petrochemical plant

COMPLIANCE

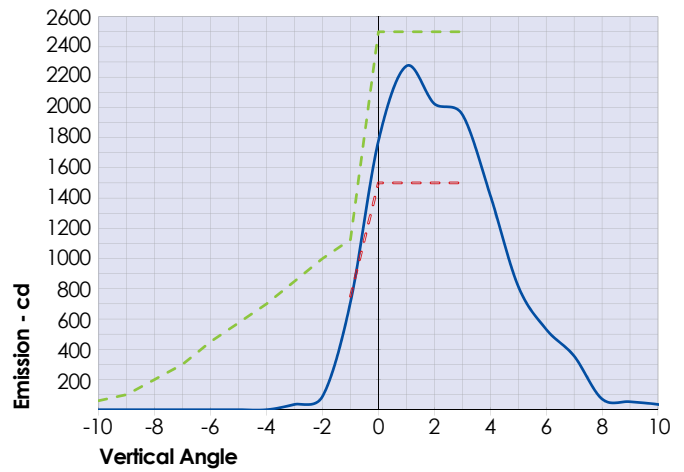
- ICAO Aerodromes - Annex 14 Vol.1, Ch. 6: Medium intensity, Type AB flashing obstacle light MIOL-AB type, Type AC flashing/steady burning obstacle light MIOL-AC Type
- FAA AC150/5345-43 E.B. #67 Lamp type Dual L-864/L-865
- EASA CS-ADR-DSN, Chapter Q

MEDIUM INTENSITY

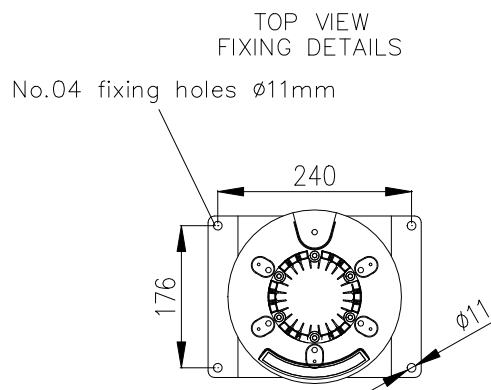
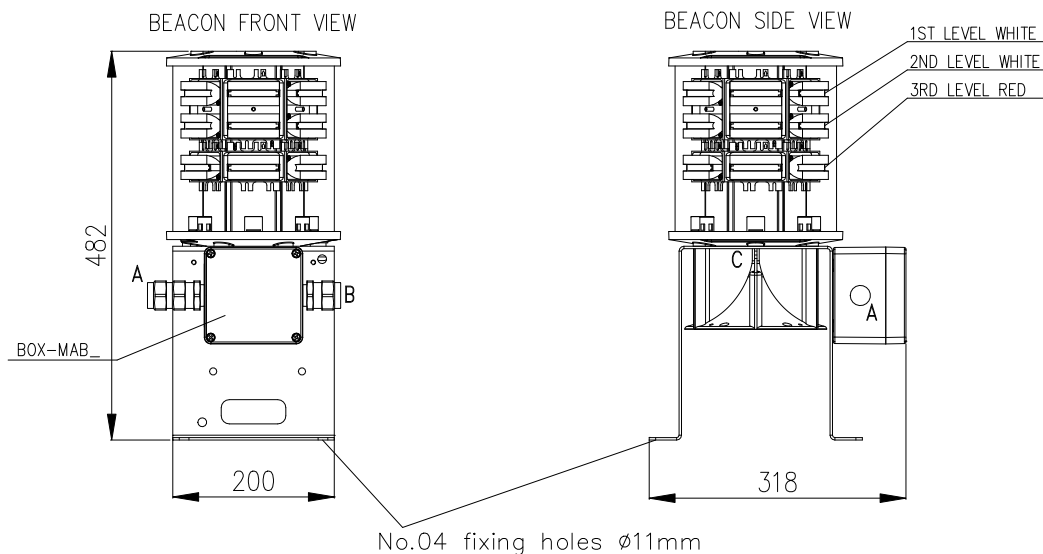
MIOL-AB Ex eb mb op is/MIOL-AC Ex eb mb op is TECHNICAL SPECIFICATIONS



- L865-LXS-200-Ex-A average emission level at 90°C ambient temp.
- ICAO ANNEX 14 medium intensity type A Min. Required Intensity
- ICAO ANNEX 14 medium intensity A Max. Required Intensity



- L864-LXS-200-Ex-B average emission level at 90°C ambient temp.
- ICAO ANNEX 14 medium intensity type B/C Min. Required Intensity
- ICAO ANNEX 14 medium intensity type B/C Max. Required Intensity





Hydrogen H_2

Zero emission

EX ENCLOSURES

ENCLOSURES

H2 ALUMINIUM AND STAINLESS STEEL ENCLOSURES - EJB... SERIES



ALUMINIUM ENCLOSURES



SS316L ENCLOSURES

EJB... series enclosures offer Ex db IIB +H2 mode of protection.

These enclosures are suitable to be used in hazardous areas for different applications, such as push button stations, instrument housing, lighting distribution panels, power distribution panels, heat tracing panels, motor control panels, etc.

Combustion and Energy Ex db IIB+H2 enclosures are ATEX, IECEx, Tr Cu, INMETRO, PESO and UL/CSA certified (for Zone classification)


ENCLOSURES

EJB SERIES TECHNICAL SPECIFICATION

MATERIAL

- Enclosure material: Copper free aluminium or stainless steel AISI 316L

Ex CODE

- Ex marking:  II 2 GD
Ex db IIB+H2 T6/T5/T4 Gb
Ex tb IIIC T85°C / T100°C / T135°C Db
- Ex marking USA: Class I, Zone 1, AEx db IIB+H2 T6/T5/T4 Gb
Zone 21, AEx db IIIC T85°C/T100°C/T135°C Db
- Ex marking CANADA: Class I, Zone 1, AEx db IIB+H2 T6/T5/T4 Gb
Zone 21, AEx db IIIC T85°C/T100°C/T135°C Db







MECHANICAL FEATURES

- Degree of protection: IP66
- Temperature: -20°C to +60°C (with window only for EU ex marking)
-50°C to +60°C (without window)
- Threaded Holes: ISO Metric / ANSI B1.20.1 NPT

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-11 / EN 60079-31
IEC 60079-0 / IEC 60079-1 / IEC 60079-11 / IEC 60079-31
CSA C22.2 no. 60079-0:19 / CSA C22.2 no. 60079-1:16 / CSA C22.2 no. 60079-31:15
UL 60079-0, Ed.7 / UL 60079-1, Ed.7 / UL 60079-31, Ed.2
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS

-  INERIS 14ATEX0002X
-  IECEX INE 14.0017X
-  RU C-IT.AA87.B.00188
-  DNV 20.0149X
-  P419558, P431061, P431085, P431059, P431084
-  LC 15427-1

NOTE

Enclosures can be internally equipped with intrinsically safe equipment.
Enclosures can be equipped with windows on the cover. (only for EU marking)
Certificate for Group I available.

ENCLOSURES

EJB SERIES ALUMINIUM DIMENSIONS

TYPE	External Dimensions			Internal Dimensions			Internal Plate		Fixing Holes		Weight	Feet Fixing Bolts
	Height (H)	Width (W)	Depth (D)	Height (H1)	Width (W1)	Depth (D1)	A	B	T	U	kg	ØZ
EJB-A	315	250	175	230	165	130	215	150	180	241	11	M8
EJB-B	425	245	230	345	170	185	321	150	290	249	16	M8
EJB-C	490	415	260	385	310	200	335	275	336	414	36	M8
EJB-D	530	495	260	425	390	200	394	358	360	480	44	M8
EJB-E	595	540	315	480	430	235	446	391	400	559	80	M10
EJB-F	835	445	315	720	340	235	670	294	630	449	93	M10
EJB-G	835	610	315	720	500	235	670	450	630	604	123	M10
EJB-H	835	610	410	720	500	330	670	450	630	604	134	M10

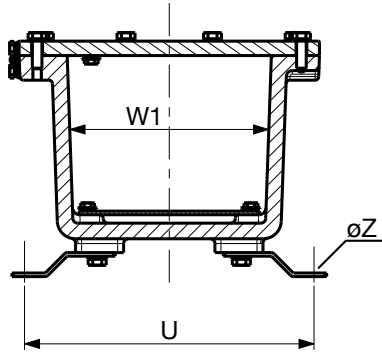
All dimensions are in mm.

Dimensions and weights are approximate and subject to change without notice.

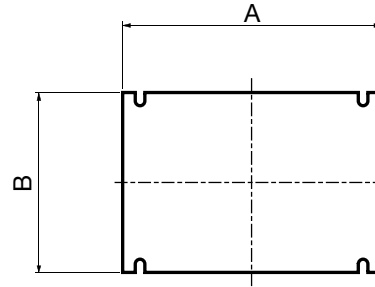
ENCLOSURES

EJB SERIES ALUMINIUM DRAWINGS

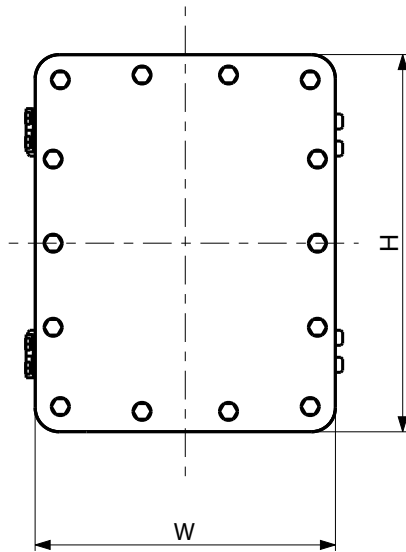
BOTTOM VIEW



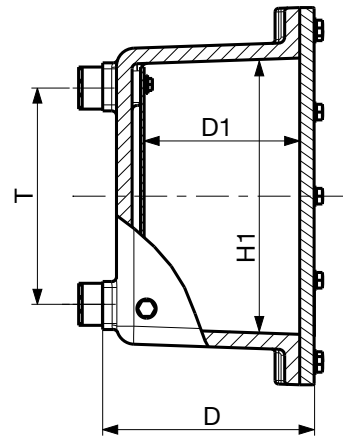
INTERNAL PLATE



FRONT VIEW



SIDE VIEW



ENCLOSURES

EJB SERIES STAINLESS STEEL DIMENSIONS

TYPE *	External Dimensions			Internal Dimensions			Internal Plate		Fixing Holes		Weight	Feet Fixing Bolts
	Height (H)	Width (W)	Depth (D)	Height (H1)	Width (W1)	Depth (D1)	A	B	T	U	kg	ØZ
EJBS-A	320	255	182	235	170	140	225	160	175	258	32	M10
EJBS-B	430	255	240	345	170	195	335	160	285	258	42	M10
EJBS-C	490	415	260	390	315	215	380	305	330	403	80	M10
EJBS-D	535	495	260	430	390	215	420	380	370	478	99	M10
EJBS-E	600	545	275	485	430	220	475	420	405	538	144	M16
EJBS-F	845	460	320	725	340	265	715	330	605	450	180	M16
EJBS-G	835	615	315	725	505	263	715	495	605	616	281	M16
EJBS-H	835	615	410	725	505	358	715	495	605	616	309	M16

All dimensions are in mm.

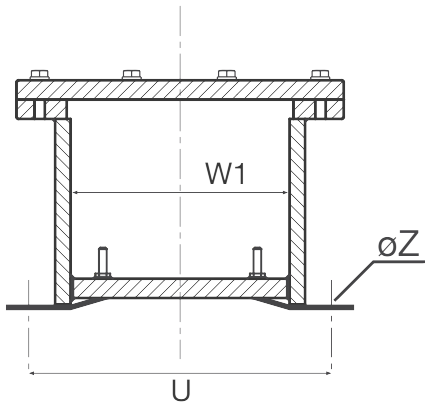
Dimensions and weights are approximate and subject to change without notice.

* "S" discriminate between Stainless Steel and Aluminium enclosures only in the catalogue and datasheets, is not included in the marking.

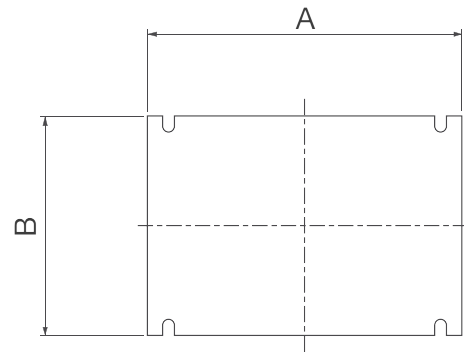
ENCLOSURES

EJB SERIES STAINLESS STEEL DRAWINGS

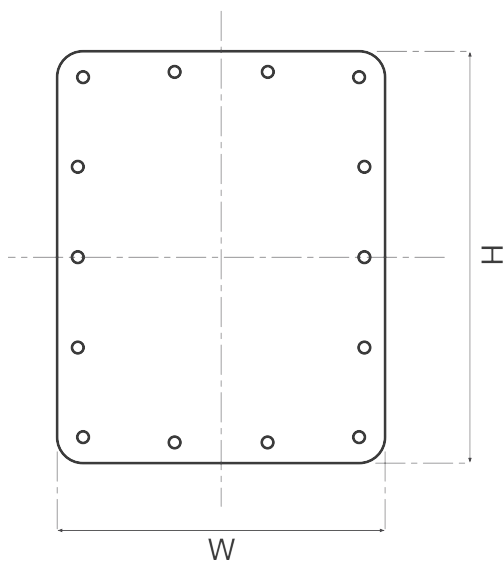
BOTTOM VIEW



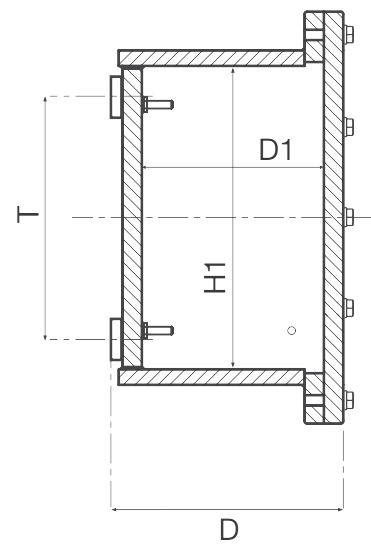
INTERNAL PLATE



FRONT VIEW



SIDE VIEW



ENCLOSURES

EJB SERIES WINDOWS DIMENSIONS AND DRAWINGS

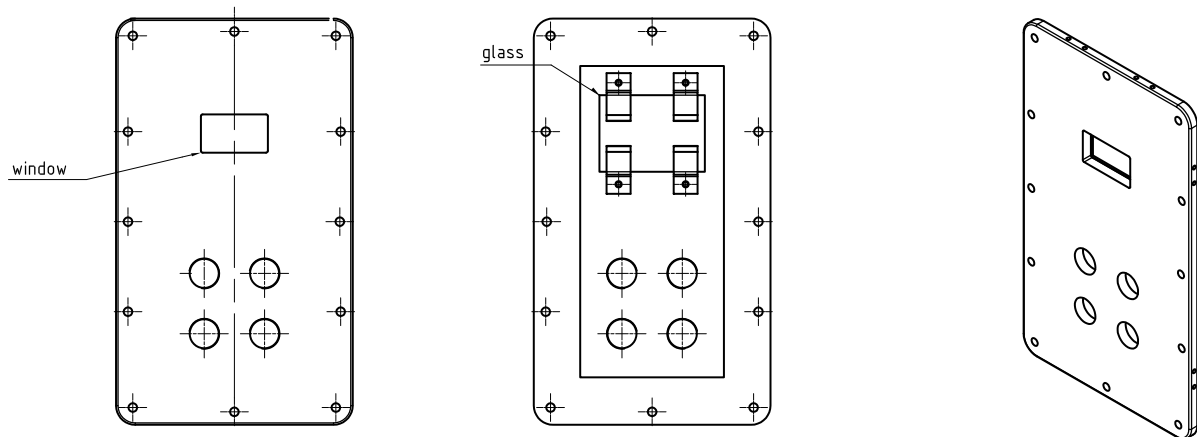
APPLICABLE WINDOWS AND ENTRIES M32X1.5 ON EJB LIDS

Window type	Glass dimensions	EJB-A EJBS-A	EJB-B EJBS-B	EJB-C EJBS-C	EJB-D EJBS-D	EJB-E EJBS-E	EJB-F EJBS-F	EJB-G EJBS-G	EJB-H EJBS-H
P = 80x80	120x120	-	X	X	X	X	X	X	X
Q = 120x120	160x160	-	-	X	X	X	X	X	X
R = 160x160	200x200	-	-	-	X	X	X	X	X
S = 40x70	80x110	-	X	X	X	X	X	X	X
T = 40x200	80x240	-	-	X	X	X	X	X	X
U = 100x270	140x310	-	-	-	-	X	X	X	X

All dimensions are in mm.

Dimensions and weights are subject to change without notice.

* "S" discriminate between Stainless Steel and Aluminium enclosures only in the catalogue and datasheets, is not included in the marking.



ENCLOSURES

EJB SERIES WINDOWS DIMENSIONS AND DRAWINGS

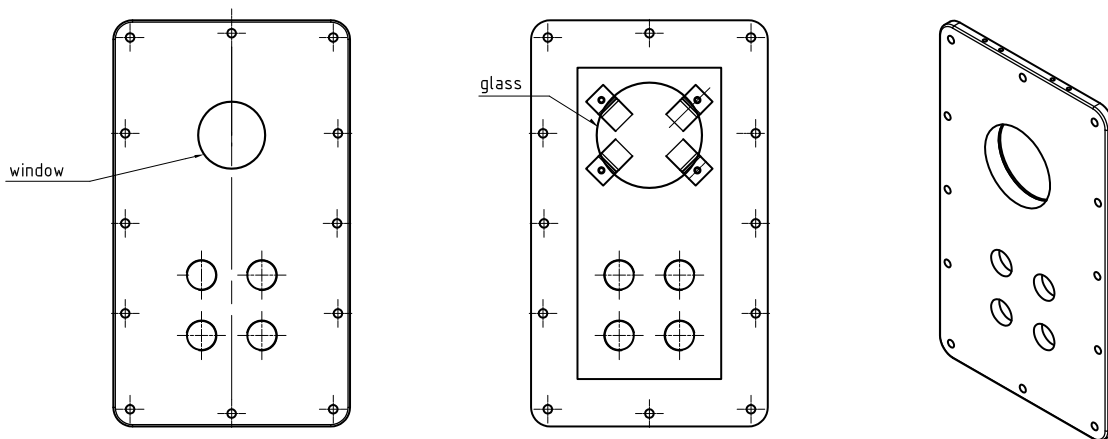
APPLICABLE WINDOWS AND ENTRIES M32X1.5 ON EJB LIDS

Window type	Glass dimensions	EJB-A EJBS-A	EJB-B EJBS-B	EJB-C EJBS-C	EJB-D EJBS-D	EJB-E EJBS-E	EJB-F EJBS-F	EJB-G EJBS-G	EJB-H EJBS-H
V = Ø 120	Ø 160	-	-	X	X	X	X	X	X
W = Ø 160	Ø 200	-	-	-	X	X	X	X	X
X = Ø 180	Ø 220	-	-	-	-	X	X	X	X

All dimensions are in mm.

Dimensions and weights are subject to change without notice.

* "S" discriminate between Stainless Steel and Aluminium enclosures only in the catalogue and datasheets, is not included in the marking.



ENCLOSURES

EJB SERIES FEATURES

TYPES OF ENCLOSURES	TEMPERATURE CLASS		MAXIMUM POWER DISSIPATED		
	GAS	DUST	40°C	50°C	60°C
EJB-A	T6	T85°C	90W	60W	25W
	T5	T100°C	120W	95W	75W
	T4	T135°C	205W	180W	155W
EJB-B	T6	T85°C	125W	90W	55W
	T5	T100°C	180W	145W	110W
	T4	T135°C	305W	270W	235W
EJB-C	T6	T85°C	210W	150W	95W
	T5	T100°C	295W	235W	180W
	T4	T135°C	500W	440W	380W
EJB-D	T6	T85°C	255W	185W	115W
	T5	T100°C	360W	290W	220W
	T4	T135°C	610W	535W	465W
EJB-E	T6	T85°C	265W	200W	125W
	T5	T100°C	390W	315W	240W
	T4	T135°C	655W	580W	505W
EJB-F	T6	T85°C	350W	265W	165W
	T5	T100°C	515W	415W	315W
	T4	T135°C	850W	755W	660W
EJB-G	T6	T85°C	410W	315W	195W
	T5	T100°C	610W	495W	375W
	T4	T135°C	1020W	905W	790W
EJB-H	T6	T85°C	510W	390W	245W
	T5	T100°C	610W	460W	320W
	T4	T135°C	1260W	1120W	975W

ENCLOSURES

EJB SERIES FEATURES

NUMBER OF THREADED HOLES AND OPERATORS ON FRONT

EJB Type		A	B	C	D	E	F	G	H
Nr. of threaded holes and operators (M32 and M25) - with windows	min	-	4	8	12	18	35	56	56
	max	-	6	12	18	24	40	64	64
Nr. of threaded holes and operators (M32 and M25) - without windows		4	10	24	36	42	55	88	88

NUMBER OF CABLE ENTRIES ON LONG/SHORT SIDE FOR EACH EJB

ENTRY	BOX TYPE							
	A	B	C	D	E	F	G	H
M20 / 1/2"	8/6	12/6	20/16	24/22	30/24	55/26	55/32	60/38
M25 / 3/4"	8/4	8/4	12/9	22/16	25/20	38/18	40/22	44/24
M32 / 1"	3/3	3/2	10/8	11/9	13/11	30/15	34/18	36/20
M50 / 1.1/2"	2/1	2/1	4/3	8/8	8/8	14/6	16/12	17/13
M63 / 2"	1/1	2/1	3/2	3/3	4/4	10/4	11/5	12/6
M75 / 2.1/2"			2/2	2/2	3/2	4/2	6/4	6/4
M80 / 3"				1/1	2/2	3/1	5/3	5/3

ENCLOSURES

EJB SERIES OPERATORS

CODE	DESCRIPTION
10000	Black button NO contact
10001	Green button NO contact
10002	Red button NC contact
10003	Yellow button NO contact
10057	White button NO contact
10004	White signal lamp
10005	Green signal lamp
10006	Red signal lamp
10007	Yellow signal lamp
10049	Blue signal lamp
10021	Selector switch 0-1, 2 pole 16A handle 55x55
10022	Selector switch 0-1, 3 pole 63A handle 72x72
10023	Selector switch 1-0-2, 2 pole 16A handle 55x55
10024	Selector switch 1-2-3, 2 pole 16A handle 55x55
10025	Selector switch 1-0-2, handle 55x55
10026	Selector switch 1-2-3, handle 55x55
10053	Selector switch 1-2, 3 pole 16A handle 55x55
10047	Selector switch 6 positions 12A, black handle 55x55
10028	Selector switch 0-1, 4 pole 16A handle 55x55
10045	Selector switch 1-2, 2 pole 16A handle 55x55
10048	Selector switch 5 positions 16A, black handle 55x55
10020	Emergency Red button, turn to unlock, 1 NC contact
10027	Handle for internal switch operation handle 55x55
10051	Handle 160mm for internal switch operation
10052	Handle 110mm for internal switch operation
10046	Key selector switch three position 1-0-2, handle 55x55
10056	Key selector switch three position 1-2

For other type of operators, please contact our technical department.
Inox material for operators are available on request.



Emergency Red button



Green button



Orange signal lamp



Selector 0-1

ENCLOSURES

EJB SERIES Ex AMPLE OF EJB WITH WINDOW AND OPERATORS



ENCLOSURES

Ex db IIC ALUMINIUM AND STAINLESS STEEL ENCLOSURES - GUB SERIES



GUB enclosures are used in industrial plants where hazardous atmospheres of gases (Zone 1, Zone 2) may be present.

Combustion and Energy enclosures are available in copper free aluminium or stainless steel and can also be equipped (upon request) with window.

Combustion and Energy Ex db IIC enclosures are ATEX, IECEx, Tr Cu, INMETRO and PESO certified.


ENCLOSURES

GUB SERIES TECHNICAL SPECIFICATION

MATERIAL

- Enclosure material: Copper free aluminium or stainless steel AISI316L
- Windows (option): Borosilicate tempered glass

Ex CODE

- Ex marking:  II 2 GD
Ex db IIC T6/T5/T4 Gb







MECHANICAL FEATURES

- Degree of protection: IP66
- Temperature: -20°C to +40°C (T6) or -20°C to +60°C / -20°C to +70°C (T4) (with window)
-50°C to + 80°C (without window)
- Threaded Holes: ISO Metric / ANSI B1.20.1 NPT

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-11
IEC 60079-0 / IEC 60079-1 / IEC 60079-11
- Suitable for: Zone 1 / Zone 2

CERTIFICATIONS

-  INERIS 03ATEX0174X (with window)
-  EPT 17ATEX2760X (without window)
-  IECEX EUT 17.0029X (without window)
-  TC RU C-IT.AA87.B.01186 (without window)
-  DNV 20.0153X (without window)
-  P431088, P431074, P431081, P419561, P431089 (without window)

PART NUMBER

- GUB . C
- GUB . W
- GUBS ..

NOTE

Enclosures can be internally equipped with intrinsically safe equipment.
Enclosures can be equipped with operators on side.

ENCLOSURES

GUB SERIES ALUMINIUM and AISI316L DIMENSIONS

ALUMINIUM

TYPE	External dimensions (mm)			Internal dimensions (mm)			Plates dimensions (mm)*		Fixing holes (mm)		Fixing bolts dim. (F)	Weight (kg)
	Length (L)	Width (W)	Height (H)	Lenght (L1)	Width (W1)	Height (H1)	Length (L2)	Width W(2)	A	B		
GUB1	170	165	150	145	145	100	130	60	150	185	M8	5
GUB2	206	206	200	180	180	125	155	155	230	178	M8	6,5
GUB3	263	225	200	190	230	130	190	150	260	230	M8	8,5
GUB4	325	391	277	245	280	170	250	216	316	301	M8	22
GUB5	430	430	300	390	390	195	340	340	470	390	M10	41
GUB6	575	570	380	505	505	245	440	440	650	523	M10	113

Dimensions and weights are subject to change without notice.

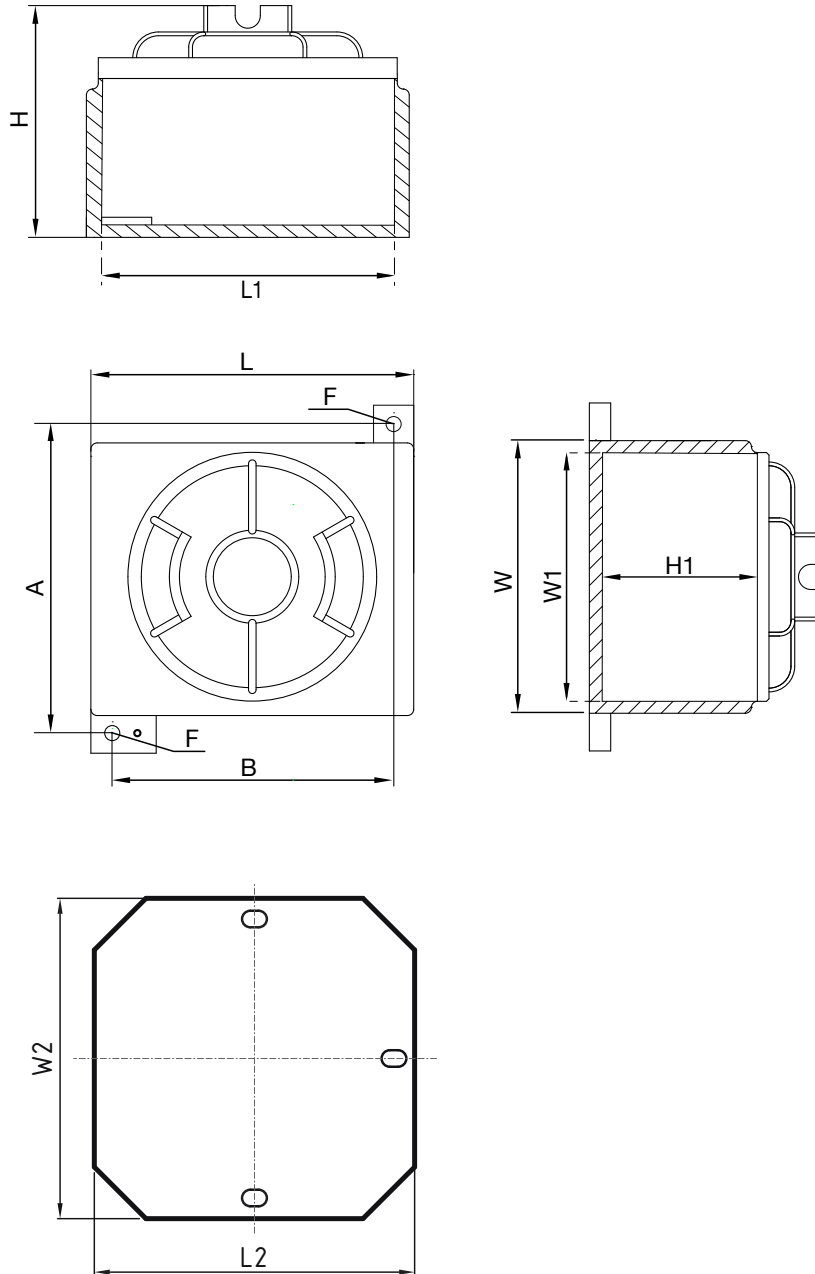
STAINLESS STEEL

TYPE	External dimensions (mm)			Internal dimensions (mm)			Plates dimensions (mm)*		Fixing holes (mm)		Fixing bolts dim. (F)	Weight (kg)
	Length (L)	Width (W)	Height (H)	Lenght (L1)	Width (W1)	Height (H1)	Length L2	Width W2	A	B		
GUBS1	170	170	160	146	146	132	130	60	198	148	M8	15
GUBS2	204	204	190	180	180	159	155	155	230	178	M8	19
GUBS3	258	216	195	192	234	164	190	150	260	230	M8	25
GUBS4	308	276	243	246	278	220	250	216	316	276	M8	66
GUBS5	432	432	276	402	402	243	340	340	470	390	M10	124
GUBS6	537	537	370	507	507	290	440	440	650	523	M10	348,5

Dimensions and weights are subject to change without notice.

ENCLOSURES

GUB SERIES ALUMINIUM and AISI316L GENERAL DRAWINGS



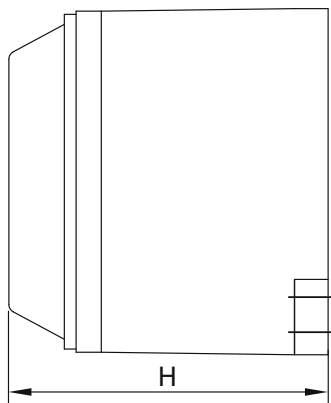
ENCLOSURES

GUB SERIES WITH WINDOW ALUMINIUM DIMENSIONS AND DRAWINGS

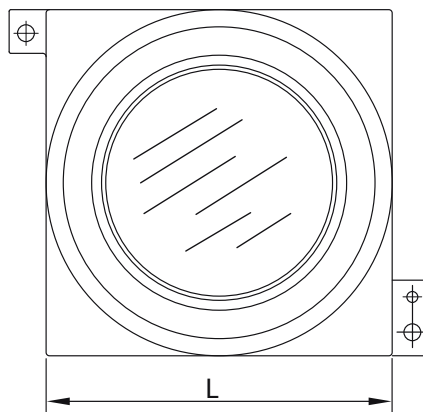
TYPE	External dimensions (mm)			Internal dimensions (mm)			Weight (kg)	Glass windows (mm) (Option)
	Length (L)	Width (W)	Height (H)	Length (L1)	Width (W1)	Height (H1)		
GUB1 W	170	157	164	140	135	110	5	105
GUB2 W	206	206	190	170	170	135	7	135
GUB3 W	257	217	160	225	185	160	9	135

Dimensions and weights are approximate and subject to change without notice.

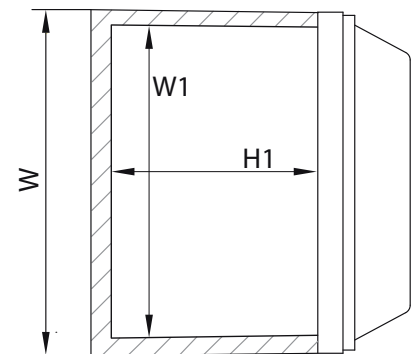
RIGHT SIDE VIEW



FRONT VIEW



LEFT SIDE VIEW



ENCLOSURES

GUB SERIES FEATURES

MAX DISSIPATED POWER (W/VA) IN THE Ex db IIC CONTROL AND POWER UNITS

WALL MOUNTING INSTALLATION 5 SIDES INVOLVED IN THERMAL DISSIPATION + WARNING ENTRY POINT > 70°C															
Type	Tamb up to 40°C			Tamb up to 50°C			Tamb up to 60°C			Tamb up to 70°C			Tamb up to 80°C		
	Temperature class			Temperature class			Temperature class			Temperature class			Temperature class		
	T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
	T. Cable 78°C	T. Cable 92°C	T. Cable 120°C	T. Cable 78°C	T. Cable 92°C	T. Cable 120°C	T. Cable 78°C	T. Cable 92°C	T. Cable 120°C	T. Cable 78°C	T. Cable 92°C	T. Cable 120°C		T. Cable 92°C	T. Cable 120°C
GUB 1	36	53	99	22	40	88	14	27	75	7	18	57		10	46
GUB 2	-	57	111	24	45	96	16	29	84	8	20	65	-	12	51
GUB 3	-	80	155	34	64	134	22	41	117	11	28	90	-	17	71
GUB 4	86	120	256	65	96	228	43	75	183	21	54	143	-	32	107
GUB 5	109	155	290	81	122	253	54	95	207	27	68	169	-	40	136
GUB 6	-	347	648	-	277	576	97	181	499	48	121	427	-	73	307

FRAME MOUNTING INSTALLATION 5 SIDES INVOLVED IN THERMAL DISSIPATION WITHOUT WARNING ENTRY POINT															
Type	Tamb up to 40°C			Tamb up to 50°C			Tamb up to 60°C			Tamb up to 70°C			Tamb up to 80°C		
	Temperature class			Temperature class			Temperature class			Temperature class			Temperature class		
	T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
GUB 1	35	-	-	20	-	-	10	-	-	-	-	-	-	-	-
GUB 2	36	39	-	23	-	-	11	-	-	-	-	-	-	-	-
GUB 3	50	56	-	33	-	-	16	-	-	-	-	-	-	-	-
GUB 4	82	-	-	54	-	-	27	-	-	-	-	-	-	-	-
GUB 5	108	-	-	71	-	-	35	-	-	-	-	-	-	-	-
GUB 6	216	235	-	149	150	-	74	-	-	-	-	-	-	-	-

ENCLOSURES

GUB SERIES FEATURES

MAX. DISSIPATED POWER (W / VA) IN THE Ex db [i.] IIC CONTROL AND POWER UNITS

WALL MOUNTING INSTALLATION 5 SIDES INVOLVED IN THERMAL DISSIPATION + WARNING ENTRY POINT > 70°C									
Type	Tamb up to 40°C	Tamb up to 50°C	Tamb up to 60°C	Tamb up to 70°C			Tamb up to 80°C		
	Temperature class	Temperature class	Temperature class	Temperature class			Temperature class		
	T6	T6	T6	T6			T6		
	T. Cable 78°C	T. Cable 78°C	T. Cable 78°C	T. Cable 78°C			T. Cable 78°C		
GUB 1	36	22	14	-	-	-	-	-	-
GUB 2	-	24	16	-	-	-	-	-	-
GUB 3	-	34	22	-	-	-	-	-	-
GUB 4	86	65	43	-	-	-	-	-	-
GUB 5	109	81	54	-	-	-	-	-	-
GUB 6	-	-	97	-	-	-	-	-	-

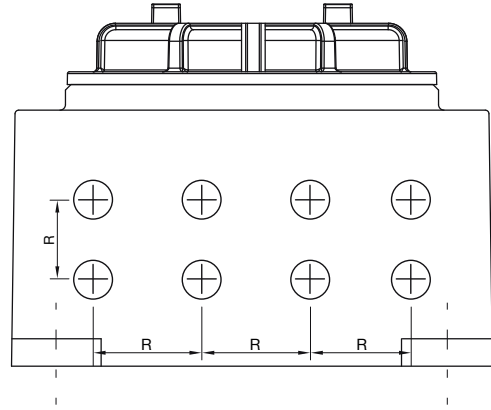
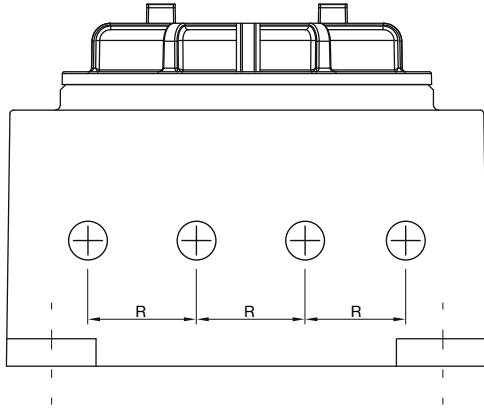
WALL MOUNTING INSTALLATION 5 SIDES INVOLVED IN THERMAL DISSIPATION WITHOUT WARNING ENTRY POINT									
Type	Tamb up to 40°C	Tamb up to 50°C	Tamb up to 60°C	Tamb up to 70°C			Tamb up to 80°C		
	Temperature class	Temperature class	Temperature class	Temperature class			Temperature class		
	T6	T6	T6	T6			T6		
	T. Cable 78°C	T. Cable 78°C	T. Cable 78°C	T. Cable 78°C			T. Cable 78°C		
GUB 1	35	20	10	-	-	-	-	-	-
GUB 2	36	23	11	-	-	-	-	-	-
GUB 3	50	33	16	-	-	-	-	-	-
GUB 4	82	54	27	-	-	-	-	-	-
GUB 5	108	71	35	-	-	-	-	-	-
GUB 6	216	149	74	-	-	-	-	-	-

Maximum dissipated power is the main data that must be considered for the conformity to the EU-Type Examination Certificate or IECEx Certificate of Conformity independently of the electrical / electronic equipment installed and their relative nominal current.

ENCLOSURES

GUB SERIES FEATURES

MAXIMUM NUMBER OF CABLE ENTRIES



ENCLOSURES	SIDE	1/4" ÷ 1/2" ①		3/4" ①		1" ①		1" 1/4" ①		1" 1/2" ①		2" ①		2" 1/2" ①		3" ①									
		M12÷ M20x1.5		M25x1.5		M32x1.5		M40x1.5		M50x1.5		M63x1.5		M75x1.5 or 2		M80x1.5 or 2									
		R	Layout		R	Layout		R	Layout		R	Layout		R	Layout		R	Layout							
			A	B		A	B		A	B		A	B		A	B		A	B						
GUB 1	S	44	3	-	55	2	-	65	-	-	75	-	-	80	-	-	90	-	-	120	-	-	130	-	-
	L		3	-		2	-		-	-		-	-		-	-		-	-		-	-		-	
GUB 2	S	44	4	8	55	3	-	65	2	-	75	2	-	80	2	-	90	1	-	120	-	-	130	-	-
	L		4	8		3	-		2	-		2	-		2	-		1	-		-	-		-	
GUB 3	S	44	4	8	55	3	-	65	2	-	75	2	-	80	2	-	90	2	-	120	-	-	130	-	-
	L		5	10		4	-		3	-		3	-		2	-		2	-		-	-		-	
GUB 4	S	44	5	15 ②	55	4	8	65	3	6	75	3	-	80	2	-	90	2	-	120	1	-	130	1	-
	L		6	18 ②		4	8		4	8		3	-		3	-		3	-		3	-		2	-
GUB 5	S	70	6	18 ②	70	5	10	70	5	6	75	4	-	80	4	-	90	4	-	120	3	-	130	2	-
	L		6	18 ②		5	10		5	8		4	-		4	-		4	-		4	-		3	-
GUB 6	S	44	10	30 ②	55	8	24 ②	65	7	6	75	6	12	80	5	10	90	5	-	120	3	-	130	3	-
	L		10	30 ②		8	24 ②		7	8		6	12		5	10		5	-		3	-		3	-

① = ANSI/ASME B1.20.1 NPT or ISO 228-1 or ISO 7/1 or EN 10226-1 or EN 10226-2

② = Arranged on 3 rows

L = Long Side

S = Short Side

ENCLOSURES

Ex db IIC ALUMINIUM AND STAINLESS STEEL ENCLOSURES - GUB SERIES



INSTRUMENT ENCLOSURES



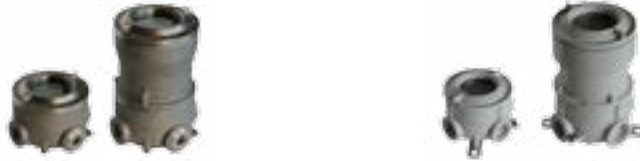
TERMINAL BOXES

Instrument and terminal boxes are used to contain instruments, measurement devices and terminals. Suitable to be used in potentially explosive areas zone 1,21 and zone 2,22 these products are available both in copper-free aluminium or ss316l material.

Combustion and Energy Ex db IIC enclosures are ATEX, IECEx, Tr Cu and INMETRO certified.

ENCLOSURES


INSTRUMENT ENCLOSURES TECHNICAL SPECIFICATIONS



MATERIAL

- Enclosure material: Copper free aluminium or stainless steel AISI 316L

Ex CODE

- Ex marking:  II 2 GD
Ex db IIC T6 ... T4 Gb
Ex tb IIIC T85°C ... T135°C Db

MECHANICAL FEATURES

- Degree of protection: IP66
- Temperature: -50°C to +85°C
- Threaded holes: ISO Metric / ANSI B1.20.1 NPT

ELETRICAL FEATURES

- Max. rated voltage: 690 VAC / VDC
- Max. rated impulse voltage: 8 kV (max. 10 sec.)
- Frequency: 50 / 60 Hz
- Maximum rated current: 109 A
- Max. rated cross section: 35 sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-31
IEC 60079-0 / IEC 60079-1 / IEC 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS

-  FTZÚ 15 ATEX 0182X
-  FTZÚ 15.0035X
-  RU C-IT.AA87.B.00762/21
-  DNV 20.0152X

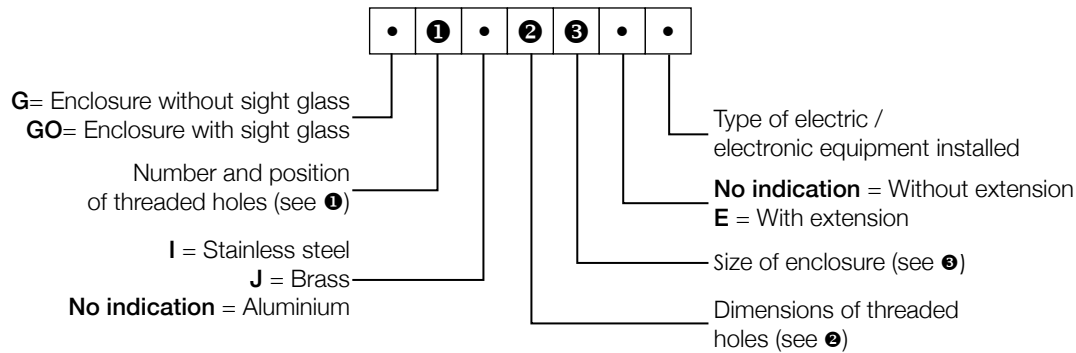
NOTE

Certificate for Group I available.

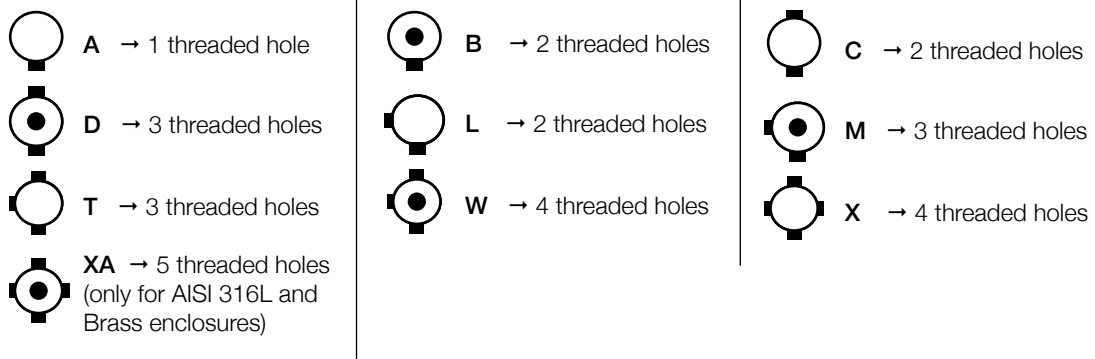
ENCLOSURES

INSTRUMENT ENCLOSURES TECHNICAL SPECIFICATIONS

TYPE DESIGNATION OF INSTRUMENT ENCLOSURES



❶ Number and position of threaded holes (for Stainless steel and brass instrument enclosures):



❷ Dimensions of threaded holes:

1= 1/2" NPT

2= 3/4" NPT

3= 1" NPT

4= 1.1/4" NPT

5= 1.1/2" NPT

6= 2" NPT

20= M20x1.5

25= M25x1.5

32= M32x1.5

40= M40x1.5

50= M50x1.5

63= M63x1.5

K = Mixed

In case of entries having different threading and/or dimensions on the same enclosure, the marking will include the letter "K" and the layout of the threaded holes will be attached to the operating and maintenance manual.

❸ Size of the enclosures (all dimensions ± 3 mm):

AISI 316L and Brass Enclosures

4 = \varnothing 71 mm;

6 = \varnothing 90 mm;

6A = \varnothing 90 mm;

7 = \varnothing 112 mm;

8 = \varnothing 131 mm ;

9 = \varnothing 146 mm

Aluminium Enclosures

4 = \varnothing 71mm;

6 = \varnothing 90 mm;

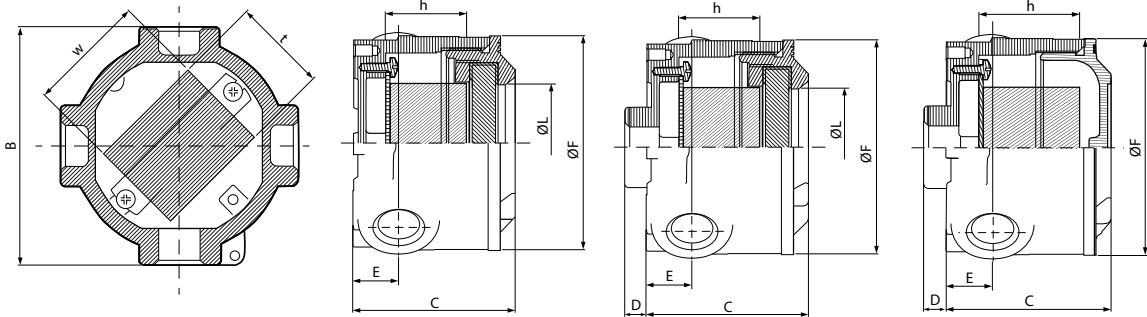
6A = \varnothing 90 mm;

8 = \varnothing 130 mm;

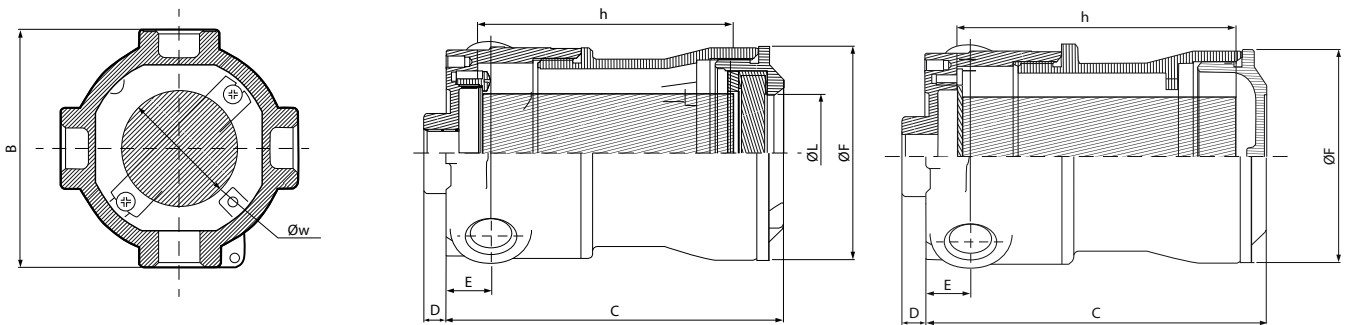
9 = \varnothing 145 mm ;

ENCLOSURES

AISI 316L INSTRUMENT ENCLOSURES DRAWINGS AND DIMENSIONS



WITH / WITHOUT WINDOW AND WITHOUT EXTENSION										
⊕ Size	External dimensions (mm)						Max. dimensions apparatus (mm)			
	B	C	D	E	ØF	ØL	h	h (no window)	w	t
4	80	69	9	20	71	30	30	40	30	28
6	100	68	9,5	22,5	90	50	30	40	50	35
6A	100	73	9,5	22,5	90	50	35	45	50	35
7	126	82	11	24	112	65	40	50	65	45
8	145	99	9,5	27	131	70	55	65	70	60
9	161	115	9,5	27	146	85	65	80	85	65

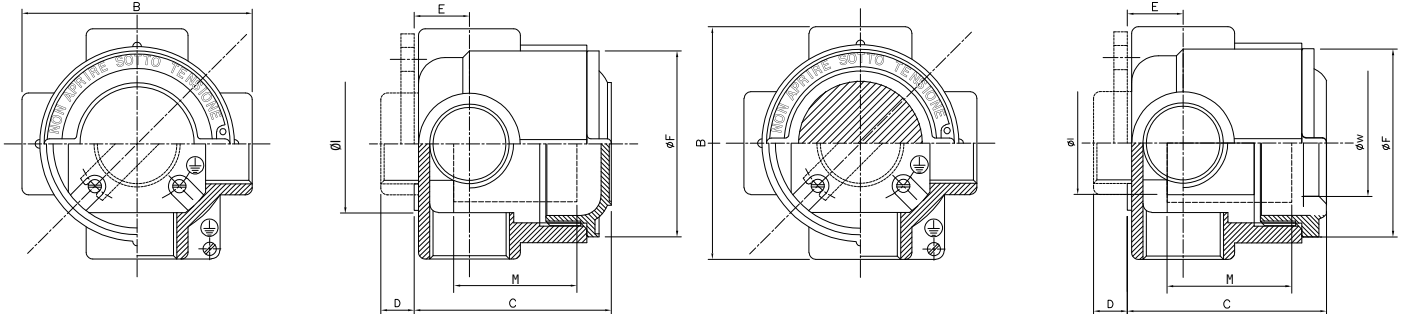


WITH / WITHOUT WINDOW AND WITH EXTENSION									
⊕ Size	External dimensions (mm)						Max. dimensions apparatus (mm)		
	B	C	D	E	ØF	ØL	h	h (no window)	Øw
4	80	129	9	20	71	30	75	90	30
6	100	118 ÷ 143	9,5	22,5	90	50	70 ÷ 95	80 ÷ 105	50
6A	100	123 ÷ 148	9,5	22,5	90	50	75 ÷ 100	85 ÷ 110	50
7	126	132 ÷ 172	11	24	112	65	80 ÷ 120	90 ÷ 130	65
8	145	149 ÷ 189	9,5	27	131	70	90 ÷ 130	65	70
9	161	165 ÷ 215	9,5	27	146	85	100 ÷ 150	80	85

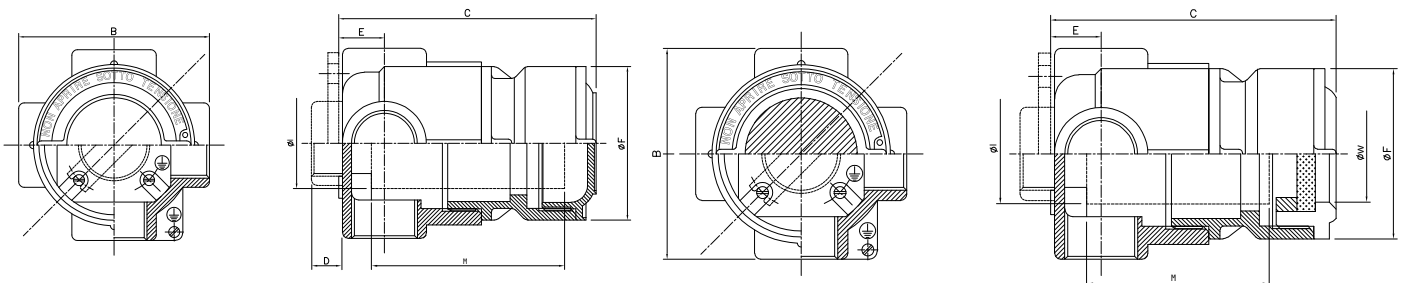
Dimensions and weights are approximate and subject to change without notice.

ENCLOSURES

ALUMINIUM INSTRUMENT ENCLOSURES DRAWINGS AND DIMENSIONS



WITH / WITHOUT WINDOW AND WITHOUT EXTENSION									
Size	External dimensions (mm)						Max. dimensions apparatus		
	B	C	D	E	ØF	Øw	M (mm)	M (mm) (no window)	ØI
4	80	77	9	20	70	38	22	49	44
6	100	78	8	20	90	50	23	49	64
6A	100	86	8	23	90	50	30	57	64
8	138	113	14	32	130	82	46	80	96
9	150	126	14	36	145	96	52	90	106



WITH / WITHOUT WINDOW AND WITH EXTENSION									
Size	External dimensions (mm)						Max. dimensions apparatus		
	B	C	D	E	ØF	Øw	M (mm)	M (mm) (no window)	ØI
4	80	121	9	20	70	38	82	103	44
6	100	141	8	20	90	50	98	123	64
6A	100	148	8	23	90	50	105	131	64
8	138	185	14	32	130	82	138	168	96
9	150	205	14	36	145	96	153	188	106

Dimensions and weights are approximate and subject to change without notice.

ENCLOSURES


TERMINAL BOXES TECHNICAL SPECIFICATIONS



MATERIAL

- Enclosure material: Copper free Aluminium or stainless steel SS316L

Ex CODE

- Ex marking:  II 2 GD
Ex db IIC T6 ... T4 Gb
Ex tb IIIC T85°C ... T135°C Db

MECHANICAL FEATURES

- Degree of protection: IP66
- Temperature: -50°C to +85°C
- Threaded holes: ISO Metric / ANSI B1.20.1 NPT

ELETRICAL FEATURES

- Max. rated voltage: 690 VAC / VDC
- Max. rated impulse voltage: 8 kV (max. 10 sec.)
- Frequency: 50 / 60 Hz
- Maximum rated current: 109 A
- Max. rated cross section: 35 sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-31
IEC 60079-0 / IEC 60079-1 / IEC 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS



FTZÚ 15 ATEX 0182X



FTZÚ 15.0035X



RU C-IT.AA87.B.00762/21



DNV 20.0152X

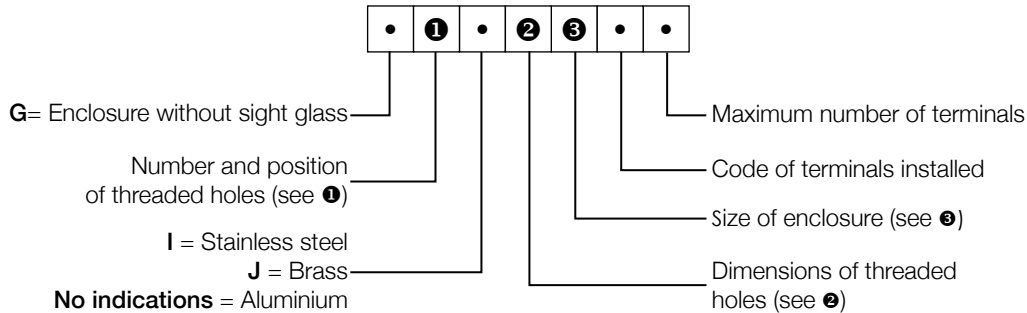
NOTE

Certificate for Group I available.

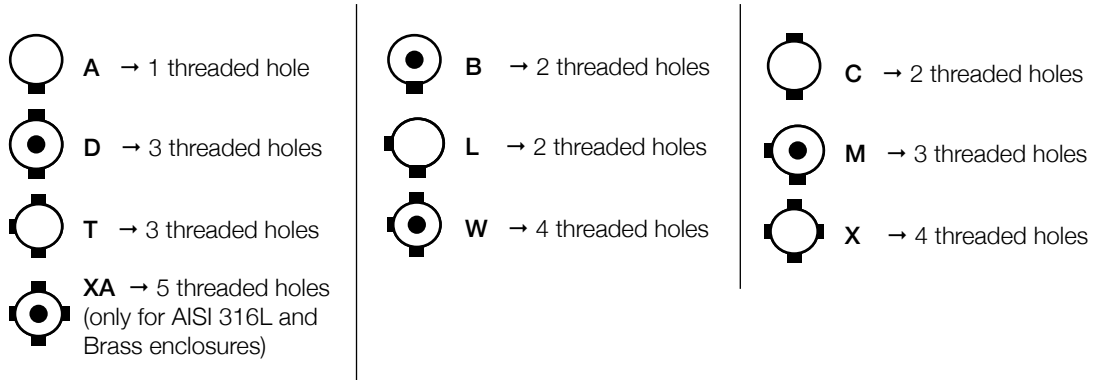
ENCLOSURES

TERMINAL BOXES TECHNICAL SPECIFICATIONS

TYPE DESIGNATION OF INSTRUMENT ENCLOSURES



❶ Number and position of threaded holes (for Stainless steel and brass instrument enclosures):



❷ Dimensions of threaded holes:

1 = 1/2" NPT	20 = M20x1.5
2 = 3/4" NPT	25 = M25x1.5
3 = 1" NPT	32 = M32x1.5
4 = 1.1/4" NPT	40 = M40x1.5
5 = 1.1/2" NPT	50 = M50x1.5
6 = 2" NPT	63 = M63x1.5

K = Mixed

In case of entries having different threading and/or dimensions on the same enclosure, the marking will include the letter "K" and the layout of the threaded holes will be attached to the operating and maintenance manual.

❸ Size of the enclosures (all dimensions \pm 3 mm):

AISI 316L and Brass Enclosures

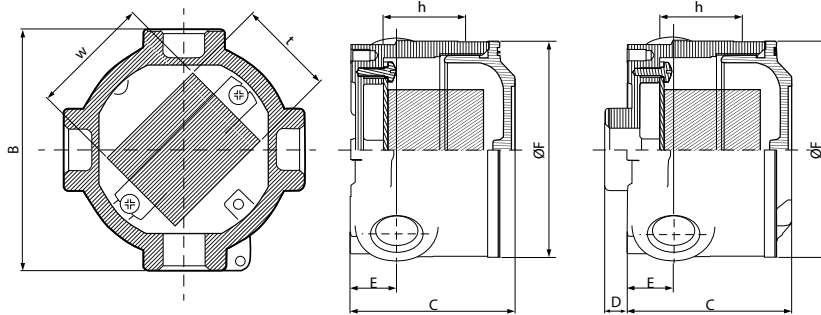
4 = \varnothing 71 mm;
6 = \varnothing 90 mm;
6A = \varnothing 90 mm;
7 = \varnothing 112 mm;
8 = \varnothing 131 mm ;
9 = \varnothing 146 mm

Aluminium Enclosures

4 = \varnothing 71mm;
6 = \varnothing 90 mm;
6A = \varnothing 90 mm;
7 = \varnothing 112 mm;
8 = \varnothing 131 mm ;

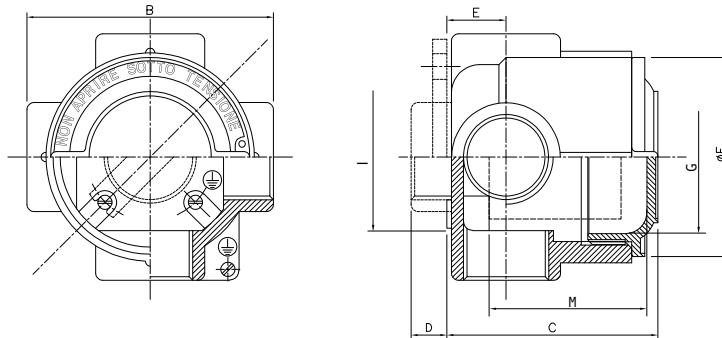
ENCLOSURES

AISI 316L AND ALUMINIUM TERMINAL BOXES DRAWINGS AND DIMENSION



AISI 316L TERMINAL BOXES - WITHOUT WINDOW AND WITHOUT EXTENSION

Size	External dimensions (mm)					Max. dimensions terminal strip (mm)			Max. volume terminals strip (dm ³)
	B	C	D	E	ØF	h	w	t	
4	80	69	9	20	71	40	30	28	0,033
6	100	68	9,5	22,5	90	40	50	35	0,070
6A	100	73	9,5	22,5	90	45	50	35	0,078
7	126	82	11	24	112	50	65	45	0,146
8	145	99	9,5	27	131	65	70	60	0,273
9	161	115	9,5	27	146	75	85	65	0,414



ALUMINIUM TERMINAL BOXES - WITHOUT WINDOW AND WITHOUT EXTENSION

Size	External dimensions (mm)					Max. dimensions apparatus (mm)		
	B	C	D	E	ØF	M	I	G
4	80	77	9	20	70	49	51	51
6	100	78	8	20	90	49	70	70
6A	100	86	8	23	90	57	70	70
8	138	113	14	32	130	80	98	103
9	150	126	14	36	145	90	112	118

Dimensions and weights are approximate and subject to change without notice.

Ex db eb IIC CONTROL STATIONS AND Ex eb IIC TERMINAL BOXES



CONTROL STATIONS

TERMINAL BOXES

CE2K-...-series of terminal boxes is suitable to contain Ex i terminals for incoming/outgoing cable connections.

The control and signalling units series CE2K-...-CS-SSX can be equipped with certified components. Terminal boxes and control stations are available in Stainless Steel SS316L or in GRP (Glass Reinforced Polyester) material.

Combustion and Energy Ex db and Ex eb terminal boxes and control stations are ATEX and INMETRO certified.

ENCLOSURES

AISI 316L CONTROL STATIONS TECHNICAL SPECIFICATION



DESCRIPTION

The control and signalling units series CE2K-... ..-CS-SSX are able to operate in an ambient temperature from -60°C to +85°C and consist of enclosures having degree of protection IP66.

The lids are equipped with a silicone gasket suitable for an ambient temperature from -60°C to +85°C and for a max. surface temperature from T85°C to T100°C.

The control and signalling units series CE2K-... ..-CS-SSX can be equipped with certified components like:

- **ammeter/voltmeter;**
- **switch module (for push-button, selector switch, control switch, etc.) and relevant actuator;**
- **safety switch;**
- **signalling lamp or Led; illuminated button;**
- **fuse;**
- **potentiometer.**

Temperature class depends on the temperature class of the "hottest" component(s): if at least one component having temperature class T5 or T4 is mounted, the temperature class shall be T5 or T4.


The maximum permissible ambient temperature of the certified operators shall duly be considered.

For area of drilling on the lid must be considered the lid dimensions less 15%.

MATERIAL

- Enclosure material: Stainless steel AISI 316L

Ex CODE

- Ex marking:  II 2 GD
Ex db IIC T6/T5 Gb
Ex tb IIIC T85°C / T100°C Db

ENCLOSURES

AISI 316L CONTROL STATIONS TECHNICAL SPECIFICATION

MECHANICAL FEATURES

- Degree of protection: IP66
- External earth: bolt M10
- Material gasket: silicone
- Mounting plate: SS type included
- Cover: solid
- Cover fixing: by screws or by hinges
- Removable gland plate: Upon request

ELETRICAL FEATURES

- Max. rated voltage (Ex e): 11k VAC or VDC
- Max. rated voltage (Ex i): 30 VAC or VDC
- Frequency: 50/60 Hz
- Maximum rated current: 520A
- Maximum rated cross section: 300sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-7 / EN 60079-11/ EN 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS



CEC 15ATEX211



DNV 20.0151X

ENCLOSURES

AISI 316L CONTROL STATIONS DIMENSIONS

Model	External dimensions						kg	Mounting plate dimensions				External fixing bracket
	W		H		D			W		H		
	mm	in	mm	in	mm	in		mm	in	mm	in	
CE2K-09 14 09-CS-SSX CE2K-09 14 09-CS-SSX-F	90	3.54	140	5.51	90	3.54	0.70					2
CE2K-09 20 09-CS-SSX CE2K-09 20 09-CS-SSX-F	90	3.54	200	7.87	90	3.54	0.88					2
CE2K-09 28 09-CS-SSX CE2K-09 28 09-CS-SSX-F	90	3.54	280	11.02	90	3.54	1.15					2
CE2K-10 10 10-CS-SSX CE2K-10 10 10-CS-SSX-F	100	3.94	100	3.94	100	3.94	0.74	70	2.76	85	3.35	2
CE2K-10 16 10-CS-SSX CE2K-10 16 10-CS-SSX-F	100	3.94	160	6.30	100	3.94	1.03	70	2.76	145	5.71	2
CE2K-10 20 10-CS-SSX CE2K-10 20 10-CS-SSX-F	100	3.94	200	7.87	100	3.94	1.23	70	2.76	185	7.28	2
CE2K-16 16 10-CS-SSX CE2K-16 16 10-CS-SSX-F	160	6.30	160	6.30	100	3.94	1.48	130	5.12	130	5.12	4
CE2K-16 25 10-CS-SSX CE2K-16 25 10-CS-SSX-F	160	6.30	250	9.84	100	3.94	2.10	130	5.12	220	8.66	4
CE2K-20 20 10-CS-SSX CE2K-20 20 10-CS-SSX-F	200	7.87	200	7.87	100	3.94	2.12	170	6.69	170	6.69	4
CE2K-20 25 12-SSX CE2K-20 25 12-SSX-F	200	7.87	250	9.84	120	4.72	2.82	170	6.69	220	8.66	4
CE2K-20 30 12-CS-SSX CE2K-20 30 12-CS-SSX-F	200	7.87	300	11.81	120	4.72	3.24	170	6.69	270	10.63	4
CE2K-20 40 12-CS-SSX CE2K-20 40 12-CS-SSX-F	200	7.87	400	15.75	120	4.72	4.20	170	6.69	370	14.57	4
CE2K-30 30 12-CS-SSX CE2K-30 30 12-CS-SSX-F	300	11.81	300	11.81	120	4.72	4.70	270	10.63	270	10.63	4
CE2K-30 40 12-CS-SSX CE2K-30 40 12-CS-SSX-F	300	11.81	400	15.75	120	4.72	6.03	270	10.63	370	15.57	4

Dimensions and weights are approximate and subject to change without notice.

Table above refers to Control Station with bolted cover. For the dimensions of Control Stations with hinges ask to info@ce2k.com.

ENCLOSURES

AISI 316L CONTROL STATIONS DIMENSIONS

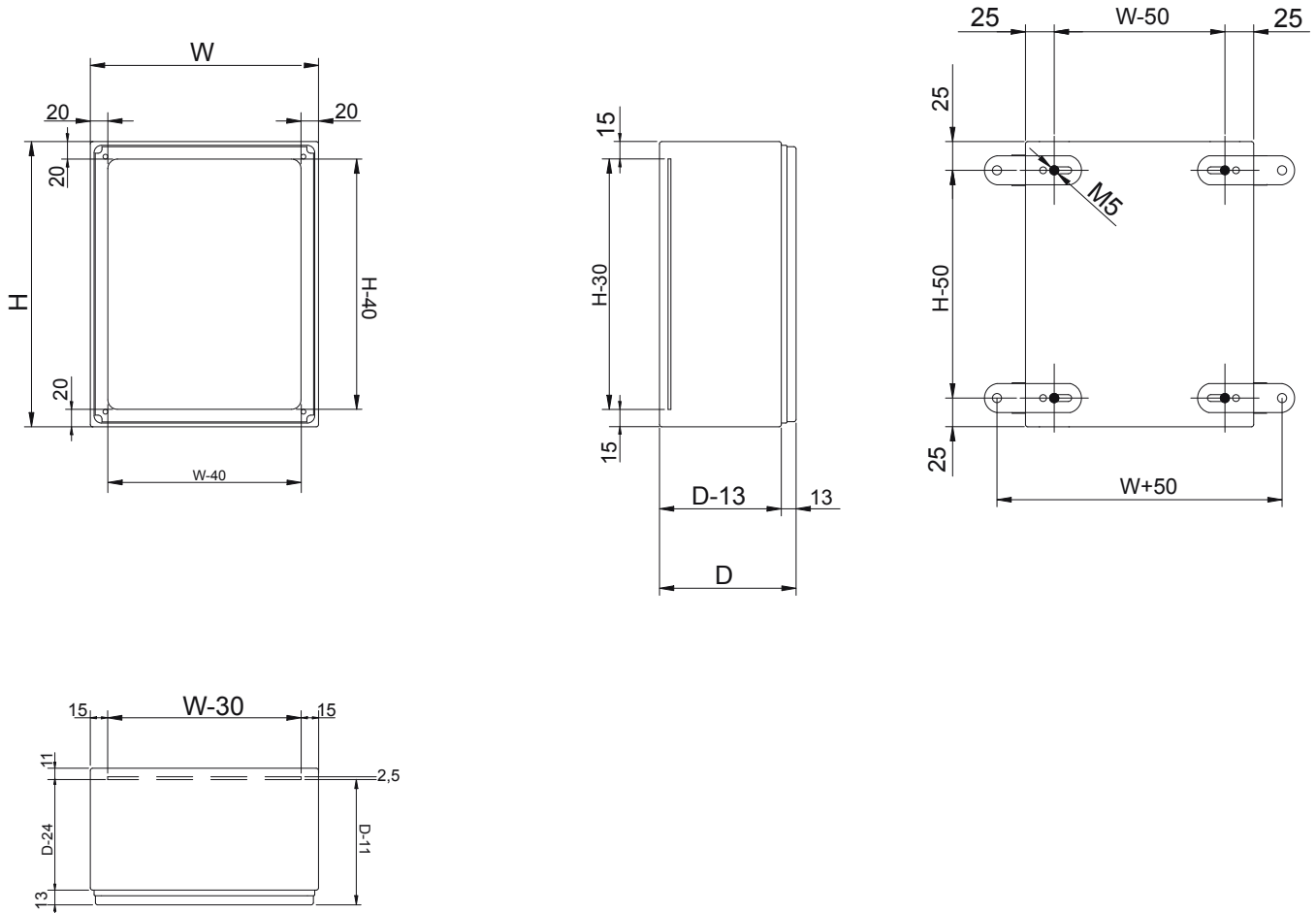
Model	Door drill size				Working depth		Certification
	W		H		W		
	mm	in	mm	in	mm	in	
CE2K-09 14 09-CS-SSX CE2K-09 14 09-CS-SSX-F	50	1.97	100	3.94	75	2.95	IP66
CE2K-09 20 09-CS-SSX CE2K-09 20 09-CS-SSX-F	50	1.97	160	6.30	75	2.95	IP66
CE2K-09 28 09-CS-SSX CE2K-09 28 09-CS-SSX-F	50	1.97	240	9.45	75	2.95	IP66
CE2K-10 10 10-CS-SSX CE2K-10 10 10-CS-SSX-F	60	2.36	60	2.36	85	3.35	IP66
CE2K-10 16 10-CS-SSX CE2K-10 16 10-CS-SSX-F	60	2.36	120	4.72	85	3.35	IP66
CE2K-10 20 10-CS-SSX CE2K-10 20 10-CS-SSX-F	60	2.36	160	6.30	85	3.35	IP66
CE2K-16 16 10-CS-SSX CE2K-16 16 10-CS-SSX-F	120	4.72	120	4.72	85	3.35	IP66
CE2K-16 25 10-CS-SSX CE2K-16 25 10-CS-SSX-F	120	4.72	210	8.27	85	3.35	IP66
CE2K-20 20 10-CS-SSX CE2K-20 20 10-CS-SSX-F	160	6.30	160	6.30	85	3.35	IP66
CE2K-20 25 12-SSX CE2K-20 25 12-SSX-F	160	6.30	210	8.27	105	4.13	IP66
CE2K-20 30 12-CS-SSX CE2K-20 30 12-CS-SSX-F	160	6.30	260	10.24	105	4.13	IP66
CE2K-20 40 12-CS-SSX CE2K-20 40 12-CS-SSX-F	160	6.30	360	14.17	105	4.13	IP66
CE2K-30 30 12-CS-SSX CE2K-30 30 12-CS-SSX-F	260	10.24	260	10.24	105	4.13	IP66
CE2K-30 40 12-CS-SSX CE2K-30 40 12-CS-SSX-F	260	10.24	360	14.17	105	4.13	IP66

Dimensions and weights are approximate and subject to change without notice.

Table above refers to Control Station with bolted cover. For the dimensions of Control Stations with hinges ask to info@ce2k.com.

ENCLOSURES

AISI 316L CONTROL STATIONS DRAWINGS



Drawings above refer to Control Station with bolted cover. For the drawings of hinges of Control Stations ask to info@ce2k.com.

GRP CONTROL STATIONS TECHNICAL SPECIFICATIONS



DESCRIPTION

The CE2K-... ..-CS-GRP range includes 25 sizes of enclosures manufactured in GRP (glass reinforced polyester) with 4mm thickness, that can be threaded.

Polyester is a valid alternative to aluminum, stainless steel or cast iron; it has excellent mechanical strength and a long life expectancy.

The boxes series CE2K-... ..-CS-GRP are able to operate in an ambient temperature from -60°C to +85°C and consist of enclosures having degree of protection IP66 (with red or white colour silicone gasket placed on internal part of the lid) or IP66/67 (as option).

The control and signalling units series CE2K-... ..-CS-GRP can be equipped with certified components like:

- **ammeter/voltmeter;**
- **switch module (for push-button, selector switch, control switch, etc.) and relevant actuator;**
- **safety switch;**
- **signalling lamp or Led; illuminated button;**
- **fuse;**
- **potentiometer.**

Temperature class depends on the temperature class of the "hottest" component(s): if at least one component having temperature class T5 or T4 is mounted, the temperature class shall be T5 or T4.


The maximum permissible ambient temperature of the certified operators shall duly be considered.

For area of drilling on the lid must be considered the lid dimensions less 15%.

MATERIAL

- Enclosure material: Black glass fibre reinforced polyester resin graphite added (surface resistance <1GΩ)

Ex CODE

- Ex marking:  II 2 GD
Ex eb IIC T6/T5 Gb
Ex tb IIIC T85°C / T100°C Db

ENCLOSURES

GRP CONTROL STATIONS TECHNICAL SPECIFICATIONS

MECHANICAL FEATURES

- Thickness: 4mm
- Degree of protection: IP66 (IP66/67 as option)
- Back fixing points Gasket: silicone
- Mounting plate: as option
- Mounting plate dimensions: see technical details
- Cover: solid
- Cover fixing: by screws

ELETRICAL FEATURES

- Max. rated voltage (Ex e): 11k VAC or VDC
- Max. rated voltage (Ex i): 30 VAC or VDC
- Frequency: 50/60 Hz
- Maximum rated current: 520A
- Maximum rated cross section: 300sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-7 / EN 60079-11/ EN 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS



CEC 15ATEX211



DNV 20.0151X

ENCLOSURES

GRP CONTROL STATIONS DIMENSIONS

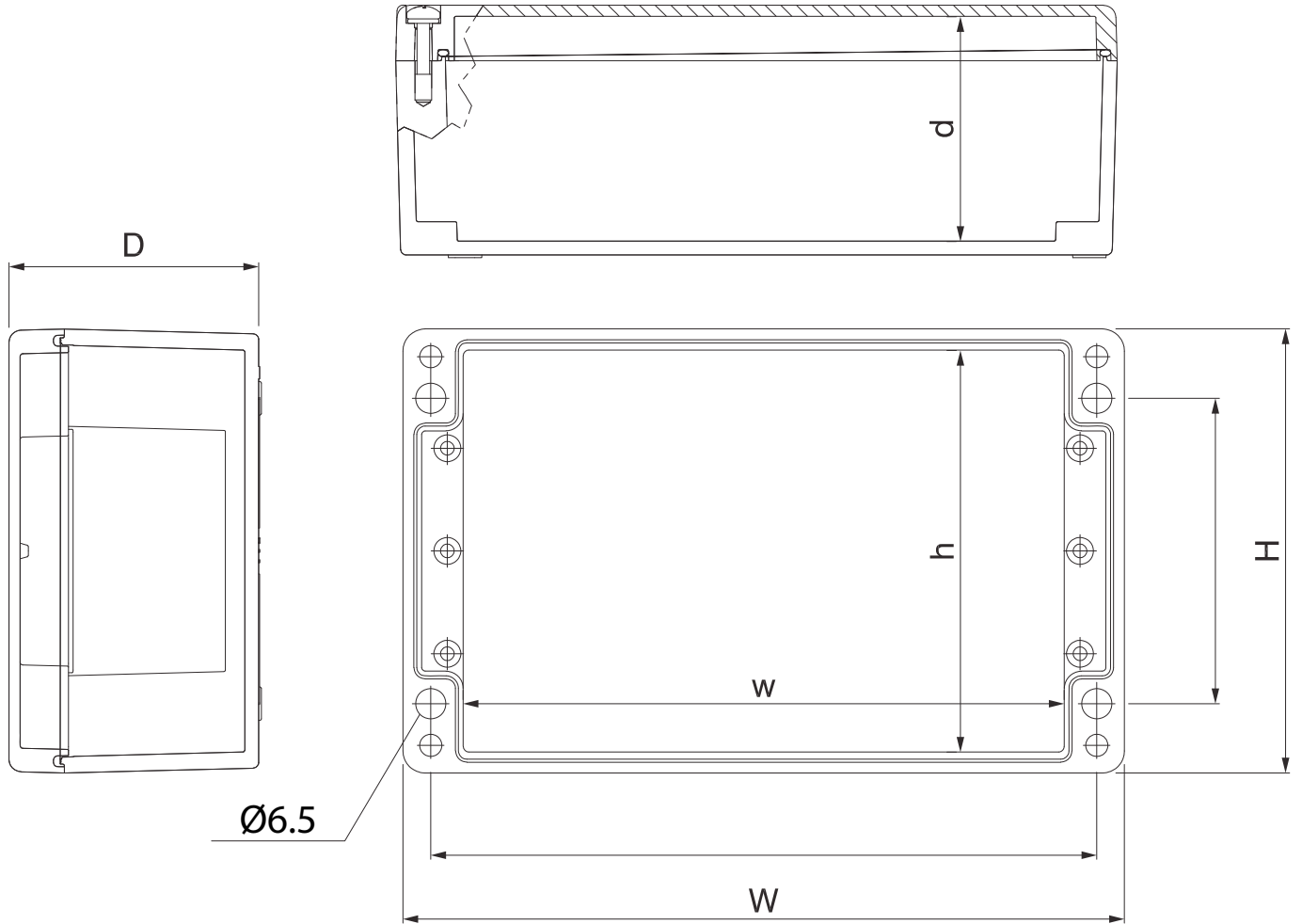
Model	External dimensions			Internal dimensions			Fixing		Screw
	H	W	D	h	w	d	H+	W+	
	mm	mm	mm	mm	mm	mm			
CE2K-12 12 09-CS-GRP	120	122	90	102	104	80	82	106	M6
CE2K-12 22 09-CS-GRP	120	220	90	102	190	80	82	204	
CE2K-16 16 09-CS-GRP	160	160	90	142	112	80	110	140	
CE2K-16 26 09-CS-GRP	160	260	90	142	212	80	110	240	
CE2K-16 36 09-CS-GRP	160	360	90	142	312	80	110	340	
CE2K- 16 56 09-CS-GRP	160	560	90	142	512	80	110	540	
CE2K-20 25 12-CS-GRP	200	250	120	180	230	110			
CE2K-25 25 12-CS-GRP	250	255	120	230	235	110	200	235	
CE2K-25 25 16-CS-GRP	250	255	160	230	235	140			
CE2K-25 40 12-CS-GRP	250	400	120	230	380	110	200	380	
CE2K-25 40 16-CS-GRP	250	400	160	230	380	160			
CE2K-25 60 12-CS-GRP	250	600	120	230	580	110			
CE2K-25 60 16-CS-GRP	250	600	160	230	580	140			
CE2K-40 40 12-CS-GRP	405	600	120	385	580	110			
CE2K-40 40 16-CS-GRP	405	400	165	385	380	154	355	380	

Dimensions and weights are approximate and subject to change without notice.

For other dimensions of the Terminal Boxes ask to info@ce2k.com.

ENCLOSURES

GRP CONTROL STATIONS DRAWINGS



ENCLOSURES

AISI 316L TERMINAL BOXES TECHNICAL SPECIFICATIONS



DESCRIPTION

The terminal boxes series CE2K-...-SSX are able to operate in an ambient temperature from -60°C to +85°C and consist of enclosures having degree of protection IP66.

The terminal boxes contain Ex e and/or Ex i terminals for incoming/outgoing cables connections.


The lids of the terminal boxes are equipped with a silicone gasket.

The terminal boxes may have flanged walls and may be fitted with different types of terminals manufactured by: Weidmüller; ABB Entrelec; Wago; Phoenix Contact; Cabur.

MATERIAL

- Enclosure material: Stainless Steel AISI316L

Ex CODE

- Ex marking:  II 2 GD
Ex eb IIC T6/T5 Gb
Ex tb IIIC T85°C / T100°C Db

MECHANICAL FEATURES

- | | |
|------------------------------|------------------------|
| • External fixing bracket: | included |
| • External earth: | bolt M10 |
| • Degree of protection: | IP66 |
| • Gasket: | silicone |
| • Mounting plate: | SS type included |
| • Mounting plate dimensions: | see technical details |
| • Cover: | solid |
| • Cover fixing: | by screws or by hinges |
| • Removable gland plate: | on request |

ENCLOSURES

AISI 316L TERMINAL BOXES TECHNICAL SPECIFICATIONS

ELETRICAL FEATURES

- Max. rated voltage (Ex e): 11k VAC or VDC
- Max. rated voltage (Ex i): 30 VAC or VDC
- Frequency: 50/60 Hz
- Maximum rated current: 520A
- Maximum rated cross section: 300sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-7 / EN 60079-11/ EN 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS



FTZÚ 15 ATEX 0182X



DNV 20.0150X

ENCLOSURES

AISI 316L TERMINAL BOXES DIMENSIONS

Model	External dimensions						kg	Mounting plate dimensions				External fixing bracket
	W		H		D			W		H		
	mm	in	mm	in	mm	in		mm	in	mm	in	
CE2K-09 09 09-SSX CE2K-09 09 09-SSX-F	90	3.54	90	3.54	90	3.54	0.54					2
CE2K-09 14 09-SSX CE2K-09 14 09-SSX-F	90	3.54	140	5.51	90	3.54	0.70					2
CE2K-09 20 09-SSX CE2K-09 20 09-SSX-F	90	3.54	200	7.87	90	3.54	0.88					2
CE2K-09 28 09-SSX CE2K-09 28 09-SSX-F	90	3.54	280	11.02	90	3.54	1.15					2
CE2K-10 10 10-SSX CE2K-10 10 10-SSX-F	100	3.94	100	3.94	100	3.94	0.74	70	2.76	85	3.35	2
CE2K-10 16 10-SSX CE2K-10 16 10-SSX-F	100	3.94	160	6.30	100	3.94	1.03	70	2.76	145	5.71	2
CE2K-10 20 10-SSX CE2K-10 20 10-SSX-F	100	3.94	200	7.87	100	3.94	1.23	70	2.76	185	7.28	2
CE2K-16 16 10-SSX CE2K-16 16 10-SSX-F	160	6.30	160	6.30	100	3.94	1.48	130	5.12	130	5.12	4
CE2K-16 25 10-SSX CE2K-16 25 10-SSX-F	160	6.30	250	9.84	100	3.94	2.10	130	5.12	220	8.66	4
CE2K-20 20 10-SSX CE2K-20 20 10-SSX-F	200	7.87	200	7.87	100	3.94	2.12	170	6.69	170	6.69	4
CE2K-20 25 12-SSX CE2K-20 25 12-SSX-F	200	7.87	250	9.84	120	4.72	2.82	170	6.69	220	8.66	4
CE2K-20 30 12-SSX CE2K-20 30 12-SSX-F	200	7.87	300	11.81	120	4.72	3.24	170	6.69	270	10.63	4
CE2K-20 40 12-SSX CE2K-20 40 12-SSX-F	200	7.87	400	15.75	120	4.72	4.20	170	6.69	370	14.57	4
CE2K-30 30 12-SSX CE2K-30 30 12-SSX-F	300	11.81	300	11.81	120	4.72	4.70	270	10.63	270	10.63	4
CE2K-30 40 12-SSX CE2K-30 40 12-SSX-F	300	11.81	400	15.75	120	4.72	6.03	270	10.63	370	15.57	4

Dimensions and weights are approximate and subject to change without notice.

Table above refers to Control Station with bolted cover. For the dimensions of Control Stations with hinges ask to info@ce2k.com.

ENCLOSURES

AISI 316L TERMINAL BOXES DIMENSIONS

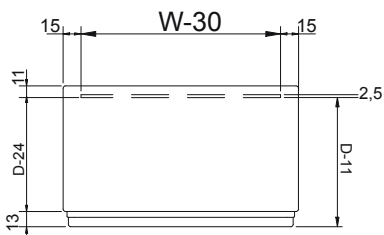
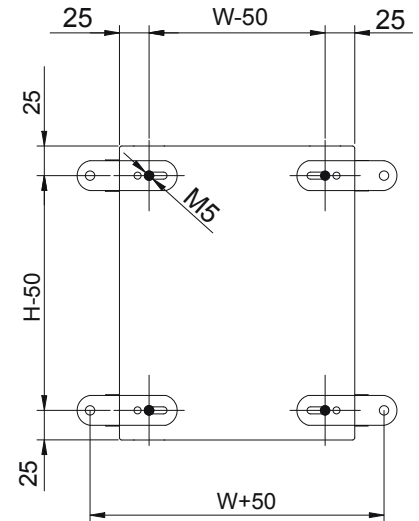
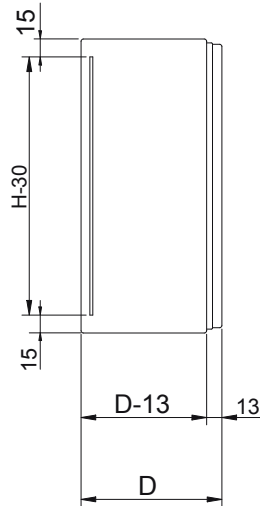
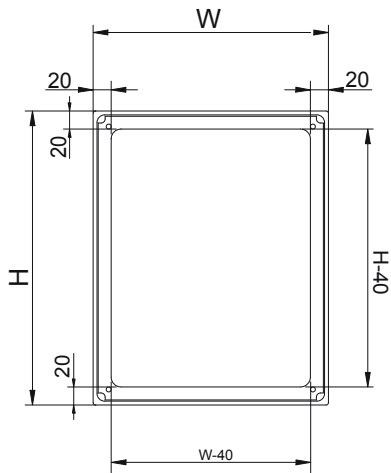
Model	Door drill size				Working depth		Certification
	W		H		D		
	mm	in	mm	in	mm	in	
CE2K-09 09 09-SSX CE2K-09 09 09-SSX-F	50	1.97	50	1.97	75	2.95	IP66
CE2K-09 14 09-SSX CE2K-09 14 09-SSX-F	50	1.97	100	3.94	75	2.95	IP66
CE2K-09 20 09-SSX CE2K-09 20 09-SSX-F	50	1.97	160	6.30	75	2.95	IP66
CE2K-09 28 09-SSX CE2K-09 28 09-SSX-F	50	1.97	240	9.45	75	2.95	IP66
CE2K-10 10 10-SSX CE2K-10 10 10-SSX-F	60	2.36	60	2.36	85	3.35	IP66
CE2K-10 16 10-SSX CE2K-10 16 10-SSX-F	60	2.36	120	4.72	85	3.35	IP66
CE2K-10 20 10-SSX CE2K-10 20 10-SSX-F	60	2.36	160	6.30	85	3.35	IP66
CE2K-16 16 10-SSX CE2K-16 16 10-SSX-F	120	4.72	120	4.72	85	3.35	IP66
CE2K-16 25 10-SSX CE2K-16 25 10-SSX-F	120	4.72	210	8.27	85	3.35	IP66
CE2K-20 20 10-SSX CE2K-20 20 10-SSX-F	160	6.30	160	6.30	85	3.35	IP66
CE2K-20 25 12-SSX CE2K-20 25 12-SSX-F	160	6.30	210	8.27	105	4.13	IP66
CE2K-20 30 12-SSX CE2K-20 30 12-SSX-F	160	6.30	260	10.24	105	4.13	IP66
CE2K-20 40 12-SSX CE2K-20 40 12-SSX-F	160	6.30	360	14.17	105	4.13	IP66
CE2K-30 30 12-SSX CE2K-30 30 12-SSX-F	260	10.24	260	10.24	105	4.13	IP66
CE2K-30 40 12-SSX CE2K-30 40 12-SSX-F	260	10.24	360	14.17	105	4.13	IP66

Dimensions and weights are approximate and subject to change without notice.

Table above refers to Control Station with bolted cover. For the dimensions of Control Stations with hinges ask to info@ce2k.com.

ENCLOSURES

AISI 316L TERMINAL BOXES DRAWINGS



Drawings above refer to Control Station with bolted cover. For the drawings of hinges of Control Stations ask to info@ce2k.com.

GRP TERMINAL BOXES TECHNICAL SPECIFICATIONS



DESCRIPTION

The terminal boxes series CE2K-... ..-GRP are able to operate in an ambient temperature from -60°C to +85°C and consist of enclosures having degree of protection IP66 (with red or white colour silicone gasket placed on internal part of the lid) or IP66/67 (as option).


The CE2K-... ..-GRP range includes 25 sizes of enclosures manufactured in GRP glass reinforced polyester with 4 mm thickness, that can be threaded.

Polyester is a valid alternative to aluminum, stainless steel or cast iron; it has excellent mechanical strength and a long life expectancy.

MATERIAL

- Enclosure material: Black glass fibre reinforced polyester resin graphite addes (surface resistance <math><1G\Omega</math>)

Ex CODE

- Ex marking:  II 2 GD
Ex db IIC T6/T5 Gb
Ex tb IIIC T85°C / T100°C Db

MECHANICAL FEATURES

- Thickness: 4mm
- Degree of protection: IP66 (IP66/67 as option)
- Back fixing points
- Gasket: silicone
- Mounting plate: as option
- Mounting plate dimensions: see technical details
- Cover: solid
- Cover fixing: by screws

ENCLOSURES

GRP TERMINAL BOXES TECHNICAL SPECIFICATIONS

ELETRICAL FEATURES

- Max. rated voltage (Ex e): 11k VAC or VDC
- Max. rated voltage (Ex i): 30 VAC or VDC
- Frequency: 50/60 Hz
- Maximum rated current: 520A
- Maximum rated cross section: 300sqmm

Ex FEATURES

- Standards: EN 60079-0 / EN 60079-1 / EN 60079-7 / EN 60079-11/ EN 60079-31
- Suitable for: Zone 1 / Zone 2 / Zone 21 / Zone 22

CERTIFICATIONS



CEC 15ATEX211



DNV 20.0150X

ENCLOSURES

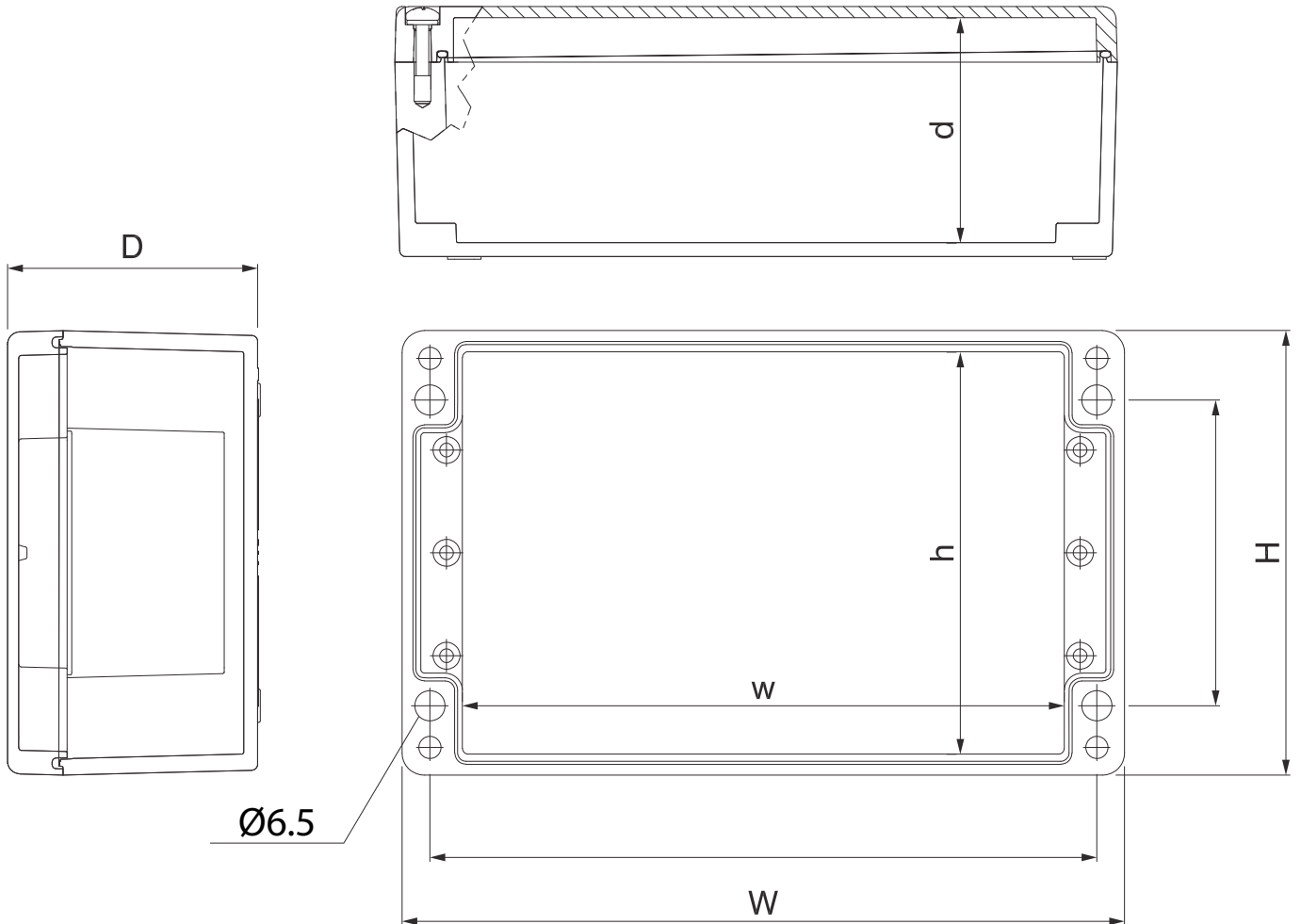
GRP TERMINAL BOXES DIMENSIONS

Model	External dimensions			Internal dimensions			Fixing		Screw
	H	W	D	h	w	d	H+	W+	
	mm	mm	mm	mm	mm	mm			
CE2K-75 08 55-GRP	75	80	55	58	48	46	45	68	M4
CE2K-75 08 75-GRP	75	80	75	58	48	66	45	68	
CE2K-75 11 55-GRP	75	110	55	58	78	46	45	98	
CE2K-75 11 75-GRP	75	110	75	58	78	66	45	98	
CE2K-75 16 55-GRP	75	160	55	58	128	46	45	148	
CE2K-75 16 75-GRP	75	160	75	58	128	66	45	148	
CE2K-75 19 55-GRP	75	190	55	58	158	46	45	178	
CE2K-75 19 75-GRP	75	190	75	58	158	66	45	178	
CE2K-75 23 55-GRP	75	230	55	58	198	46	39	218	
CE2K-75 23 75-GRP	75	230	75	58	198	66	39	218	
CE2K-12 12 09-GRP	120	122	90	102	104	80	82	106	M6
CE2K-12 22 09-GRP	120	220	90	102	190	80	82	204	
CE2K-16 16 09-GRP	160	160	90	142	112	80	110	140	
CE2K-16 26 09-GRP	160	260	90	142	212	80	110	240	
CE2K-16 36 09-GRP	160	360	90	142	312	80	110	340	
CE2K-16 56 09-GRP	160	560	90	142	512	80	110	540	
CE2K-20 25 12-GRP	200	250	120	180	230	110			
CE2K-25 25 12-GRP	250	255	120	230	235	110	200	235	
CE2K-25 25 16-GRP	250	255	160	230	235	140			
CE2K-25 40 12-GRP	250	400	120	230	380	110	200	380	
CE2K-25 40 16-GRP	250	400	160	230	380	160			
CE2K-25 60 12-GRP	250	600	120	230	580	110			
CE2K-25 60 16-GRP	250	600	160	230	580	140			
CE2K-40 40 12-GRP	405	600	120	385	580	110			
CE2K-40 40 16-GRP	405	400	165	385	380	154	355	380	

Dimensions and weights are approximate and subject to change without notice.
For other dimensions of the Terminal Boxes ask to info@ce2k.com.

ENCLOSURES

GRP TERMINAL BOXES DRAWINGS



C&E *group*



C&E group Srl - Milano (Italy)

www.h4air.com

EFFICIENT INNOVATION BV
Deventerstraat 386
Apledoorn 7325-Netherland

AVIMAR ApS
Moesgaardvej 14
8270 Hoejbjerg - Denmark
www.avimar.dk