Escape Ex1

Emergency LED Lighting fixture for zone 1/21

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Note on instructions

When working in potentially explosive areas, the safety of people and systems depends on compliance with the relevant safety regulations. Persons responsible for assembly and maintenance bear a special responsibility. A prerequisite for this is precise knowledge of the applicable rules and regulations.

The instructions summarise the most important safety measures and must be read by everyone working with the product in order to make sure that they are familiar with the correct handling of the product.

The instructions must be retained and must be available throughout the life of the product.

Description

The Escape Ex1 series lighting fixtures are specifically designed for use in potentially explosive areas, certified for ATEX Zone 1/21 hazardous environments. High quality LED components guarantee exceptional efficiency up to 160 lm/W and extremely long lifetime of 100,000 hours even at elevated temperatures.

Their IP66 and IK08 protection ratings guarantee reliable performance even in the harshest industrial conditions.The lightweight yet robust body, made of UV-stable polycarbonate (RAL 7035), ensures long-term durability without degradation from environmental factors. The opal polycarbonate cover provides effective light diffusion while maintaining high impact resistance, further enhancing their operational reliability. These fixtures offer versatile mounting solutions and feature innovative emergency function control that enables safe operation without opening the luminaire in hazardous areas.

Safety Instructions

The Escape Ex1 lighting fixture may only be used within the specified temperature range. Unprotected, incorrect installation may result in malfunctions or loss of explosion protection.
The connection and installation/disassembly of the Escape Ex1 lighting fixtures must be carried out by qualified personnel who are authorized and trained to install lighting fixtures in potentially explosive atmospheres. Use in any areas other than those specified or modification of the product by anyone other than the manufacturer releases BARTEC from liability for defects and further liability.

When setting up explosion-protected lighting fixtures, the relevant installation and operating regulations must be observed. The generally applicable legal rules and other binding guidelines on occupational safety, accident prevention and environmental protection must be observed.
The Escape Ex1 lighting fixture may only be operated in a clean, undamaged condition. Any modifications and alterations are not permitted.

Reference standards

Directive 2014/34/EU	
ATEX Ex protection type	Ⓔx II 2G Ex eb mb IIC T4 Gb Ⓔx II 2D Ex tb IIIC T85°C Db
ATEX certificate number	FTZU 26 ATEX 0001X
Rules of compliance	EN/IEC 60079-0: 2017 EN/IEC 60079-18: 2017 EN/IEC 60079-31: 2022 EN/IEC 60079-7: 2017
IECEx Ex protection type	Ex eb mb IIC T4 Gb Ex tb IIIC T85°C Db
IECEx certificate number	IECEx FTZU 26.0005X
Ingress protection	IP66 / IP67
Impact Protection	IK08
Temperature range	-30 °C to +50 °C

Electrical characteristics

Power supply	EP – electronic - 220-240 V AC, 50/60 Hz / 220 – 240 V DC
Lamp source	LED 5000 K, CRI +80 Lifetime: > 110.000 hours L90B50 Ta@ 25 °C > 63.000 hours L80B50 Ta@ 50/60 °C
Connection	Polyamid cable gland M20 x 1.5mm (6-12 mm diameter)
Terminals	Screwless terminal block, max. wire cross-section 4 mm^2 (standard)
Emergency unit	emergency unit composed of inverter charger and Ni-Cd battery pack, autonomy 180 min

Mechanical characteristics

Body	Plastic material PC (polycarbonate), colour grey RAL 7035
Gasket	Silicon
Cover	PC (polycarbonate) opal
Fastening	Direct fixing to the ceiling or wall of the illuminated space by means of two self-locking clips (standard equipment), self-locking cable suspension on two clips, cable suspension by means of suspension lugs.
Protective cage	Painted iron

Available on request

- 3000 K / 4000 K / 6500 K - color temperature
- For acessoris see reference details

Marking

Particularly important points in these instructions are marked with a symbol:

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE is used to address practices not related to personal injury.

NOTE Important instructions and information on effective, economical and environmentally compatible handling.

Standards conformed to

Please See Attestations of Conformity.

Assembly, installation and commissioning

WARNING

Risk of serious injury due to incorrect procedures.

- Work on assembly, disassembly, installation and commissioning may only be carried out by authorised specialist personnel.
- Suitable tools shall be used.

Assembly/Disassembly

Prior to the assembly/disassembly, it must be ensured that the Escape Ex1 lighting fixture is in good condition (no cracks or damage).

Installation

WARNING

- Potential danger of electrostatic charging.
- The luminaire must be installed in a position that prevents contact between people and parts of the fixture.
- The luminaire is intended for fixed installation.
- The luminaire should only be cleaned with a damp duster. It is necessary to maintain periodic cleaning intervals for the lighting fixture.
- Do not open while under voltage.
- Replace broken protective cover.
- The battery inside the luminaire may only be replaced with a battery of the same type and specifications!!

SPECIFIC CONDITIONS OF USE:

1. Ambient temperature range: see Annex to the IECEx certificate.
2. The luminaire is intended for fixed installation and must be labelled “Warning - potential danger of electrostatic charging” - see Technical conditions.
3. The power supply cable shall be effectively fixed to prevent pulling or twisting.
4. Shall be used only Ex equipment cable glands and Ex equipment blanking elements with Ex protection Ex eb and Ex tb with IP 66 and with Service temperature range -30 °C to +60 °C.
5. The Technical conditions for mounting and maintainance must be complied.
6. The battery pack must not be replaced in hazardous areas (unless the area is shown to be free from a hazardous atmosphere).
7. The luminaire shall be installed to avoid a risk from propagating brush discharges for application in explosive dust.

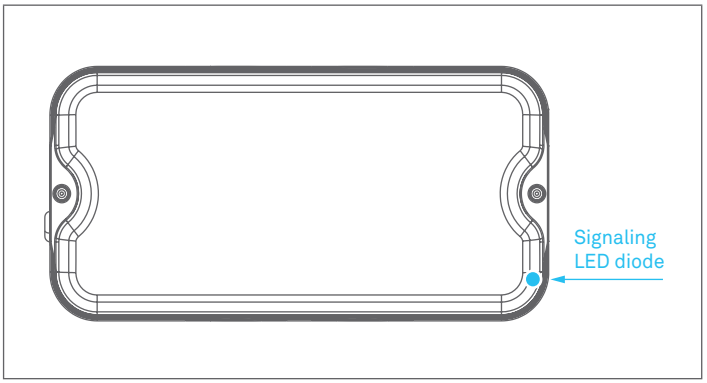
The luminaire can only be installed by an authorized person. When installing the luminaire, observe ESD safety using appropriate tools. After the light source is changed, it is necessary to also change the gasket in the luminaire.
After the driver is changed, it is necessary to also change the gasket in the driver’s part. During commissioning, it is not necessary to perform the routine test of the luminaire.
The replacement of the light source, gasket, and other repairs of this luminaire can only be done by the manufacturer, its contractual service technician, or a similarly qualified person authorized by the manufacturer, and only with original spare parts. If the mounting instructions are not followed, the manufacturer cannot be held responsible for any incidental damages incurred.

Functionality Test of the Emergency Lighting System

To ensure proper operation of the luminaire, the enclosed emergency lighting test record must be followed. Disconnect the luminaire from the mains. The LED module in the emergency circuit must light up. The LED indicator will turn off. If the emergency light goes out before the rated autonomy period has elapsed, even though the battery is fully charged, the battery must be replaced.

NOTE

The battery reaches full capacity after approximately three charge/discharge cycles.

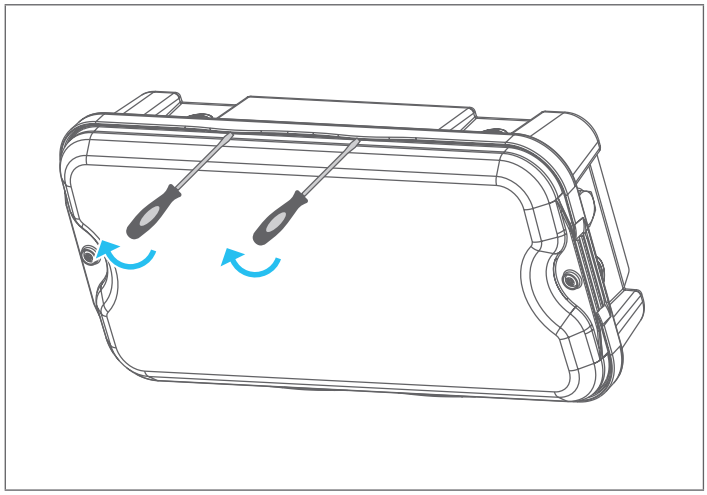


Battery replacement

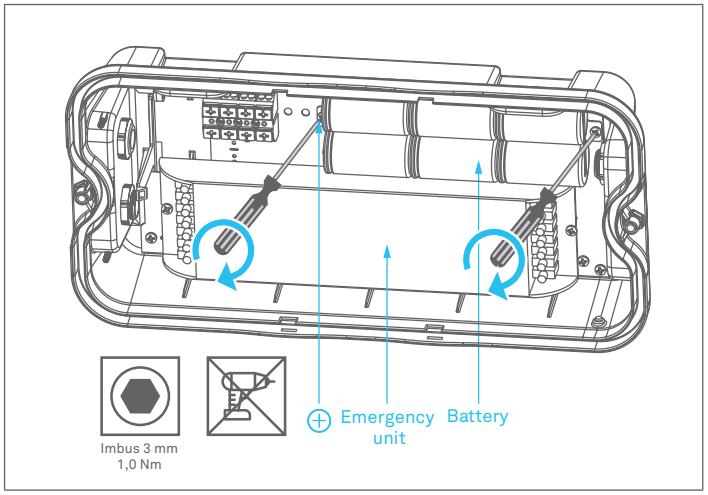
Battery replacement is necessary once the luminaire no longer meets the requirements of its rated operating duration. Replace the battery in a non-explosion-hazardous environment.

1. Disconnect the luminaire from the power supply.
2. Loosen the M5 locking screws on the optical cover.
3. Remove the cover using a flathead screwdriver.
4. Release the reflector hook and tilt it.
5. Disconnect and remove the old battery using a Phillips screwdriver to unscrew the two screws holding the battery.
6. Mount the new battery (mark installation date).
7. Connect the battery to the emergency unit.
8. Return the reflector to its final position until secured.
9. Reattach the luminaire cover and secure it with M5 screws using a tightening torque of 1.0 Nm. Snap the latches into the correct position.
10. Reconnect to power and verify emergency operation.
11. Confirm that battery charging is indicated properly.

Remove the cover using a flathead screwdriver:



Battery disconnection and removal using a Phillips screwdriver:

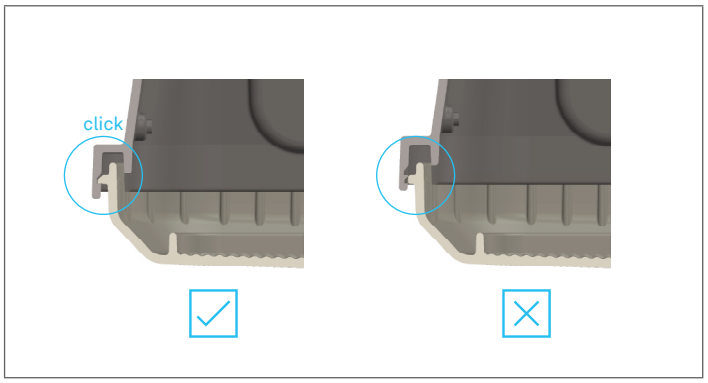


NOTE

The connection of the device must be carried out in accordance to IEC/EN 60079-14 and with the information in the applicable operating instructions for the built-in devices. The applicable operating instructions can be downloaded from www.bartec.com or ordered directly from BARTEC GmbH.

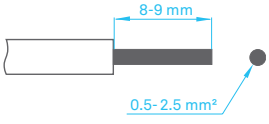
Connection of luminaire

Latches in the correct position



Connection of luminaire

Clamp	Type of luminaire						Stripping the wire
	N0	ND	EA	ED	A0	D0	
L1	phase wire	phase wire	phase wire	phase wire	-	-	
L2	-	-	charging phase wire	charging phase wire	charging phase wire	charging phase wire	
DA+	-	DALI +	-	DALI +	-	DALI +	
DA-	-	DALI -	-	DALI -	-	DALI -	
N	neutral wire	neutral wire	neutral wire	neutral wire	neutral wire	neutral wire	
T	protective wire	protective wire	protective wire	protective wire	protective wire	protective wire	



Legend for type of luminaire

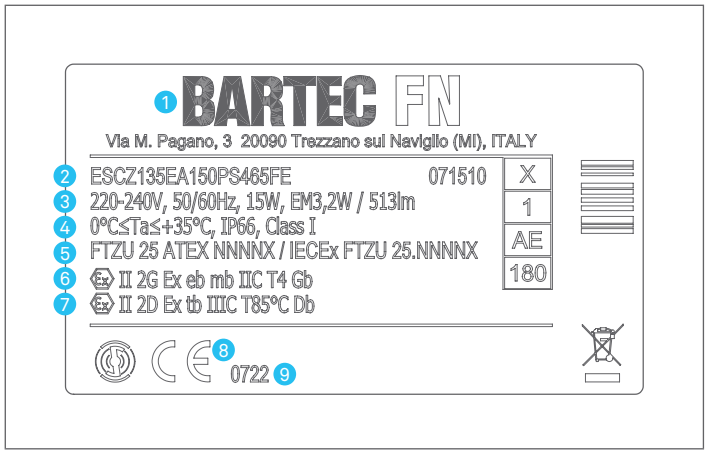
N0	normal version
ND	normal version with DALI2 driver
EA	maintained emergency version with 3h autonomy and battery autotest function
ED	maintained emergency version with 3h autonomy, DALI inverter and DALI2 driver
A0	non-maintained emergency version with 3h autonomy and battery autotest function
D0	non-maintained emergency version with 3h autonomy and DALI inverter

Maximum allowed number of lighting fixture for circuit breaker

Maximal short circuit current must not be higher than 10kA

Typ of lighting fixture	Order number	B10 A	B16 A	C10 A	C16 A
Escape Ex1	ESCZ1**********FE	15	24	25	40

Positions and information relative to the labels



1	Brand, name and address of the manufacturer
2	Equipment type designation given by manufacturer
3	Nominal electrical characteristic
4	Ambient temperature range
5	Identification of Notified Body that have issued the certificate and its relative number
6	Distinctive community mark specific of explosion protection
7	ATEX / IECEx marking
8	Graphic symbol of conformity CE marking
9	Identifying number of Notified Body responsible of production surveillance on “ATEX” equipment

The luminaire is equipped by 2m cable (3x1.5 mm²/ 5x1.5 mm²). The cable is ended by sleeves.

The marking of individual terminals and connections may differ, depending on the required equipment of the luminaire. In case of confusion contact the technical support of BARTEC.

Commissioning

The following points must be observed before installation work may be commenced:

– The device is installed correctly
– The device is not damaged.

NOTE
The spare parts, attachments or switching and lighting modules are listed in the data sheet.

Operation

DANGER
Death or risk of injury due to improper use.
- The Escape Ex1 lighting fixture may only be operated within the applicable technical limits.

Transport and storage

NOTICE
Damage to the Escape Ex1 lighting fixture due to incorrect transport or incorrect storage.
- Transport and storage is permissible in original packaging only.

Maintenance and Troubleshooting

WARNING
Risk of serious injury due to incorrect procedure.
- Any maintenance and troubleshooting work may only be carried out by authorised specialist personnel.
- IEC/EN 60079-17 must be observed.

Maintenance

The operator of the Escape Ex1 lighting fixture must keep it in good condition, operate it properly, monitor it, clean it and check it regularly for any cracks and/or damage.

Fault Clearance

The Escape Ex1 lighting fixture is defective if it is cracked and/or damaged. Damaged or defective control and display devices cannot be repaired. They must be replaced in accordance with this user manual.

Accessories, Spare Parts

Please see the BARTEC catalogue.

Disposal

The components of the Escape Ex1 lighting fixture contain metal, glass and plastic parts. Therefore, the legal requirements for the disposal of electronic waste must be observed (e.g. disposal by an approved disposal company).

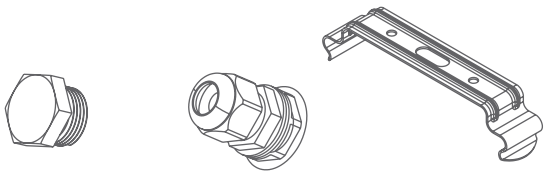
Service Address

ESS BU
BARTEC F.N.
Srl via Mario Pagano 3
20090 Trezzano sul Naviglio (Mi)
Italy

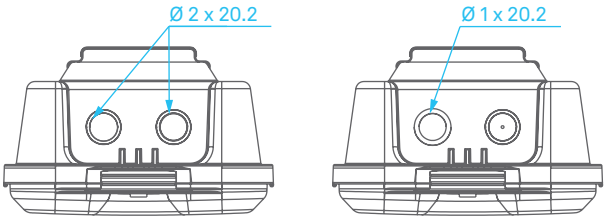
Phone: +39 02 48471
info.bartecfn@bartec.com
www.bartec.com

Reference details

Standard equipment →

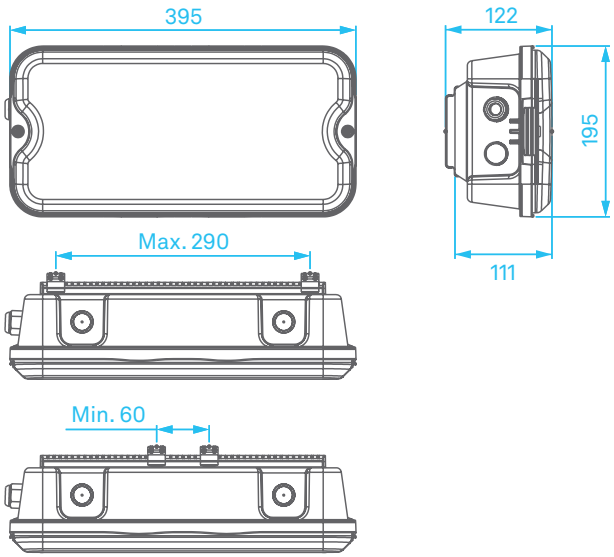


2x cable plug M20 | 2x cable gland M20 | 2x mounting clip



The luminaire is normally equipped with 3x openings with a diameter of 20.2 mm. The wall thickness of the luminaire is 2.5 mm.

Dimensions in mm →



Pictograms →

Emergency version includes all
5 pictograms in package by standard

ESCACP100

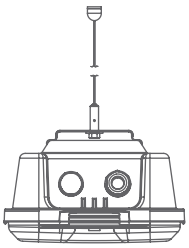
ESCACP200

ESCACP300

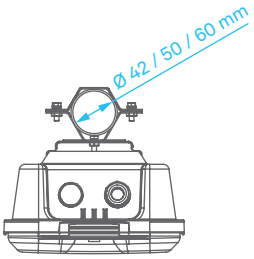
ESCACP400

ESCACP500

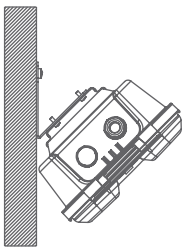
Available on request →



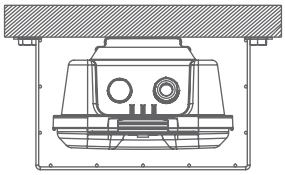
Suspensions bracket
ESCACM100



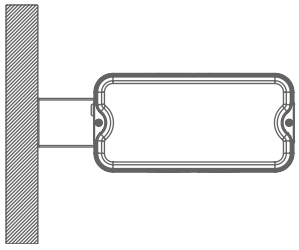
Mounting procedure
using a tube bracket
ESCACM242 - 42 mm
ESCACM250 - 50 mm
ESCACM260 - 60 mm



Wall bracket - angle 45°
ESCACM300



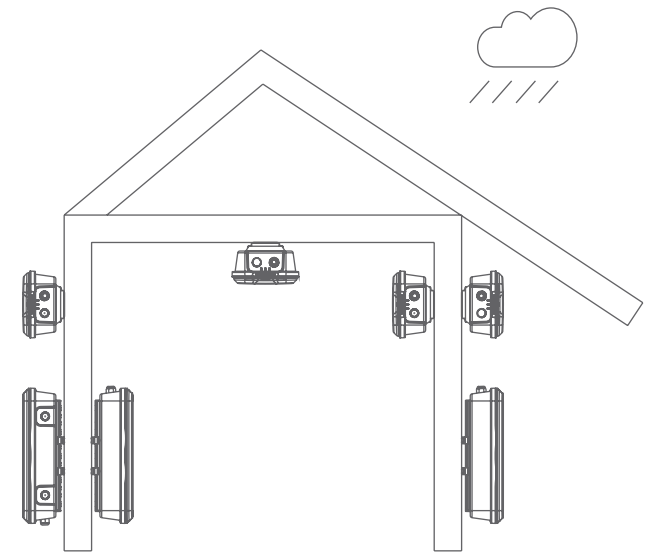
Protective cage
ESCACM500



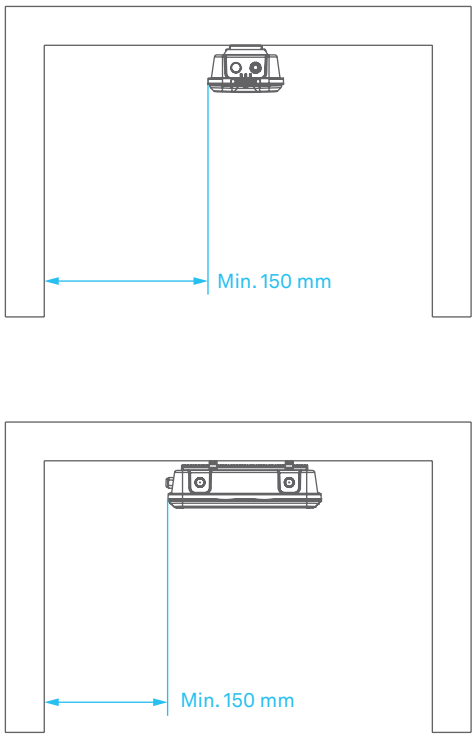
Wall bracket
ESCACM400

Conditions of outdoor assembly

The light fixture can be installed in both covered and uncovered outdoor areas →

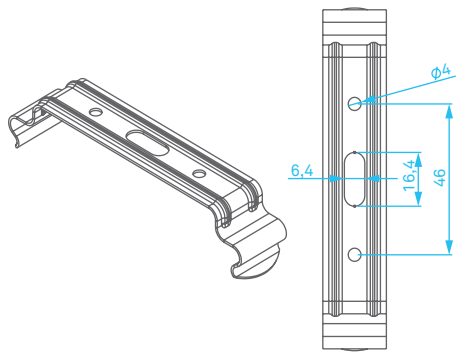


Minimum distance of the light fixture from the wall →

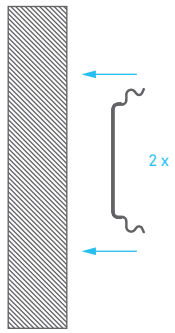


Mounting procedure using fastening brackets directly onto the supporting surface

1 →



2 →



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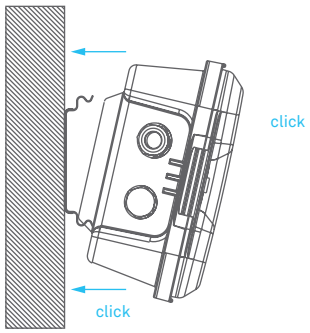

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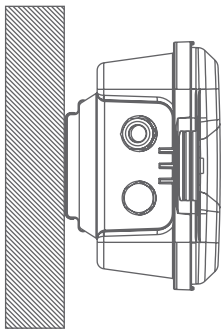
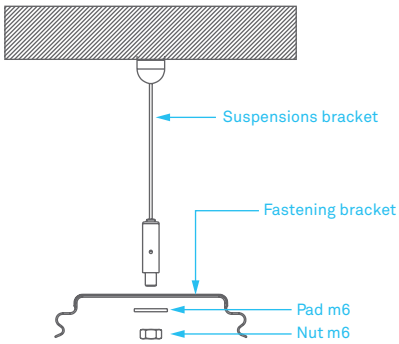


Mounting with suspensions bracket

1 →



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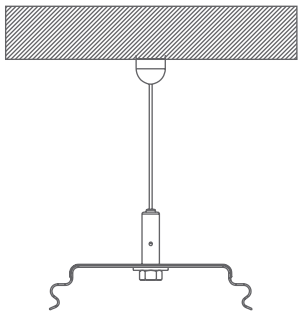

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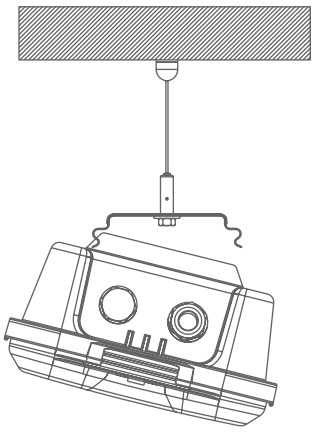

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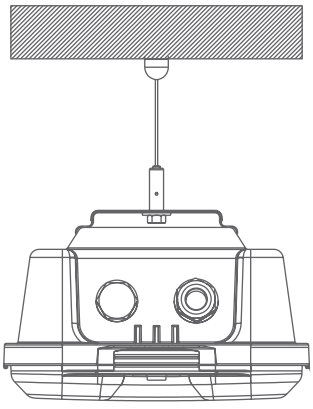
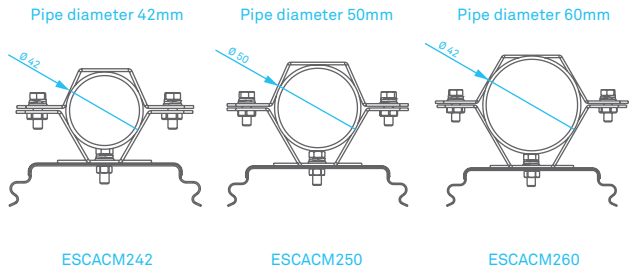


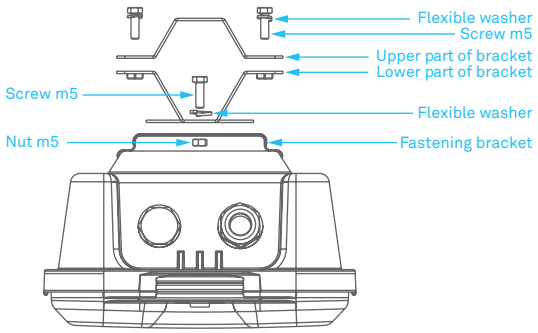
Mounting procedure using a tube bracket

1 →



ESCACM242 ESCACM250 ESCACM260

2 →



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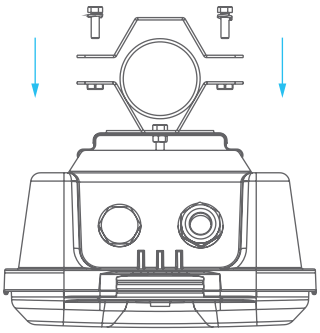

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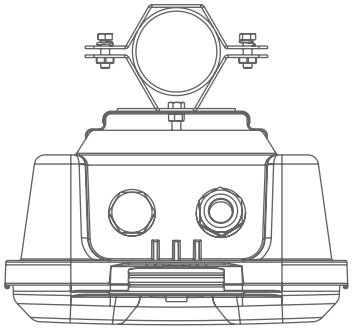
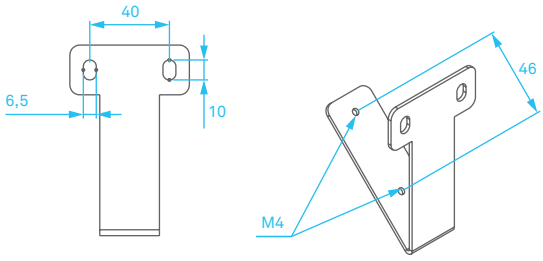


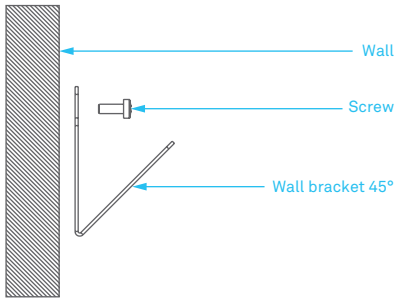
Mounting procedure using a 45° wall bracket

1 →

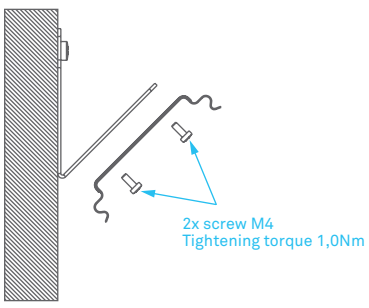


ESCACM300: Set of wall bracket - angle 45° KERN (2 pcs)

2 →



3 →



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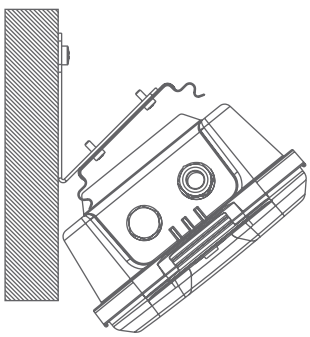
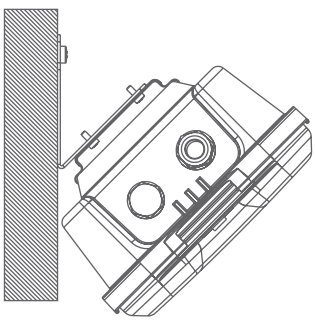
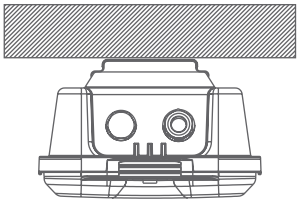


5 →

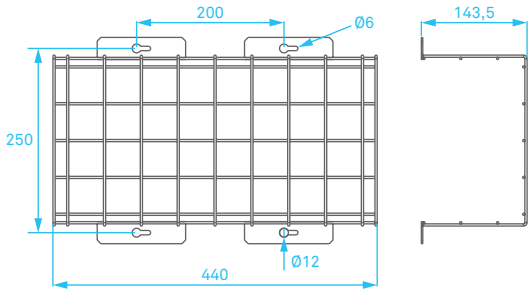


Mounting procedure with protective cage

1 →

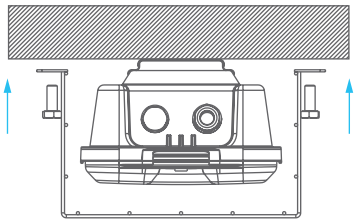


2 →

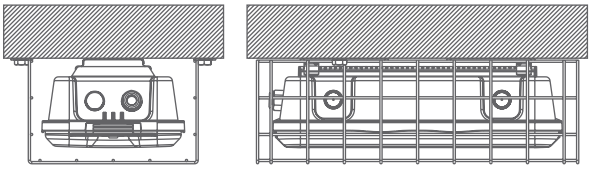


ESCACM500: Protective cage

3 →



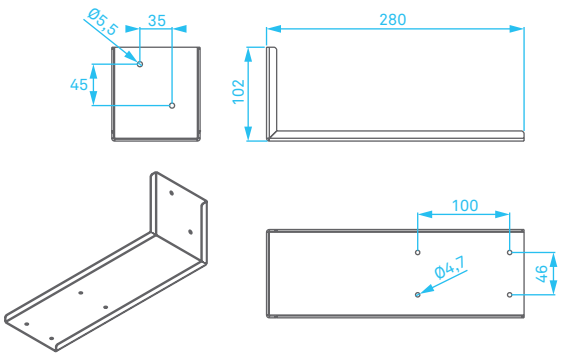
4 →



⚠ When installing the protective cage, cable glands must not be mounted on the side of the luminaire. Always install the glands at the front of the luminaire.

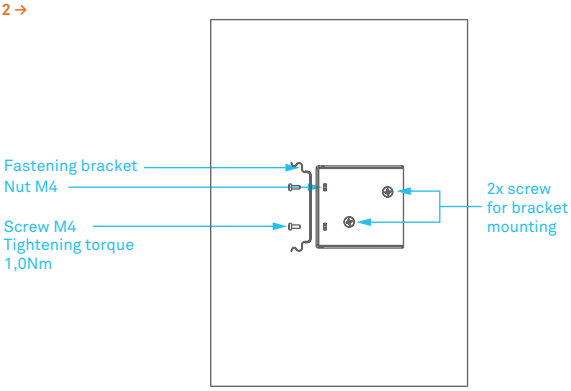
Mounting procedure with wall bracket

1 →

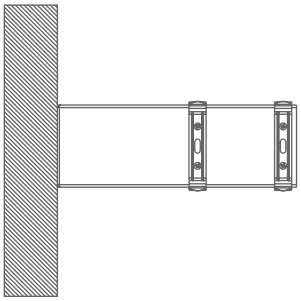


ESCACM400: Wall bracket

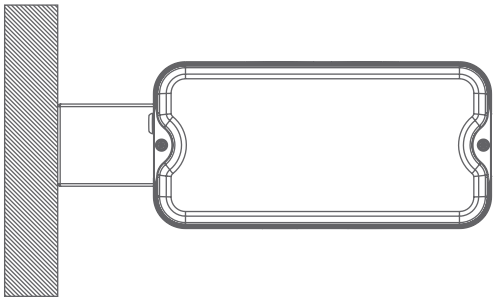
2 →



3 →

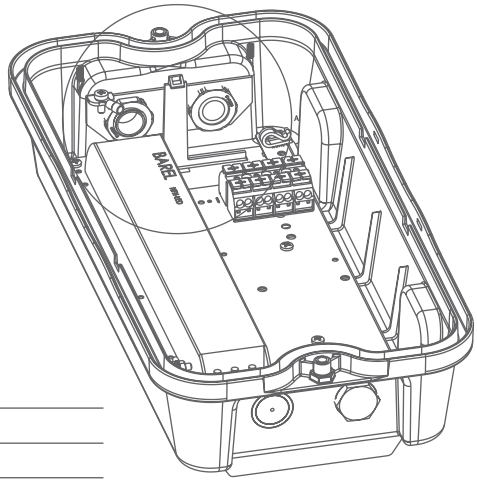


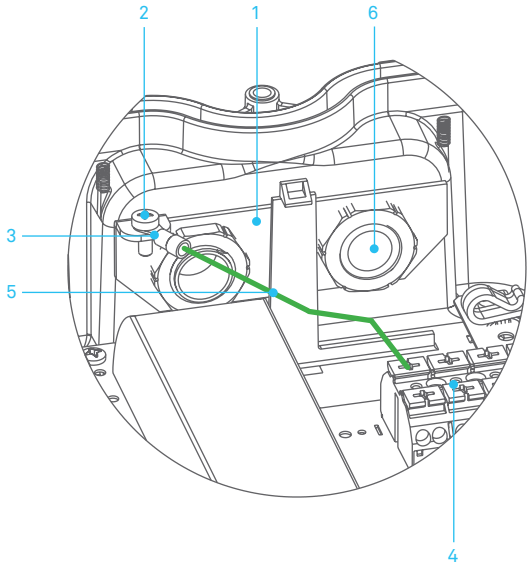
4 →



Grounding of metal cable glands with armored cable

020409 – KERN equipment – glands for armored cable →

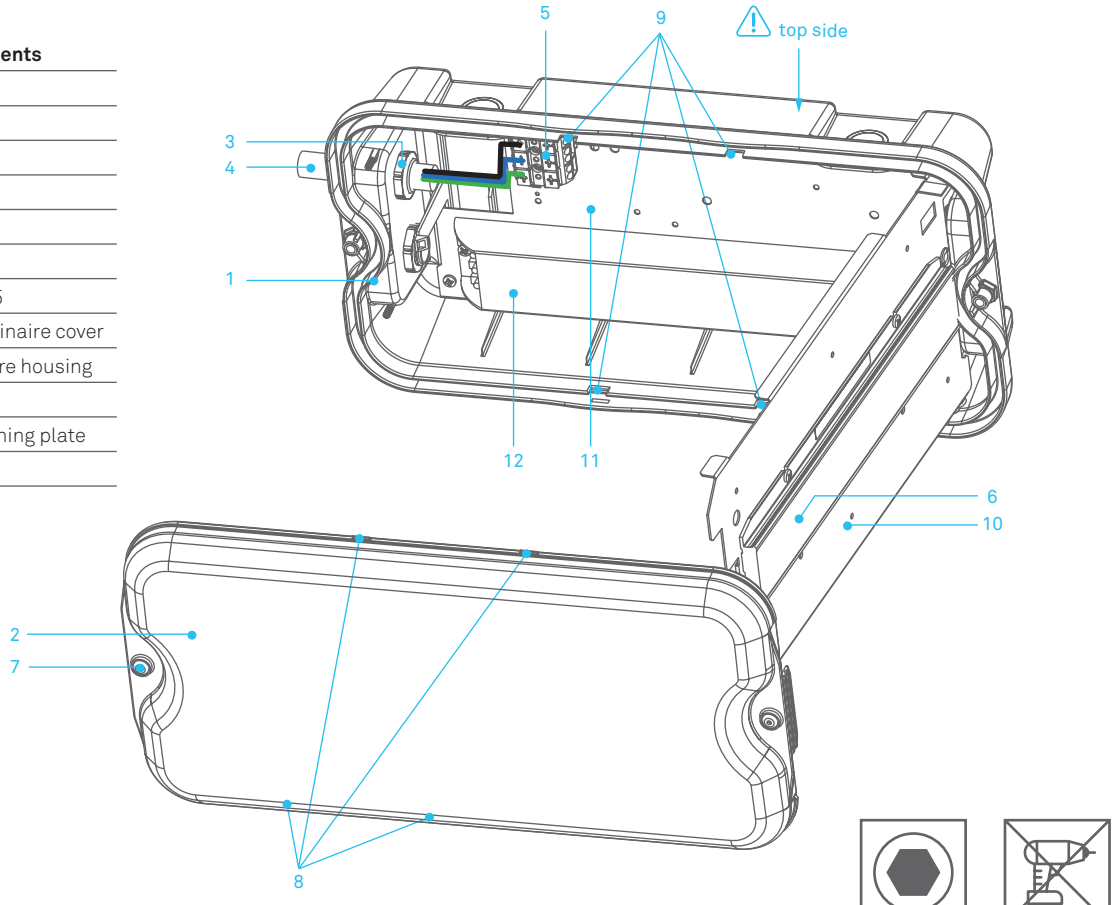


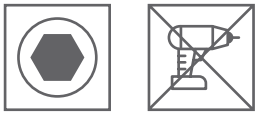


1	Grounding washer
2	M4 screw
3	Cable eye
4	Ex terminal block
5	Protective wire
6	Metal cable gland

Luminaire construction →

	Luminaire components
1	Luminaire housing
2	Luminaire cover
3	Ex cable gland
4	Supply cable
5	Ex terminal block
6	Ex LED module
7	Stainless screw M5
8	Latches on the luminaire cover
9	Lock on the luminare housing
10	Metal reflector
11	Component mounthing plate
12	Ex LED driver





Imbus 3 mm
1,0 Nm

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