

# KERN-EX1/21

## Technical conditions for mounting luminaire ENG

26.06.2025/ rev.0  
www.vyrtych.cz

### KERN-EX1/21

#### FTZÚ 25 ATEX 0017X

Ex II 2G Ex eb mb IIC T4 Gb

Ex II 2D Ex tb IIIC T85°C Db

#### IECEX FTZÚ 25.0012X

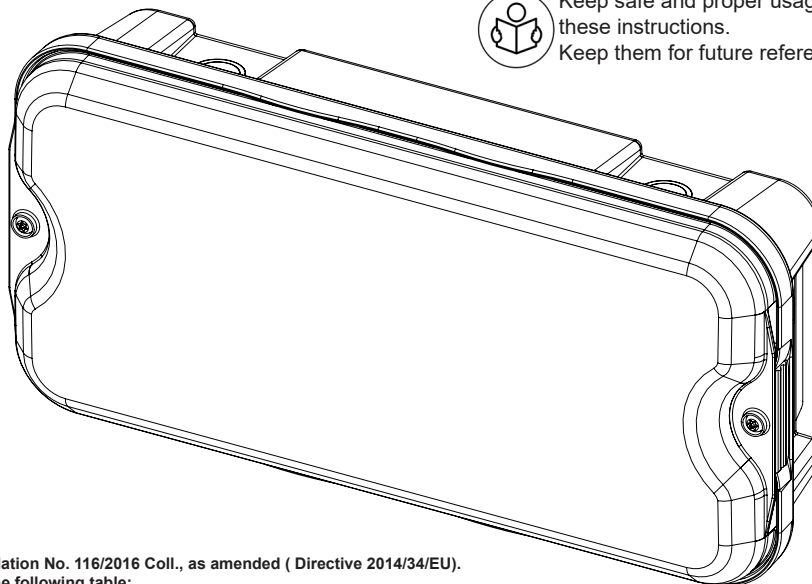
Ex eb mb IIC T4 Gb

Ex tb IIIC T85°C Db

IP66/67, insulation class I



Keep safe and proper usage by following these instructions.  
Keep them for future reference.



These luminaires comply with the requirements of Government Regulation No. 116/2016 Coll., as amended ( Directive 2014/34/EU).  
They are intended for use in explosive atmospheres as specified in the following table:

Hazardous area	Designation of external influences	Classification of areas	
		Designation	Establishing regulation
Danger of explosion of inflammable dusts	BE3N1	ZONE 21, ZONE 22	ČSN EN 60079-14 / EN 60079-14 ČSN EN 60079-10-2/ EN 60079-10-2
Danger of explosion of inflammable gases and vapours	BE3N2	ZONE 1, ZONE 2	ČSN EN 60079-14/ EN 60079-14 ČSN EN IEC 60079-10-1/ EN IEC 60079-10-1

#### Permissible operating temperature range:

Type	Ta	W	IP	Temperature class	Maximum surface temperature
KERN-EX1/21-α-L04-YYY-1900-0ND-06-PD	-30°C - +50°C	20	66/67	T4	85°C
KERN-EX1/21-α-L04-YYY-1900-0D2-06-PD	-30°C - +50°C	20	66/67		
KERN-EX1/21-α-L04-YYY-1900-NM3A-06-PD	0°C - +35°C	20	66/67		
KERN-EX1/21-α-L04-YYY-1900-NA3D2-06-PD	0°C - +35°C	20	66/67		
KERN-EX1/21-α-L04-YYY-1900-ND3D2-06-PD	0°C - +35°C	20	66/67		
KERN-EX1/21-α-L04-YYY-400-NNM3A-06-PD	0°C - +45°C	5	66/67		
KERN-EX1/21-α-L04-YYY-400-NNMD3-06-PD	0°C - +45°C	5	66/67		

KERN-EX1/21-J-L04-YYY-δδδ00-εεεε-06-PD - IP66 - according to the standards ČSN EN 60079-0  
IP67 - according to the standards ČSN EN 60529

KERN-EX1/21-K-L04-YYY-δδδ00-εεεε-06-PD - IP66,67 - according to the standards ČSN EN 60529

#### Rated voltage and frequency:

for LED drivers BAREL HFX BG2: 220-240V, 50/60Hz, 220-240V DC

for LED drivers BAREL HFXE BG2: 220-240V, 50/60Hz

#### Luminaire marking:

**VYRTYCH**  
Židněves 116, 294 06 Březno, Czech Republic

① KERN-EX1/21-α-L04-YYY-δδδ00-εεεε-ζζ-PD  
② 220-240V, 50/60Hz, 220-240V DC, class I, 16W  
③ -30°C ≤ ta ≤ +50°C, IP66/67  
④ FTZÚ 25 ATEX 0017X/ IECEX FTZU 25.0012X  
⑤ Ex II 2G Ex eb mb IIC Tx Gb/ Ex eb mb IIC Tx Gb  
⑥ Ex II 2D Ex tb IIIC Txx°C Db/ Ex tb IIIC Txx°C Db  
⑦ art.n.: 61 379    ⑧ Product Type: V011304019-84AA0PD660000S

123456

⑩

#### Luminaire marking:

##### 1. Name of the luminaire

KERN - name of the luminaire  
EX1/21 - luminaire certified for zone 1/21  
α - type of luminaire closure = J - closure eb/Silicon, K - closure eb/EPDM  
L04 - luminaire length 395mm  
YYY - CRI/ CCT  
δδδ00 - designation of the luminous flux of the LED source  
εεεε - connection type  
ζζ - internal marking  
PD - polycarbonate opal cover

##### 2. Designation of the operating voltage, frequency, insulation class of the luminaire power

##### 3. Designation of the allowable ambient temperature range, and luminaire IP protection rating

##### 4. Certificate designation

- FTZÚ - abbreviation of the certification authority that issued the certificate  
- 25 - year of issuance of the certificate  
- ATEX / IECEX - abbreviation of certificate type  
- 0017X / 25.0012X - certificate number

##### 5. Luminaire protection marking against the risk of explosion from flammable gases and vapors

##### 6. Luminaire protection marking against the risk of dust explosion

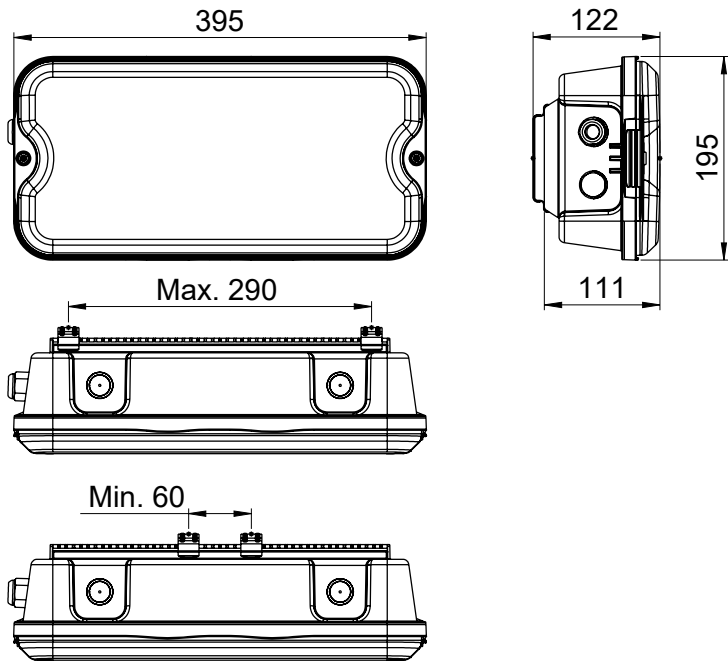
##### 7. Item number

##### 8. Luminaire product number

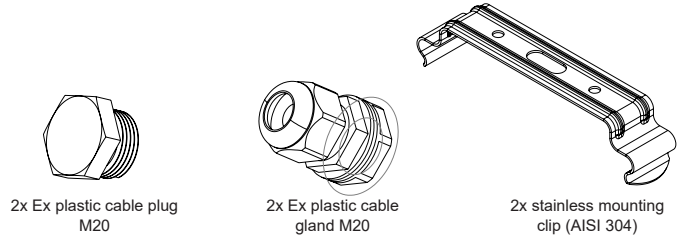
##### 9. Notified body number

##### 10. Lin code

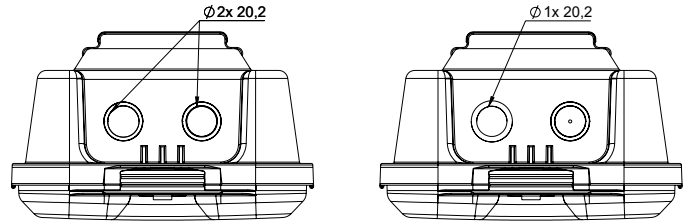
**Luminaire dimensions:**



**Standard equipment:**



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. When using your own cable glands, they must comply with the required type of seal, IP protection rating, temperature range (the same as for the glands we supply), and other technical parameters. Always carry out the installation according to the installation instructions provided by the gland manufacturer. In case of any doubts, please contact technical support at: [podpora@vyrtych.cz](mailto:podpora@vyrtych.cz)



Additional holes may only be drilled in locations specified by the manufacturer. Always use a step drill to ensure the correct hole diameter. Carefully deburr the edges of the hole until smooth. If any other part of the luminaire is damaged, do not continue using it.

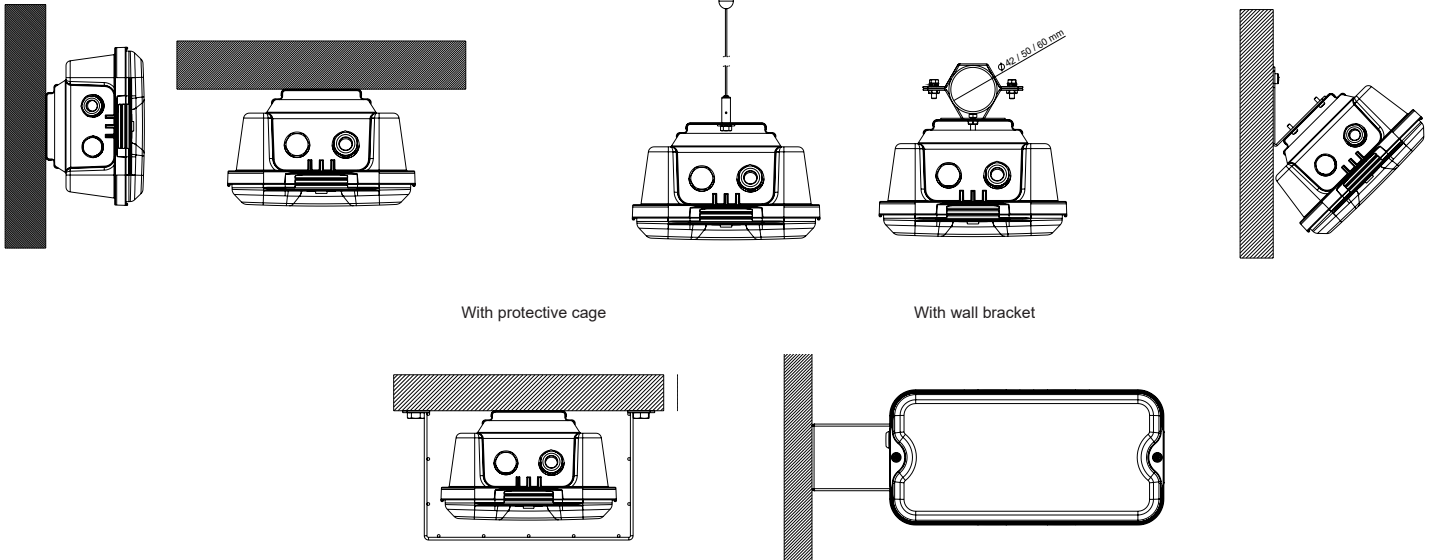
**Types of mounting:**

Mounting procedure using fastening brackets directly onto the supporting surface

With suspensions bracket

Mounting procedure using a tube bracket

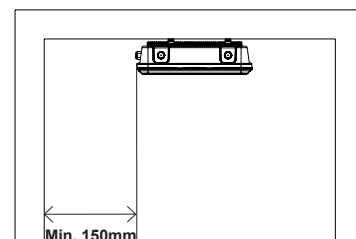
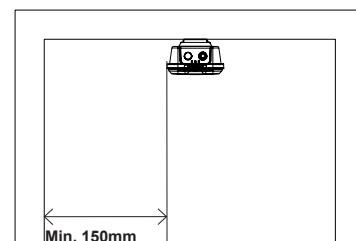
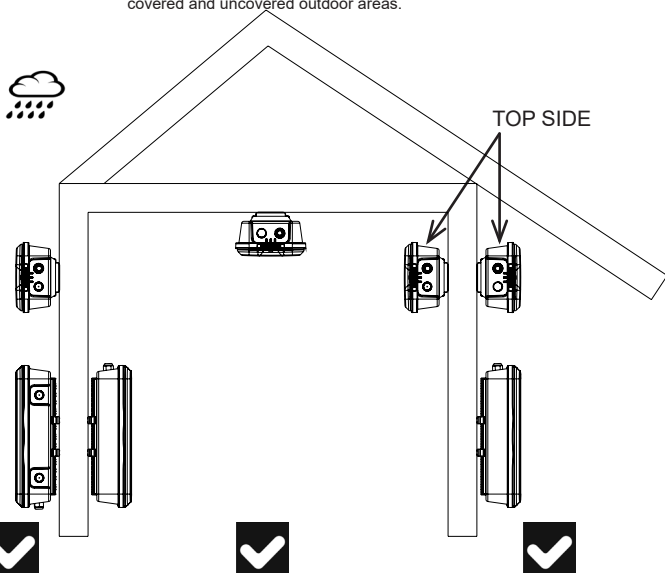
With wall bracket - angle 45°



Picture. 5  
Conditions of outdoor assembly

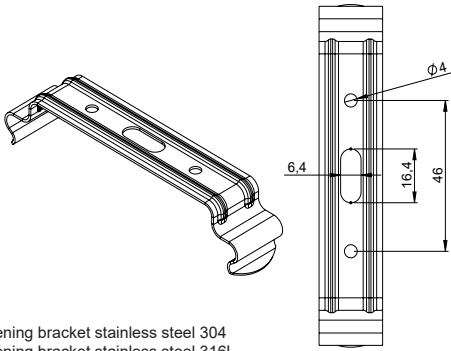
The light fixture can be installed in both covered and uncovered outdoor areas.

Minimum distance of the light fixture from the wall



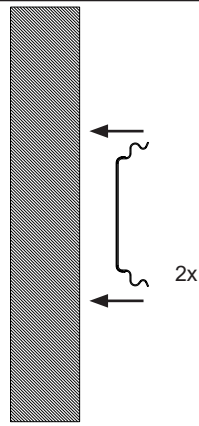
**Mounting procedure using fastening brackets directly onto the supporting surface:**

1

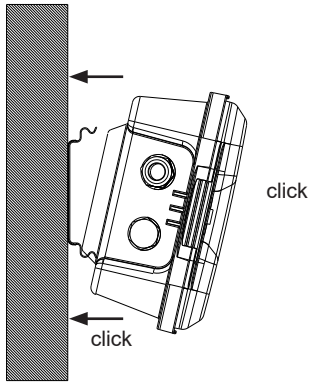


60173 - Fastening bracket stainless steel 304  
60174 - Fastening bracket stainless steel 316L

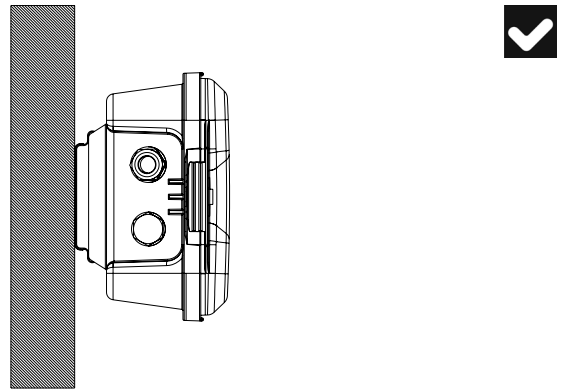
2



3

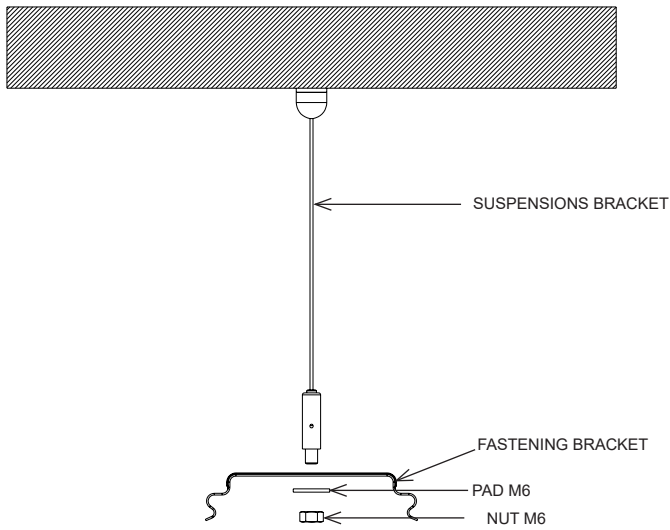


4



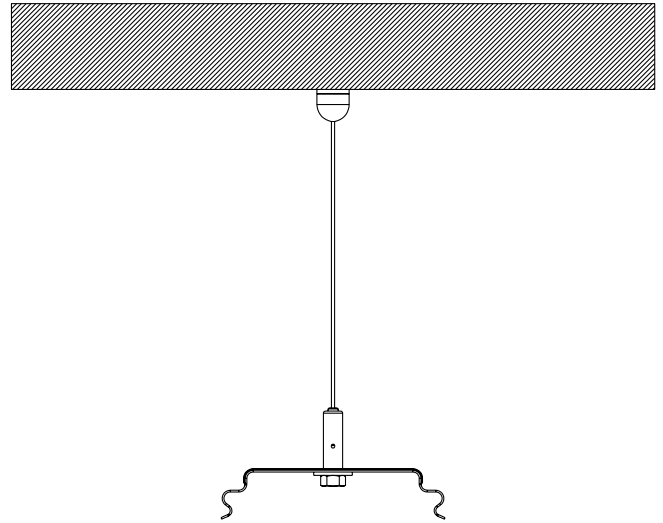
**Mounting with suspensions bracket:**

1

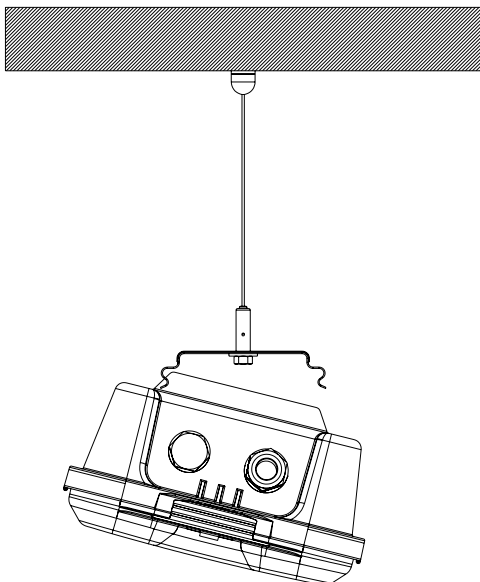


3575 - Suspensions bracket

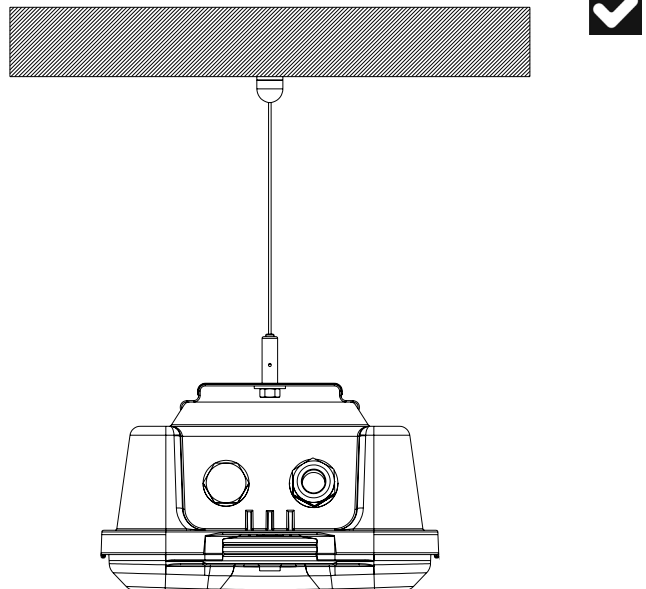
2



3



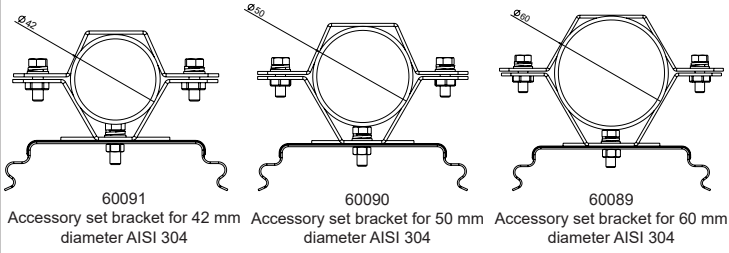
4



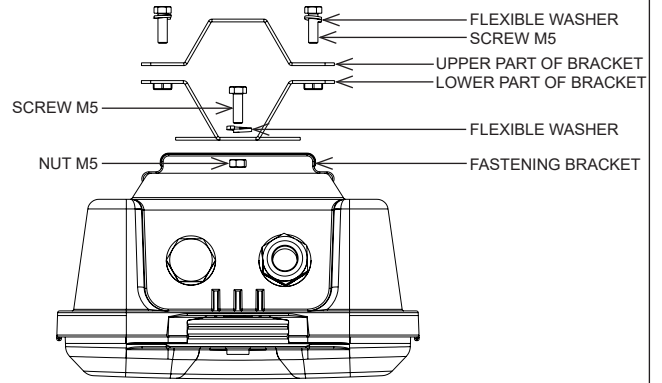
**Mounting procedure using a tube bracket:**

1

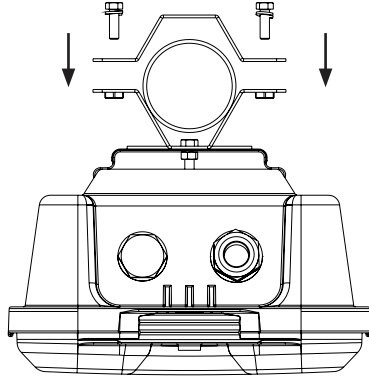
Pipe diameter 42 mm (1 1/4")    Pipe diameter 50 mm (1 1/2")    Pipe diameter 60 mm (2")



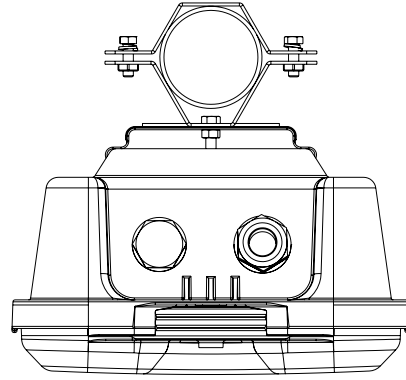
2



3

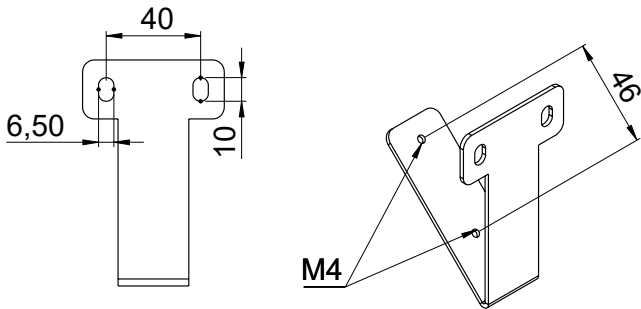


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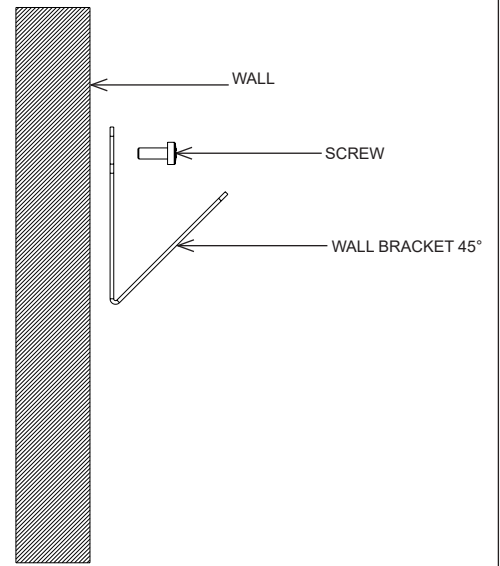


**Mounting procedure using a 45° wall bracket:**

1

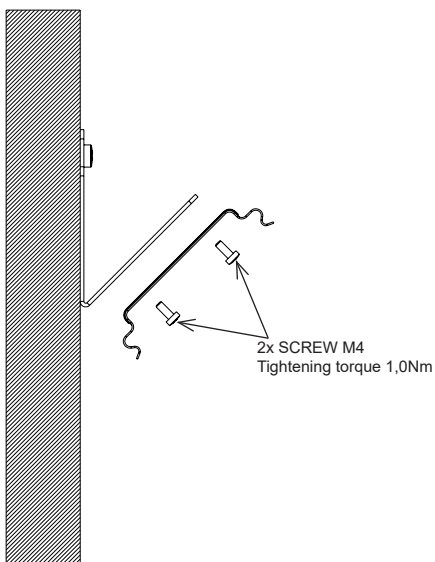


2

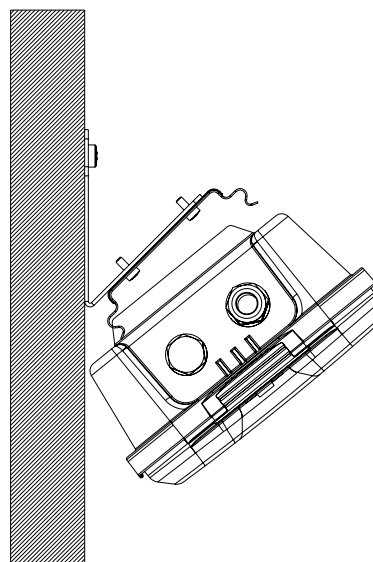


63139 - Set of wall bracket - angle 45° KERN (2 ks)

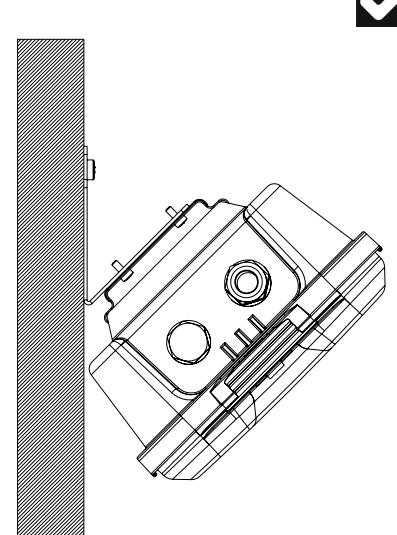
3



4

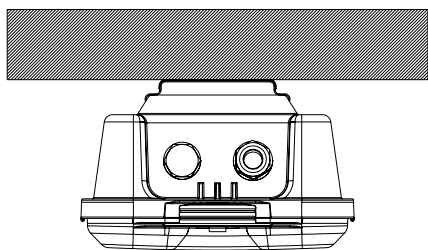


5

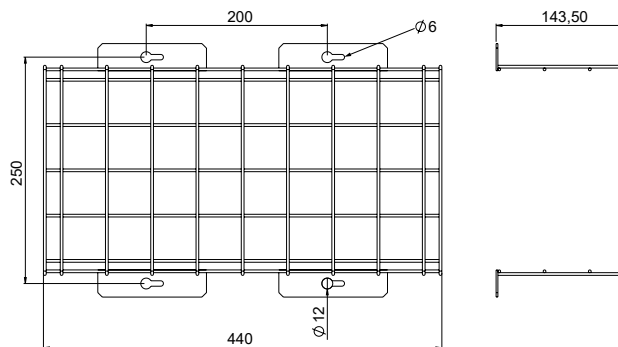


**Mounting procedure with protective cage:**

1

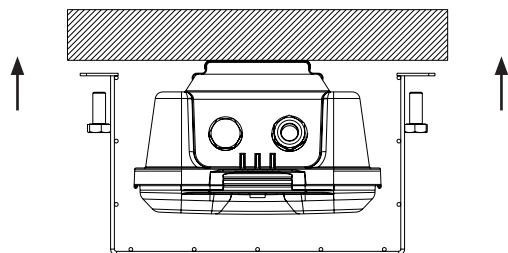


2

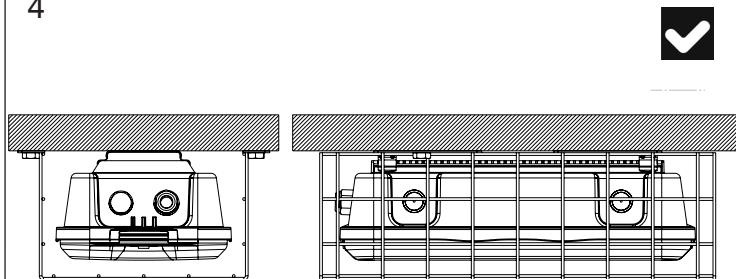


62858 - PROTECTIVE CAGE

3



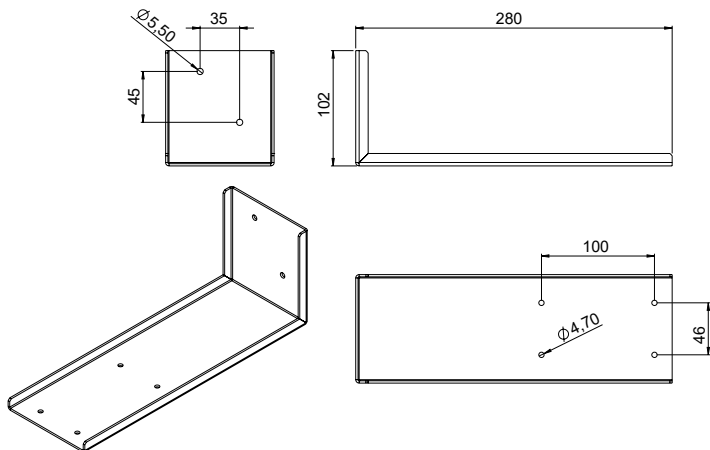
4



**⚠** 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.

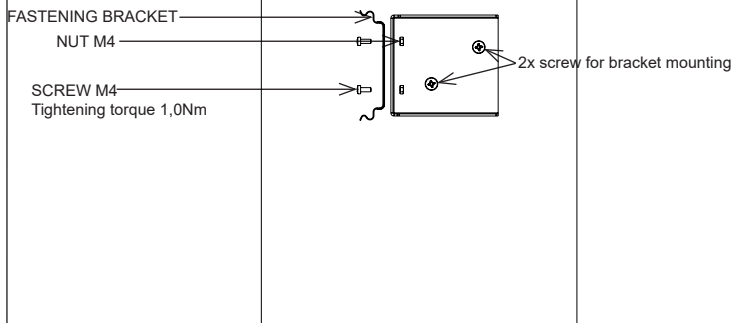
**Mounting procedure with wall bracket:**

1

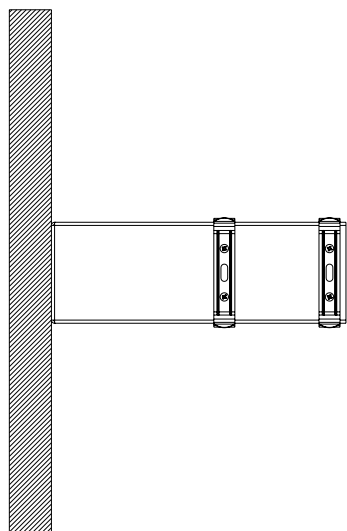


6902 - Wall bracket

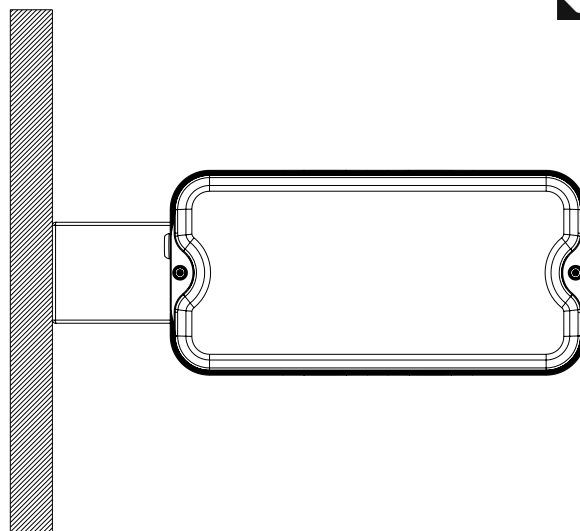
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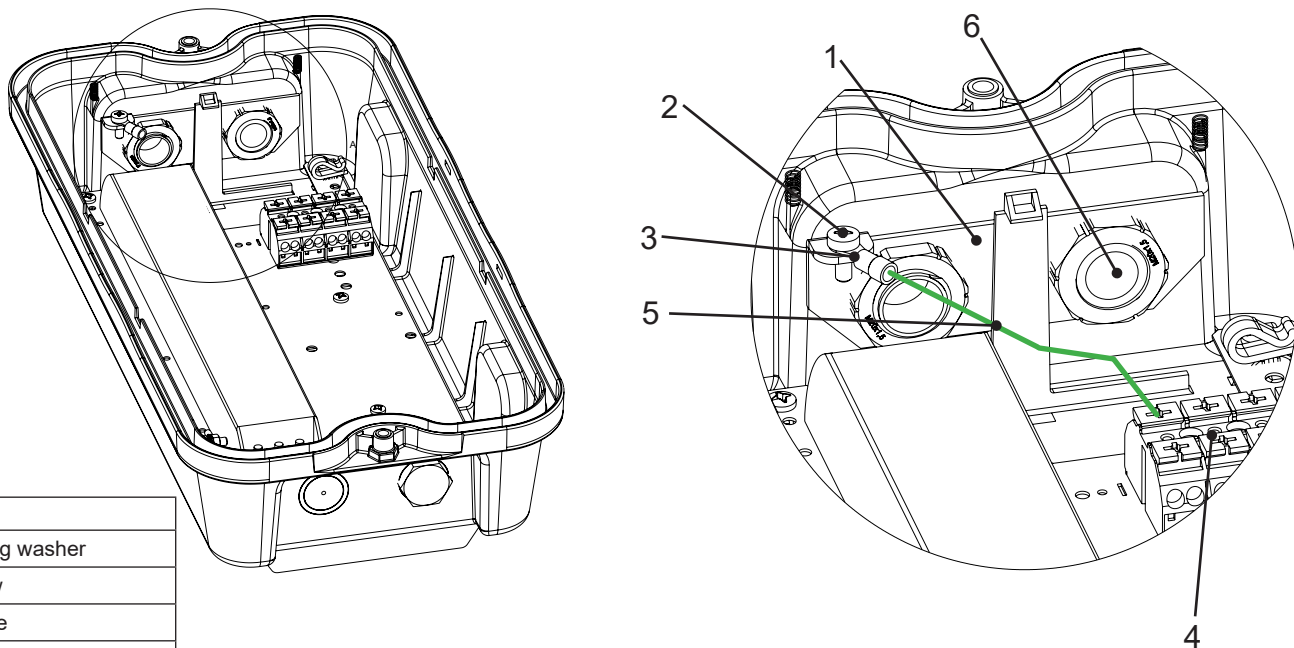


3



4

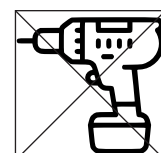
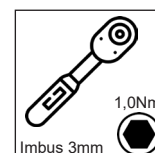
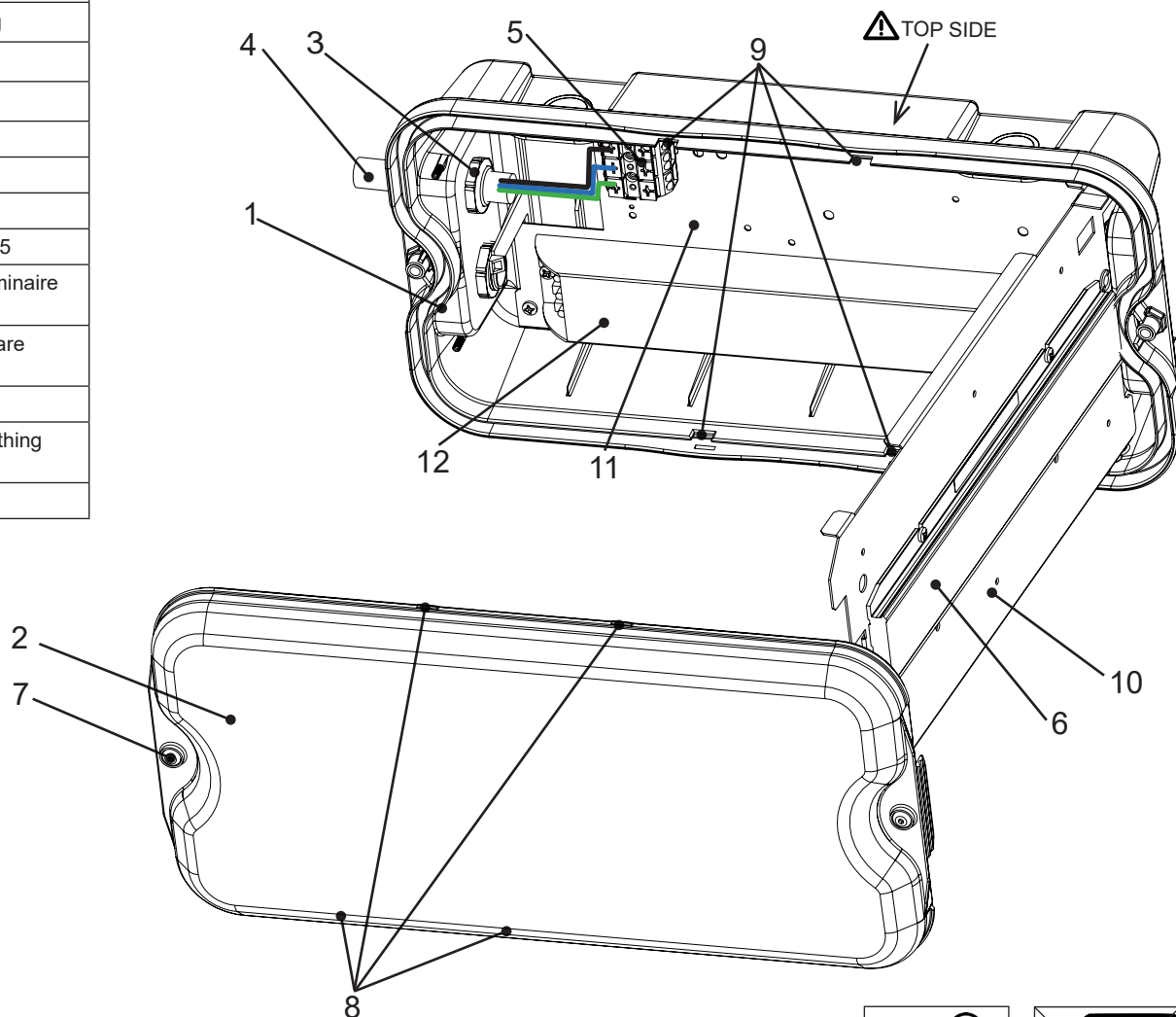




1	Grounding washer
2	M4 screw
3	Cable eye
4	Ex terminal block
5	Protective wire
6	Metal cable gland

**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 luminaire housing
10	Metal reflector
11	Component mounting plate
12	Ex LED driver



**Installation instructions:**

1. Remove the plastic cover from the luminaire.
2. Release the plastic hook (1) securing the metal reflector (2), then carefully tilt the reflector open. Do not touch the LED module. Support the reflector with one hand to avoid damage.
3. Install the cable gland and cable plug on the luminaire. Tighten to the luminaire with a torque of 2.7 Nm. Each cable gland must be secured with two nuts.
4. Feed the supply cable (3) through the cable gland (4). Tighten the gland until the rubber gasket is slightly deformed. Torque: 2.0 Nm.

Cable gland	Sealing area	Tightening torque of the cable gland	Minimum operating temperature of the cable gland
M20x1,5	7 - 13 mm	2,0 Nm	-30°C+60°C

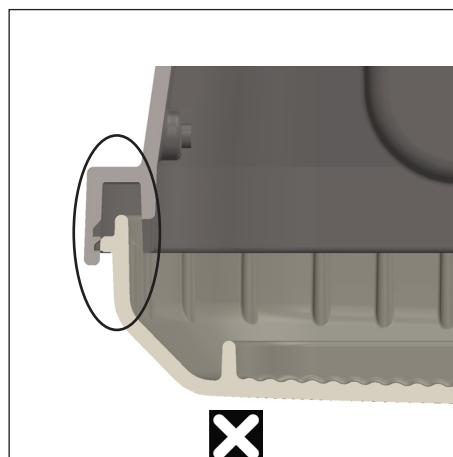
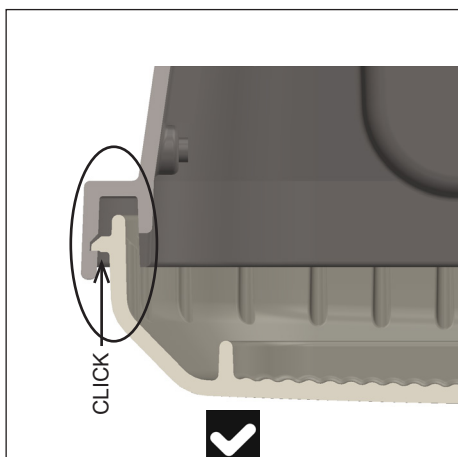
5. Plug the power cord into the free part of the supply terminal block (5) as follows:

CLAMP	TYPE OF LUMINAIRE								STRIPPING THE WIRE
	0ND	0D2	NM3A	NA3D2	ND3D2	NMM3A	NNMD3		
L1	phase wire	phase wire	phase wire	phase wire	phase wire	-	-		
L2	-	-	charging phase wire	charging phase wire	charging phase wire	charging phase wire	charging phase wire		
DA+	-	DALI +	-	DALI +	DALI +	-	DALI +		
DA-	-	DALI -	-	DALI -	DALI -	-	DALI -		
N	neutral wire	neutral wire	neutral wire	neutral wire	neutral wire	neutral wire	neutral wire		
⊕	protective wire	protective wire	protective wire	protective wire	protective wire	protective wire	protective wire		

0ND - ON/OFF driver      0D2 - DALI2 driver      NM3A - Emergency unit 3H Autotest + driver      NA3D2 - Emergency unit 3H Autotest + DALI2 driver  
 ND3D2 - Emergency unit 3H DALI + DALI2 driver      NMM3A - Emergency unit 3H Autotest + pictogram      NNMD3 - Emergency unit 3H DALI + pictogram

6. Tilt the reflector (2) into its final position until it is secured by the plastic hook (1).
7. Install the luminaire cover (6) and secure it with M5 screws (7), torque 1.0 Nm.
8. Secure the cover with four latches (8) by pressing the cover against the housing until the latches snap into the locks (9), see picture 6.

Picture. 6  
Latches in the correct position



**Maximum number of lights connected to a circuit breaker:** Maximal short circuit current must not be higher than 10kA.

	B10A	B16A	C10A	C16A
KERN-EX1/21-α-L04-γγγ-1900-εεεε-ζζζ-PD	15	24	25	40

**Pictogram table: according to ČSN EN ISO 7010:**

Applications	Order code	Type	Viewing distance
	009466	Pictogram - KERN-figure + arrow left	30m
	009467	Pictogram - KERN-figure + arrow right	30m
	009468	Pictogram - KERN-figure + arrow down	30m
	009469	Pictogram - KERN-figure + arrow up	30m
	009470	Pictogram - KERN-EXIT	30m

**Size of the pictogram:**



### Functionality Test of the Emergency Lighting System:

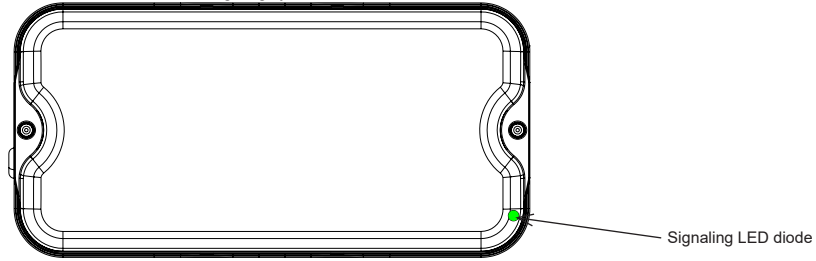
To ensure proper operation of the luminaire, the enclosed emergency lighting test record must be followed.

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.**

Picture. 7  
Functionality test of the emergency lighting system



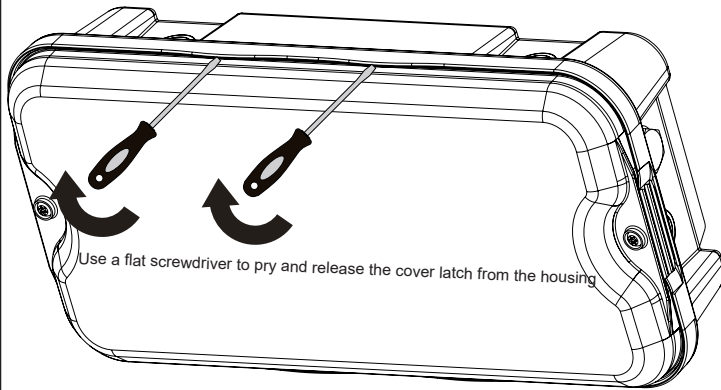
### Battery replacement:

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.

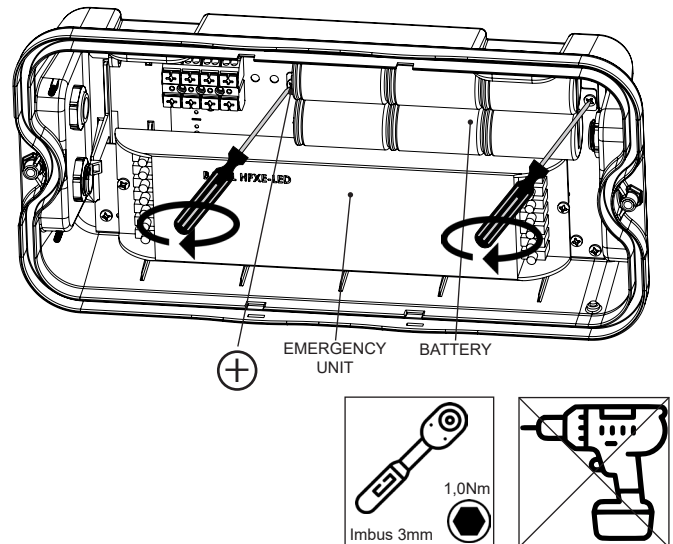
1. Disconnect the luminaire from the power supply.
2. Loosen the M5 locking screws on the optical cover.
3. Remove the cover using a flathead screwdriver (picture. 8).
4. Release the reflector hook and tilt it.
5. Disconnect and remove the old battery using a Phillips screwdriver to unscrew the two screws holding the battery (see picture 9).
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 (see picture 6).
10. Reconnect to power and verify emergency operation.
11. Confirm that battery charging is indicated properly.

**WARNING: Use only batteries of the same type and parameters as indicated on the battery label.**

Picture. 8  
Remove the cover using a flathead screwdriver



Picture. 9  
Battery disconnection and removal using a Phillips screwdriver



During the installation and operation of luminaires in explosive atmospheres, it is essential to follow the relevant safety measures in accordance with national regulations and standards.. KERN-Ex1/21 luminaires are plastic, dust-tight, and water-tight fixtures designed for illuminating areas with a risk of explosion. Connection of the luminaire to the electrical network may only be carried out by a person with the appropriate qualification, in accordance with the valid regulation on electrical competence. When installing the luminaire, ESD safety precautions must be observed using appropriate tools and equipment.

The light source, seals, cable glands, or plugs in this luminaire may only be replaced by the manufacturer, its authorized service technician, or a similarly qualified person. Any modification or replacement of components that affect explosion protection is strictly prohibited.. Repairs may only be performed by qualified personnel and only using original spare parts.



**WARNING!!!**  
**Potential risk of electrostatic charging.**  
The luminaire must be installed in such a way that accidental contact with people and parts of the luminaire is prevented.. This luminaire is intended for fixed installation only.  
Clean the luminaire using a damp cloth only. Regular cleaning intervals must be observed.  
Do not open while under voltage.  
Replace any cracked protective cover immediately.  
The battery inside the luminaire may only be replaced with a battery of the same type and specifications!!  
The manufacturer is not liable for any damage resulting from failure to follow the installation instructions.



The manufacturer is registered in the take-back system for electrical and electronic equipment and waste according to applicable regulations, and also participates in the packaging take-back and recycling system operated by EKO-KOM. (EK-F06070058).

### Accessories to order:

In luminaire data sheet.

### Basic instructions for luminaire users:

