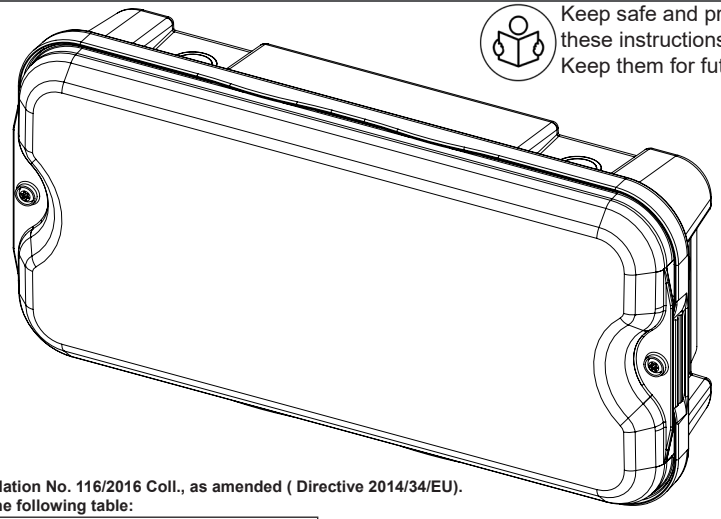
KERN-EX2/21
Technical conditions for mounting luminaire
ENG

26.6.2025/ rev.0
www.vyrtych.cz

KERN-EX2/21
FTZÚ 25 ATEX 0018X
Ⓔx II 3G Ex nR IIC T6 Gc
Ⓔx II 2D Ex tb IIIC T85°C Db

IECEx FTZÚ 25.0013X
Ex nR IIC T6 Gc
Ex tb IIIC T85°C Db
IP66/67, 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-EX2/21-α-L04-γγγ-1200-0ND-06-PD	-30°C - +60°C	7	66/67	T6	85°C
KERN-EX2/21-α-L04-γγγ-1800/2400-0ND-06-PD	-30°C - +55°C	10/13			
KERN-EX2/21-α-L04-γγγ-2900/3400-0ND-06-PD	-30°C - +50°C	16/20			
KERN-EX2/21-α-L04-γγγ-4000-0ND-06-PD	-30°C - +45°C	23			
KERN-EX2/21-α-L04-γγγ-1200-0D2-06-PD	-30°C - +60°C	7			
KERN-EX2/21-α-L04-γγγ-1800/2400-0D2-06-PD	-30°C - +55°C	10/13			
KERN-EX2/21-α-L04-γγγ-2900/3400-0D2-06-PD	-30°C - +50°C	16/20			
KERN-EX2/21-α-L04-γγγ-4000-0D2-06-PD	-30°C - +45°C	23			
KERN-EX2/21-α-L04-γγγ-1200/1800-εM3/εM3A-06-PD	0°C – +40°C	7/10			
KERN-EX2/21-α-L04-γγγ-1200/1800-εD3D2-06-PD	0°C – +40°C	7/10			
KERN-EX2/21-α-L04-γγγ-2400-εM3/εM3A-06-PD	0°C – +40°C	13			
KERN-EX2/21-α-L04-γγγ-2400-εD3D2-06-PD	0°C – +40°C	13			
KERN-EX2/21-α-L04-γγγ-2900/3400/4000-εM3/εM3A-06-PD	0°C – +30°C	16/20/23			
KERN-EX2/21-α-L04-γγγ-2900/3400/4000-εD3D2-06-PD	0°C – +30°C	16/20/23			
KERN-Ex2/21-α-L04-γγγ-400-εNM3/εM3A-06-PD	0°C – +45°C				
KERN-Ex2/21-α-L04-γγγ-400-εNMD3-06-PD	0°C – +45°C				

Rated voltage and frequency:
pro předřadníky TCI: 220-240V, 0/50/60Hz
pro předřadníky OSRAM: 220-240V, 0/50/60Hz
pro nouzové jednotky TRIDONIC: 220-240V, 50/60Hz

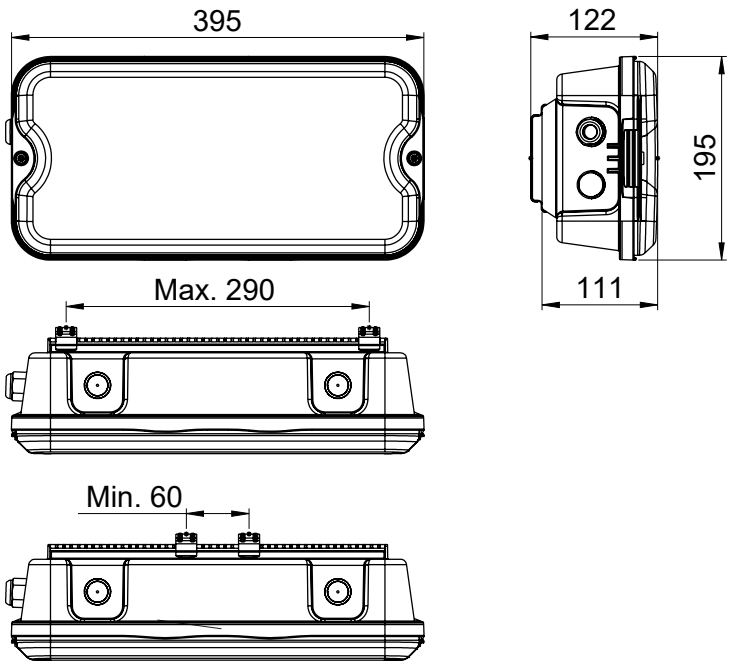
KERN-EX2/21-G-L04-γγγ-δδδ00- εεεε-06-PD - IP67 - according to the standards ČSN EN 60529
KERN-EX2/21-H-L04-γγγ-δδδ00- εεεε-06-PD - IP66,67 - according to the standards ČSN EN 60529

Luminaire marking:

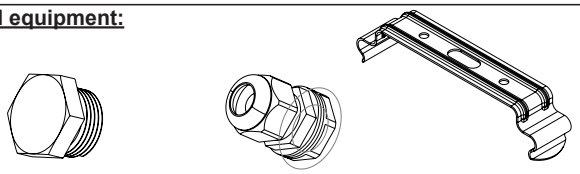
VYRTYCH
Židněves 116, 294 06 Březno, Czech Republic
① **KERN-EX2/21-α-L04-γγγ-δδδ00-εεεε-ζζ-PD**
② 220-240V, 50/60Hz, 220-240V DC, class I, 15W
③ -30°C≤ta≤+50°C, IP66/67
With protective cage 123456
④ FTZÚ 25 ATEX 0018X/ IECEx FTZU 25.0013X
⑩
⑤ Ⓔx II 3G Ex nR IIC Tx Gc/ Ex nR IIC Tx Gc
⑥ Ⓔx II 2D Ex tb IIIC Txx°C Db/ Ex tb IIIC Txx°C Db
⑦ art.n.: 61 657 ⑧ Product Type: W011204012-84AA0PD660000S
CE ⑨ 1026

Luminaire marking:
1. Name of the luminaire
KERN - name of the luminaire
EX2/21 - luminiare certified for zone 2/21
α - type of luminaire closure G - silicon gasket / H - EPDM gasket
L04 - luminiare lenght 395mm
γγγ - 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 issunace of the certificate
- ATEX / IECEx - abbreviation of certificate type
- 0018X / 25.0013X - 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 cod

Luminaire dimensions:



Standard equipment:



1x Ex plastic cable plug M20

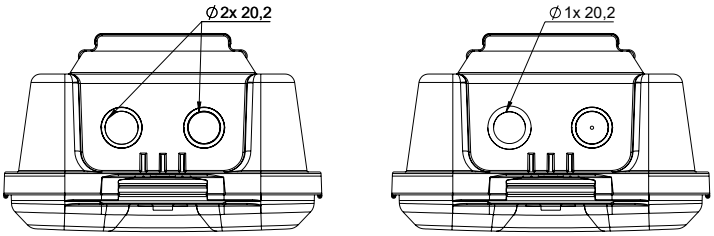
2x Ex plastic cable gland M20

2x stainless mounting clip (AISI 304)

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



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.

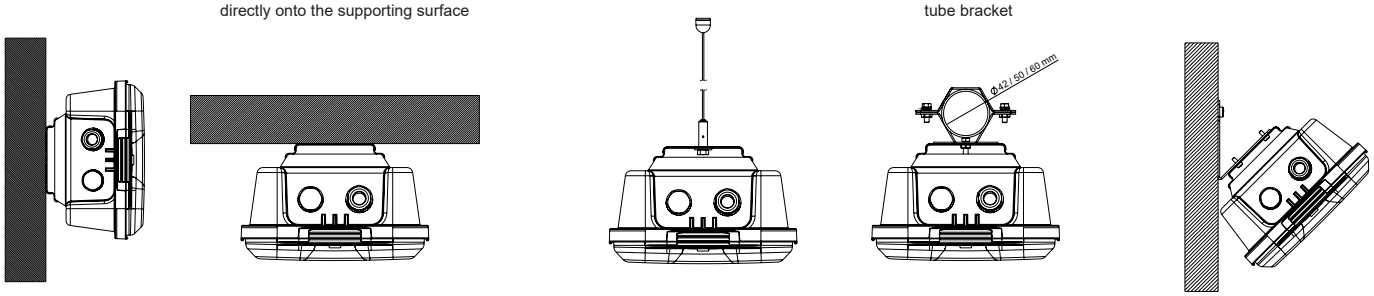
Types of mounting:

Mounting procedure using fastening brackets directly onto the supporting surface

With suspensions bracket

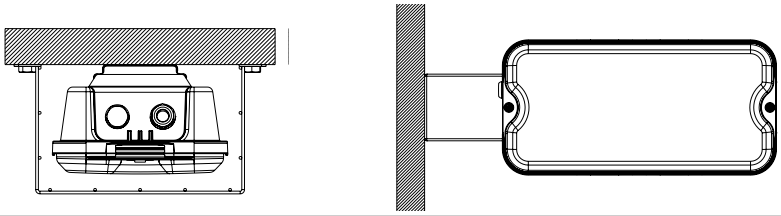
Mounting procedure using a tube bracket

With wall bracket - angle 45°



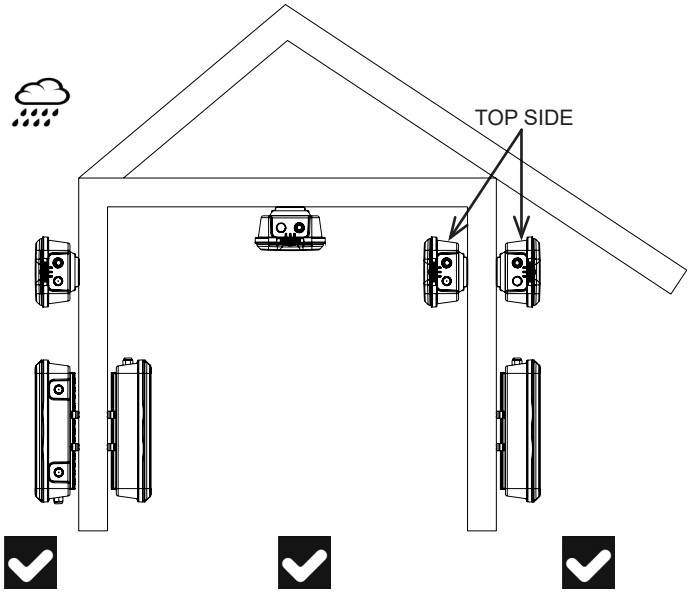
With protective cage

With wall bracket

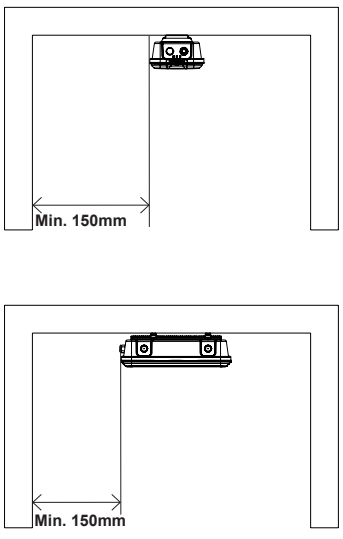


Picture. 5
Conditions of outdoor assembly

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

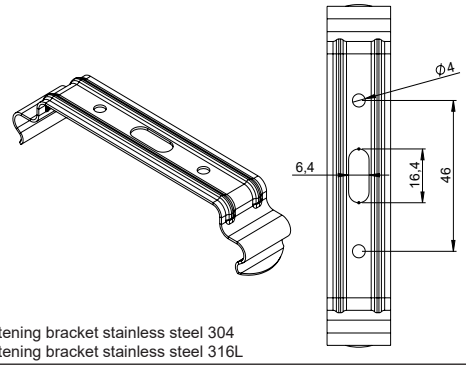


Minimum distance of the light fixture from the wall



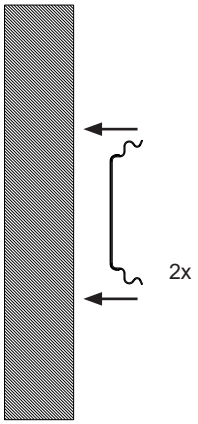
Mounting procedure using fastening brackets directly onto the supporting surface:

1



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

2



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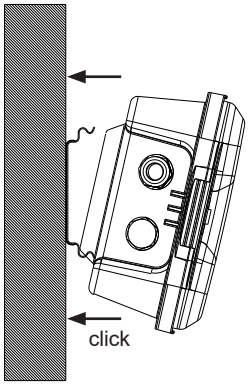

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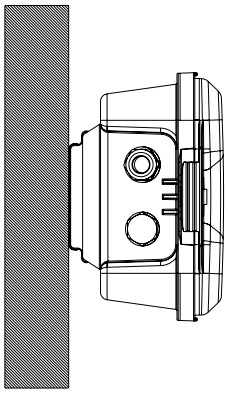
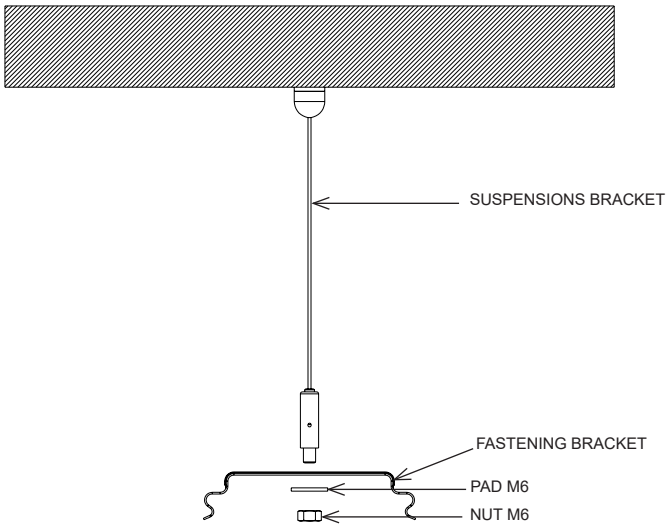


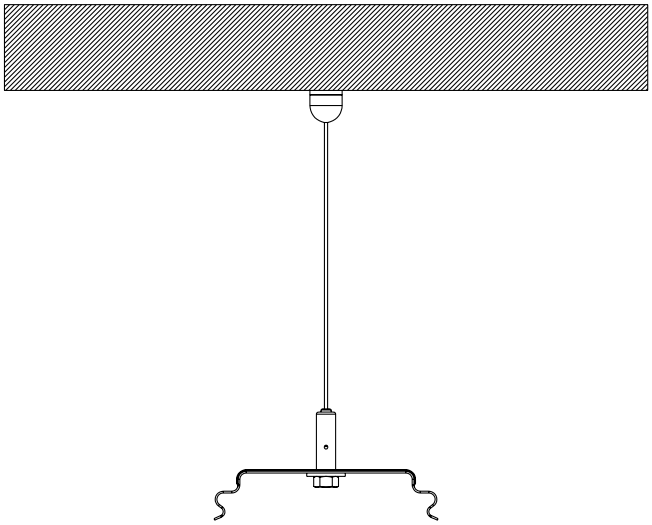
Mounting with suspensions bracket:

1



3575 - Suspensions bracket

2



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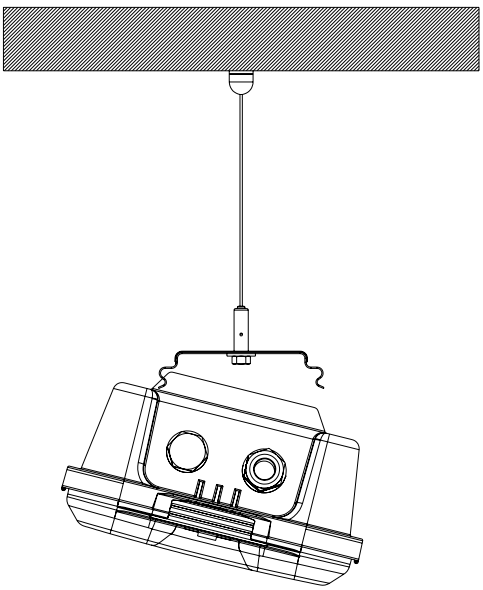

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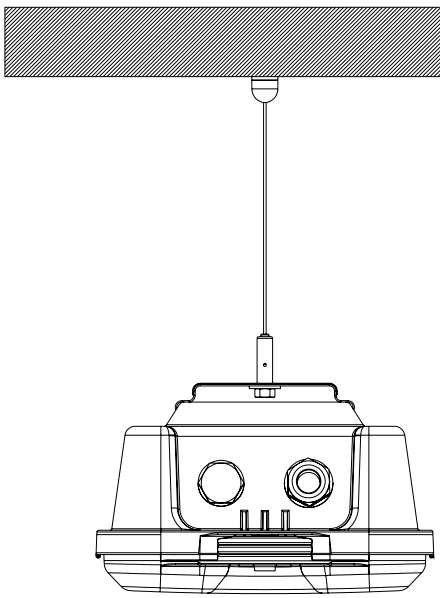
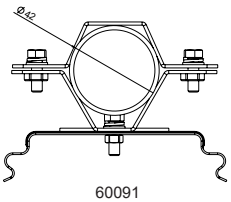


Mounting procedure using a tube bracket:

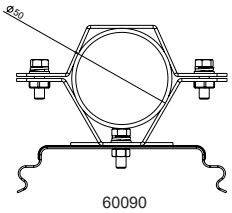
1

Pipe diameter 42 mm (1 1/4")



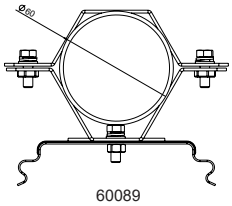
60091
Accessory set bracket for 42 mm diameter AISI 304

Pipe diameter 50 mm (1 1/2")



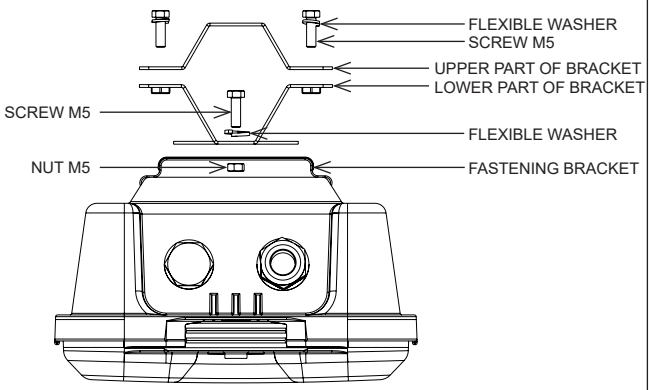
60090
Accessory set bracket for 50 mm diameter AISI 304

Pipe diameter 60 mm (2")



60089
Accessory set bracket for 60 mm diameter AISI 304

2



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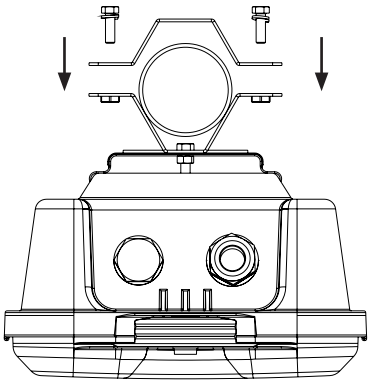

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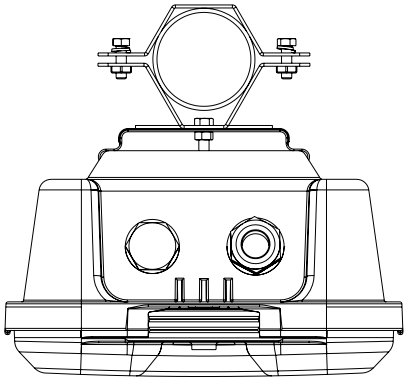
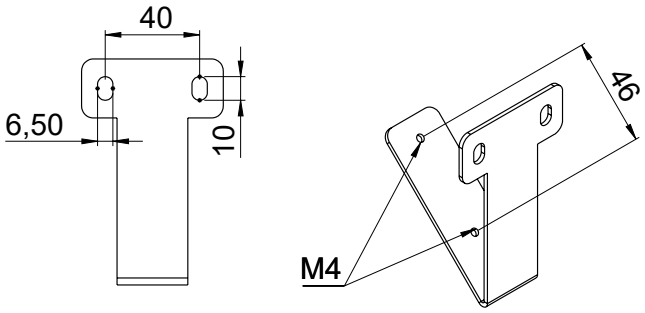


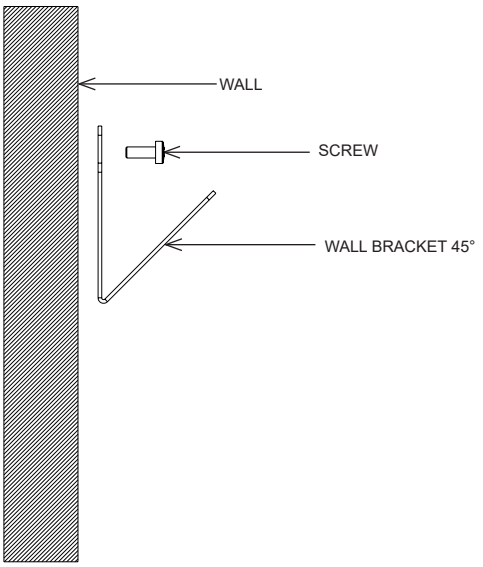
Mounting procedure using a 45° wall bracket:

1



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

2



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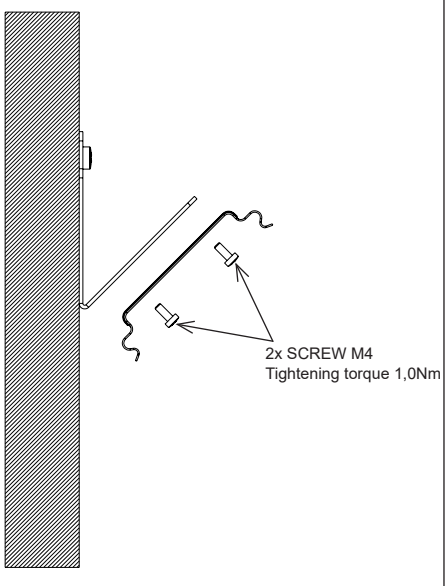

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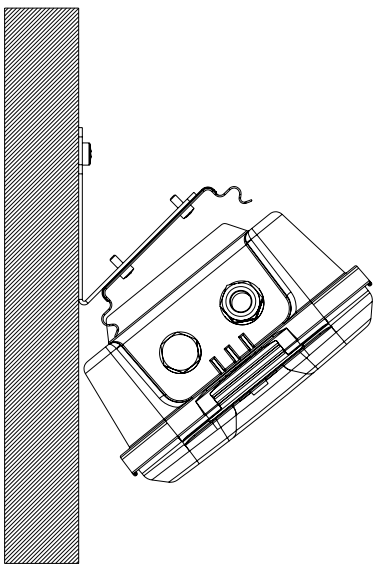

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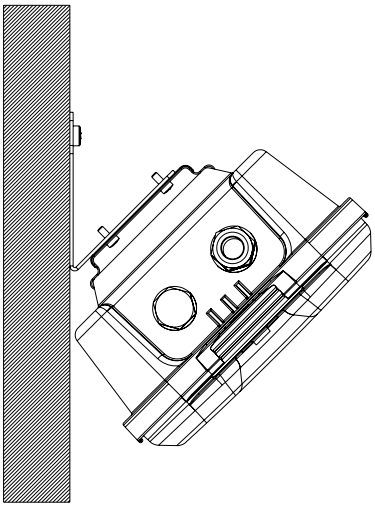
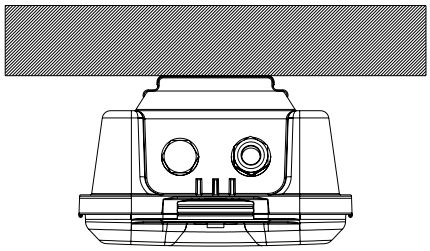


Mounting procedure with protective cage:

1



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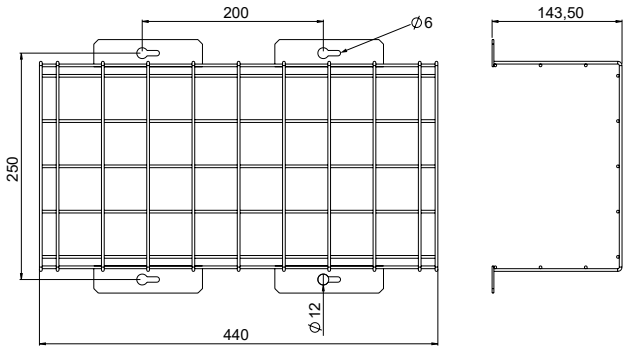
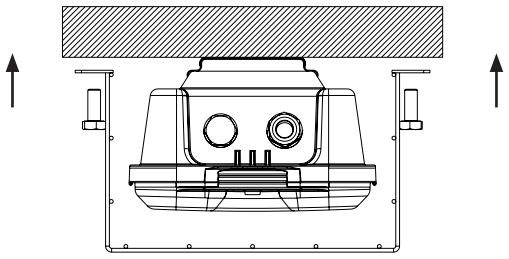


62858 - PROTECTIVE CAGE

3



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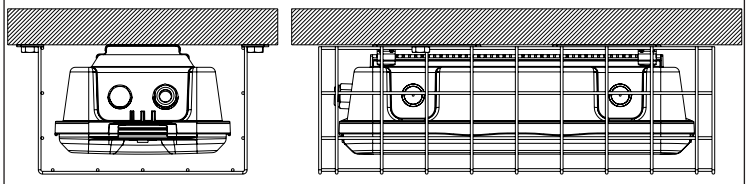
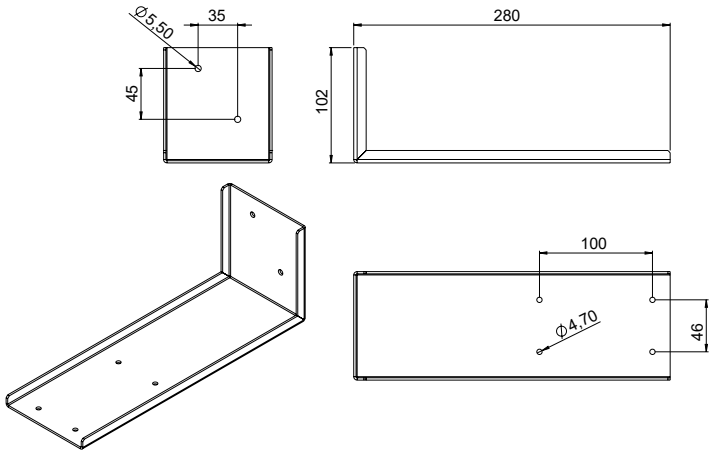


⚠ When installing the protective cage, cable glands must not be mounted on the side of the luminaire
Always install the glands at the front of the luminaire

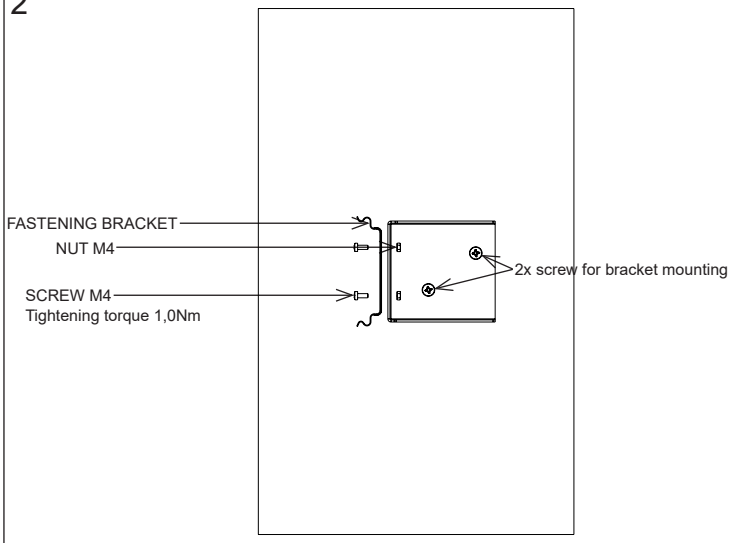
Mounting procedure with wall bracket:

1



6902 - Wall bracket

2



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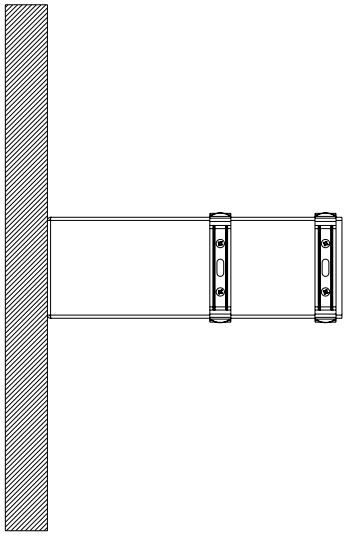

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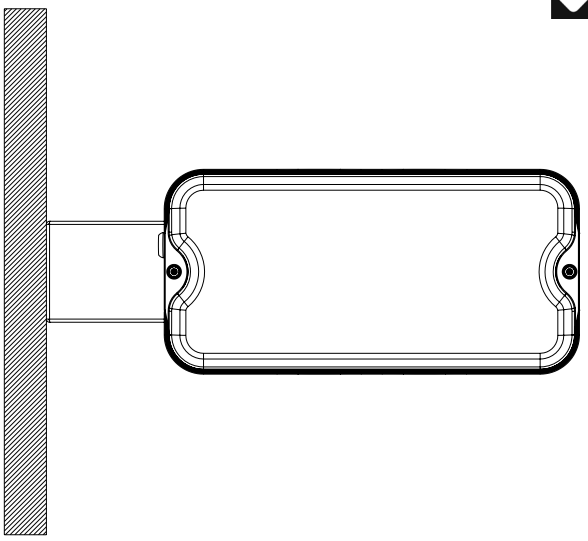
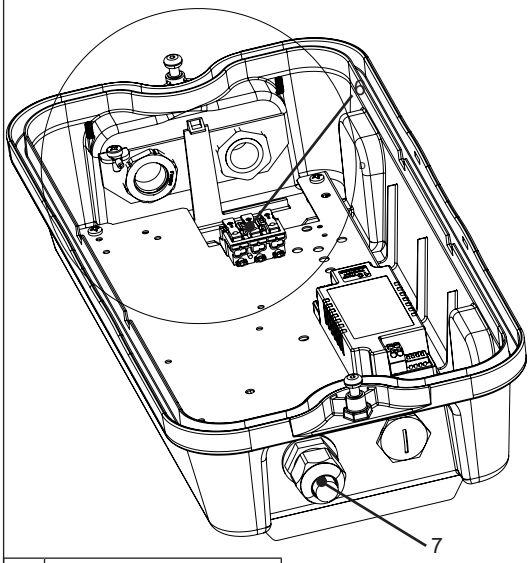
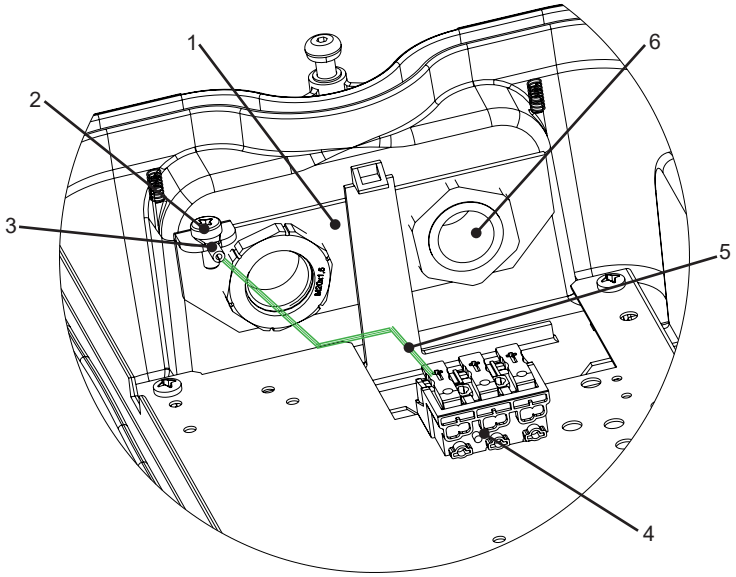


Grounding of metal cable glands with armored cable: 020409 – KERN equipment – glands for armored cable:

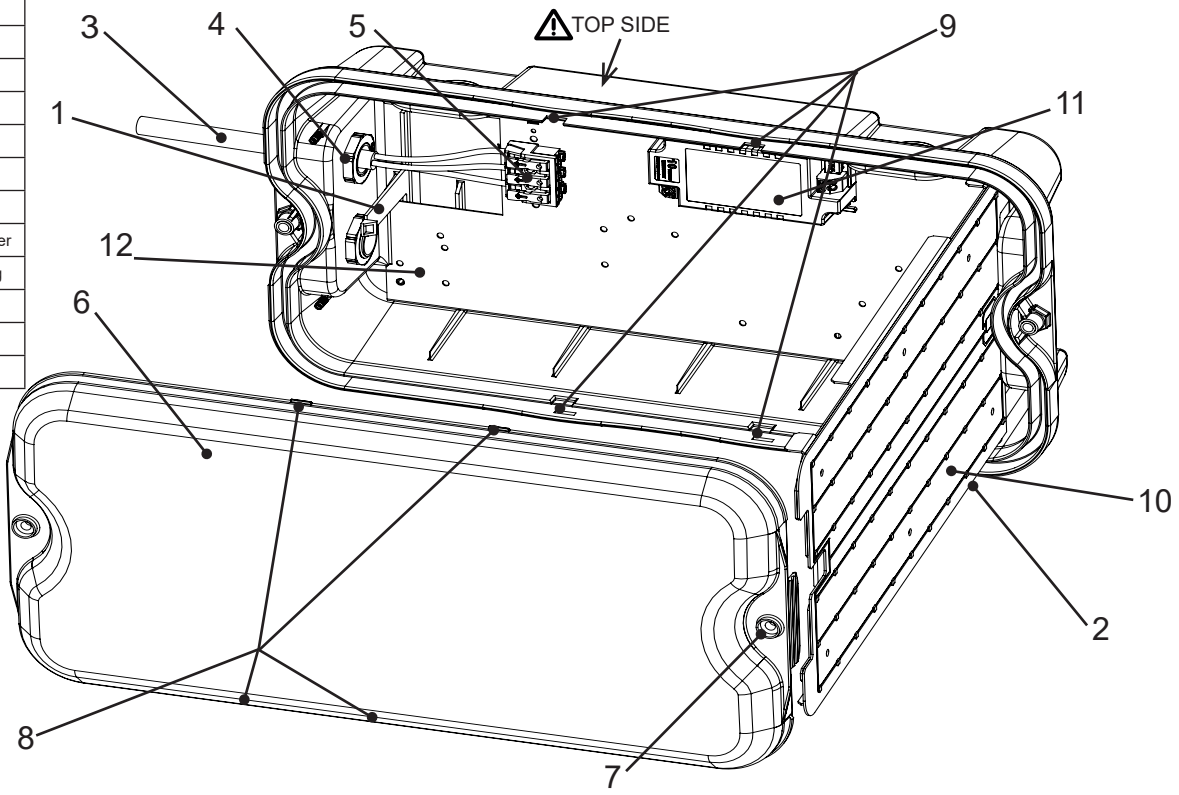


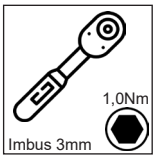


1	Grounding washer
2	M4 screw
3	Cable eye
4	Terminal block
5	Protective wire
6	Metal cable gland
7	Testing port

Luminaire construction

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





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.

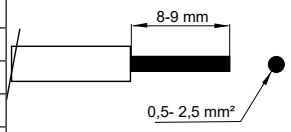
3. Install the cable gland, cable plug, and test port on the luminaire. Tighten to the luminaire with a torque of 2.7 Nm. Each cable gland must be secured with two nuts.

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	Operating temperature of the cable gland
M20x1,5	7 - 13mm	2,0Nm	-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**	**NM3**	**NNM3**	**NNM3A**	**ND3D2**	**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	charging phase wire
DA+	-	DALI +	-	-	-	-	DALI +	DALI +
DA-	-	DALI -	-	-	-	-	DALI -	DALI -
N	neutral wire	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	protective wire



0ND - ON/OFF driver **NM3A -** Emergency unit 3H Autotest + ON/OFF driver **NNM3 -** Emergency unit 3H + pictogram **ND3D2 -** Emergency unit 3H DALI + DALI2 driver

0D2 - DALI2 driver **NM3 -** Emergency unit 3H Basic + ON/OFF driver **NNM3A -** 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.

9. The initial inspection must be provide according to EN 60079-17, Table 1.

Picture. 6
Latches in the correst position

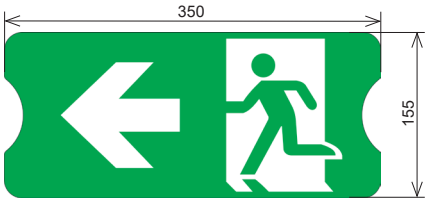
Maximum number of lights connected to a circuit breaker: Maximal short circuit current must not be higher than 10kA.

Type	B10A	B16A	C10A	C16A
KERN-EX2/21-α-L04-γγγ-1200-0ND-06-PD	31	50	52	85
KERN-EX2/21-α-L04-γγγ-1800-0ND-06-PD				
KERN-EX2/21-α-L04-γγγ-2400-0ND-06-PD				
KERN-EX2/21-α-L04-γγγ-2900-0ND-06-PD				
KERN-EX2/21-α-L04-γγγ-3400-0ND-06-PD				
KERN-EX2/21-α-L04-γγγ-4000-0ND-06-PD				
KERN-EX2/21-α-L04-γγγ-1200-0D2-06-PD				
KERN-EX2/21-α-L04-γγγ-1800-0D2-06-PD				
KERN-EX2/21-α-L04-γγγ-2400-0D2-06-PD				
KERN-EX2/21-α-L04-γγγ-2900-0D2-06-PD				
KERN-EX2/21-α-L04-γγγ-3400-0D2-06-PD				
KERN-EX2/21-α-L04-γγγ-4000-0D2-06-PD				

Pictogram table: according to ČSN EN ISO 7010:

Applications	Order code	Type	Viewing distance
	62832	Pictogram - KERN-figure + arrow left	30m
	62833	Pictogram - KERN-figure + arrow right	30m
	62834	Pictogram - KERN-figure + arrow down	30m
	62835	Pictogram - KERN-figure + arrow up	30m
	62836	Pictogram - KERN-EXIT	30m

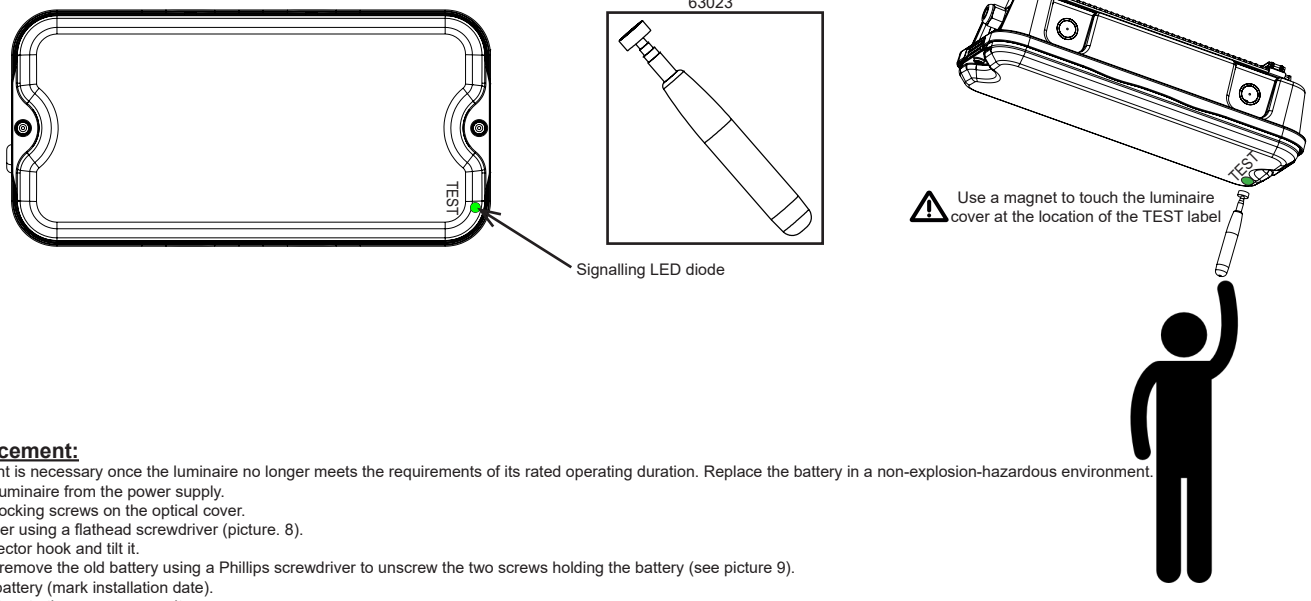
Size of the pictogram:



Functionality Test of the Emergency Lighting System:

To ensure proper operation of the light fixture, it is necessary to follow the attached emergency lighting test record.
To perform a functionality test of the emergency light, place the magnet (accessory no. 038013) over the indicator LED marked with the TEST label – see picture 7.
If the emergency power source turns off before the autonomy time has elapsed, even though the battery is fully charged, the battery must be replaced with a new one.
Note: The battery reaches full capacity after approximately three charge/discharge cycles.

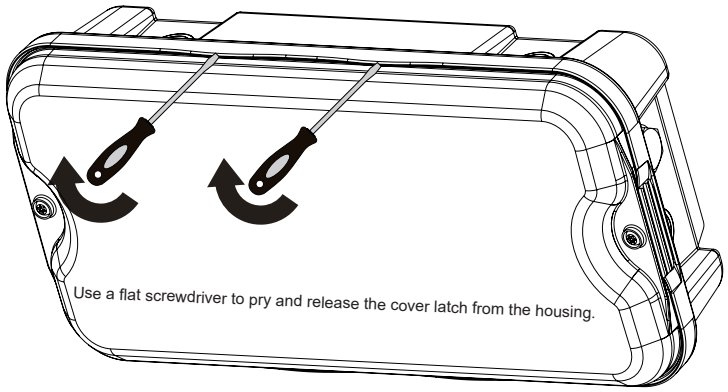
Picture. 7
Functionality test of the emergency lighting system



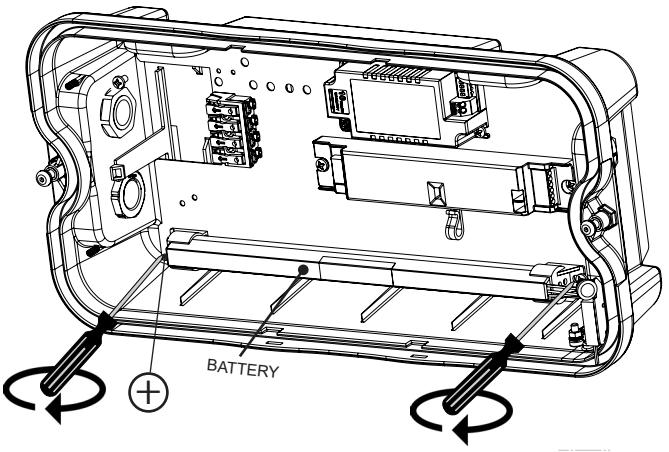
Battery replacement:

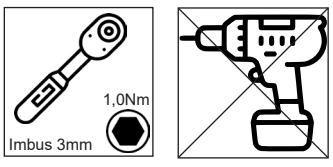
Battery replacement is necessary once the luminaire no longer meets the requirements of its rated operating duration. Replace the battery in a non-explosion-hazardous environment.
1. Disconnect the luminaire from the power supply.
2. Loosen the M5 locking screws on the optical cover.
3. Remove the cover 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.

Picture. 8
Remove the cover using a flathead screwdriver



Picture. 9
Battery disconnection and removal using a Phillips screwdriver





Restricted breathing enclosure test (nR):

The restricted-breathing (nR) enclosure test must be carried out if the "nR" enclosure is opened by the end user for installation or maintenance of the luminaire.
1. Prepare a calibrated differential pressure gauge, an air hose with a diameter matching the sealing area of the cable gland, a vacuum pump, and other equipment required for the restricted-breathing enclosure test.
2. Insert the air hose and tighten the cable gland. Use the tightening torque specified in the table below:

Cable gland	Sealing area	Tightening torque of the cable gland	
M20x1,5	7 - 13mm	2,0 Nm	

According to the ČSN EN IEC 60079-15 standard, testing can be carried out using the following test methods:

	Method 1	Method 2	Method 3
Initial vacuum at the start of the test	3 kPa (30 mbar)	0,3 kPa (3 mbar)	0,3 kPa (3 mbar)
Test duration	14 s	14 s	90 s
Minimum vacuum after the specified duration	2,7 kPa (27 mbar)	0,27 kPa (2,7 mbar)	0,15 kPa (1,5 mbar)

After completing the test, you must insert the blind plug back into the test port. Tighten the cable gland with the tightening torque specified in the table.

If the test result does not meet the requirements:

A) Check the tightening and position of individual components:
- *Tightening of the cable gland/plug with the correct torque*
- *Tightening of the cable inside the cable gland with the correct torque*
- *Whether the cable is within the sealing range of the cable gland*
- *Tightening of the screws with the correct torque*
- *Correct position of the latches – see fig. 6 in this manual*
- *Compliance with the permitted mounting position*
- *Integrity of the luminaire cover and housing*

B) Check the gasket:
- *Whether the luminaire gasket is undamaged and properly seated in its groove*
- *Whether the gasket under the cable gland/plug is undamaged*

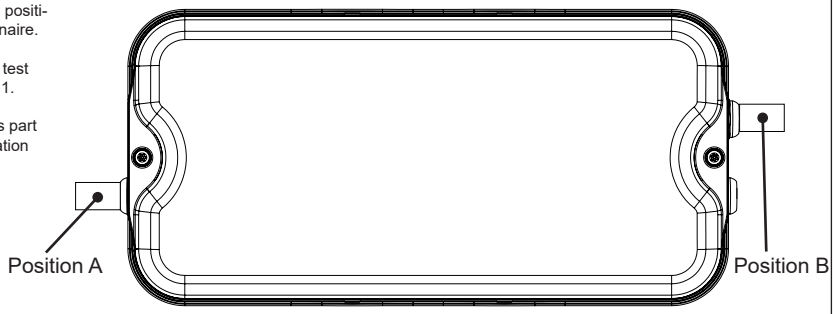
C) If any part of the luminaire or gasket is damaged, it must be replaced
- EPDM gasket – replace the gasket only
- Silicone gasket – replace the entire luminaire housing

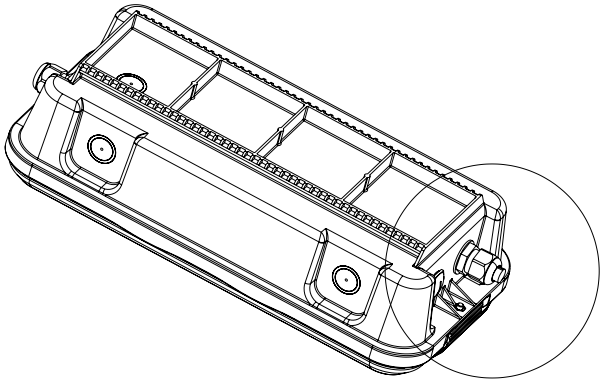
D) For further instructions or in case of any questions, contact the technical support of VYRTYCH a.s.

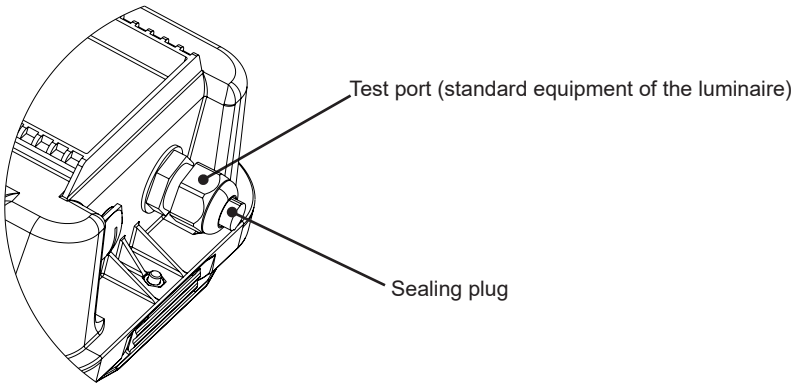
During the installation of the luminaire, it is possible to choose the location of the test port at position or B – depending on the position of the cable gland for through-wiring/looping of the luminaire.

The test port remains in the selected position (A or B) for the entire life of the luminaire. The test port is intended only for testing in accordance with ČSN EN IEC 60079-15, section 12.2.2.1.1.

During normal operation of the luminaire, the test port must be sealed with the plug (which is part of the package or standard equipment) and tightened with the torque specified in the installation manual.







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-Ex2/21 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 a way that prevents accidental contact by persons or objects.
The 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 energized.
Replace any cracked protective cover immediately.
The battery in the luminaire must only be replaced with a battery of the same type or 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: