

CRYSTAL LED

INSTALLATION AND MAINTENANCE MANUAL **EN****MOUNTING TYPE**

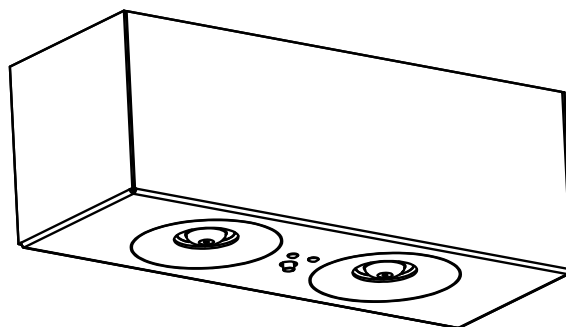
Directly to the wall or ceiling. For other mounting types see: „Mounting accessory” in product data sheet

OPERATING MODE

NM - NON-MAINTAINED - luminaire operates in emergency mode after power supply failure

SYSTEM VARIANT

- ST** - STANDARD - tests commissioned manually
- AT** - AUTOTEST - internal components, battery and light source tests being performed automatically
- CENTRALTEST** - internal components, battery and light source tests being performed on command from the main unit of central management system

**TESTS**

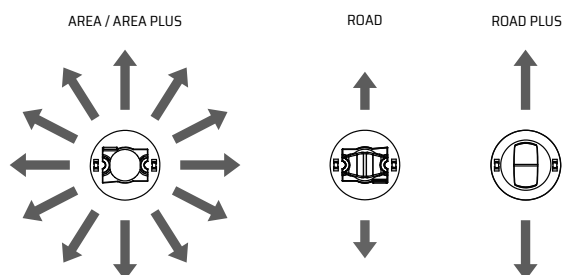
The microcontroller-based control and test unit performs automatically (AT) or on order from the central management system (CT) or by manual execution (ST) two types of tests:

TEST A - internal components and light source test lasting 60 seconds - performed every 30 days for the AT system variant

TEST B - internal components, light source and operation duration test (till the battery is fully discharged) - performed every 360 days for the AT system variant

OPTICS

- AREA** - (AR) symmetrical light distribution in all directions, recommended for use in places of considerable height or to illuminate fire points
- AREA PLUS** - (AP) symmetrical light distribution in all directions, ensuring adequate illumination on a large area
- ROAD** - (RO) light distribution mainly along the escape route, recommended for use in high corridors
- ROAD PLUS** - (RP) light distribution mainly along the escape route - with a much greater range than for the ROAD optics, for small heights

**TECHNICAL DATA**

Supply voltage	230V AC 50/60Hz
Protection class	I
Ingress protection	IP40
Light source type	LED modules ¹⁾
Light colour temperature	5700K
Light source power	2W, 4W, 6W
Minimum luminous flux (2W / 4W / 6W)	AR 220 / 417 / 642 lm
	AP 175 / 331 / 508 lm
	RO 177 / 368 / 563 lm
	RP 127 / 351 / 537 lm

Light source lifespan	> 50 000h
Battery type / voltage	Ni-MH, Ni-Cd / 4,8V
Battery capacity	1,0; 2,5; 4,0Ah
Battery recharging time	< 24h
Emergency operation time	1h; 2h; 3h
Ambient temperature range	+5 - +35°C
Supply cable cross-section area	0,5 - 2,5mm ²
Supply cable diameter	≤ 13mm
Communication cable diameter (CT)	≤ 7mm
Suitable for through wiring	YES

¹⁾ Non-exchangeable, but serviceable light source

SAFETY

- During the installation and usage of emergency luminaires, follow the national safety rules as well as generally accepted technical rules
- Supply voltage should never be removed from the permanent phase by any external switches, relays or contactors (BMS, wall switch, etc.)
- During usage of emergency luminaires keep a register of inspection reports
- Luminaire installation or maintenance has to be preceded by turning off the power supply and battery
- Ensure that all foreign bodies are removed before the luminaire power is switched on
- The luminaire is to be used undamaged and in accordance with specifications

THE ABOVE-MENTIONED LUMINAIRE IS A FIRE PROTECTION EQUIPMENT AND THEREFORE FALLS WITHIN RELEVANT STANDARDS AND REGULATIONS.



NOT OBEYING THE SAFETY INSTRUCTIONS AND RECOMMENDATIONS CAN CAUSE LIFE THREAT OR EVEN DEATH

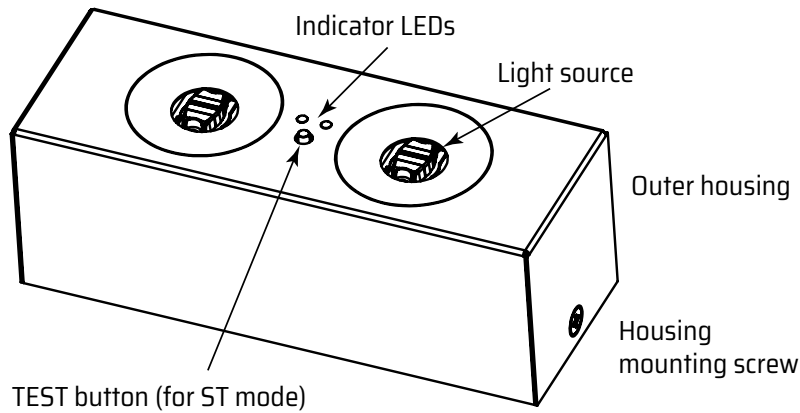
Not obeying this instruction manual can result in luminaire damage and loss of warranty



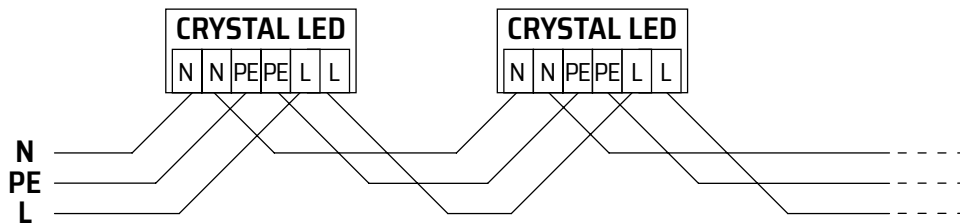
DO NOT STARE AT THE OPERATING LIGHT SOURCE

The luminaire should be positioned so that prolonged staring into the luminaire at a distance closed than 0.5m is not expected

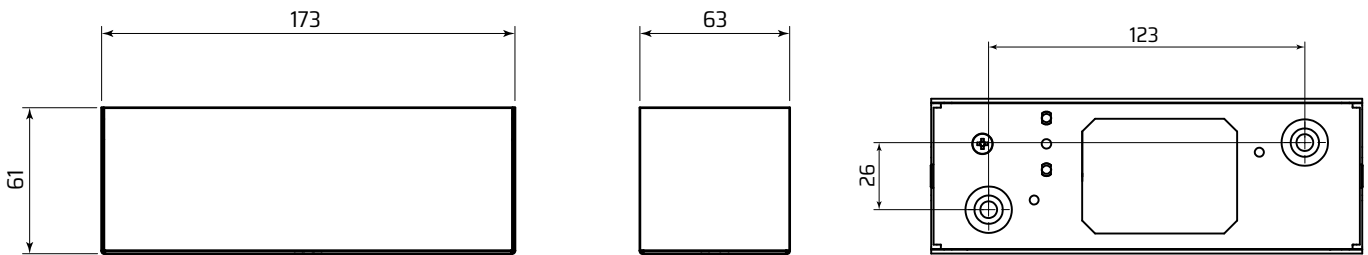
CONSTRUCTION



WIRING DIAGRAM



DIMENSIONS (mm)



LUMINAIRE AND BATTERY STATE SIGNALLING

green LED	battery state	red LED	luminaire state
•	connected and fully operated	•	A test or B test error; battery not connected or damage; light source or emergency module damage
•/•	connected and being charged	•/•	A test or B test in progress
○	not connected or damage in the charging circuit	○	luminaire operated

• - on, •/• - blinks, ○ - off

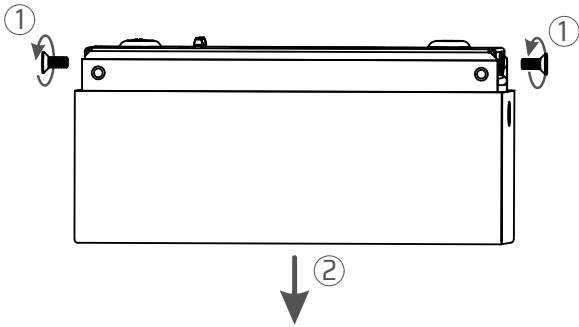


BEFORE ANY INSTALLATION OR MAINTENANCE WORK IS PERFORMED ON THE LUMINAIRE THE POWER SUPPLY SHOULD BE DISCONNECTED

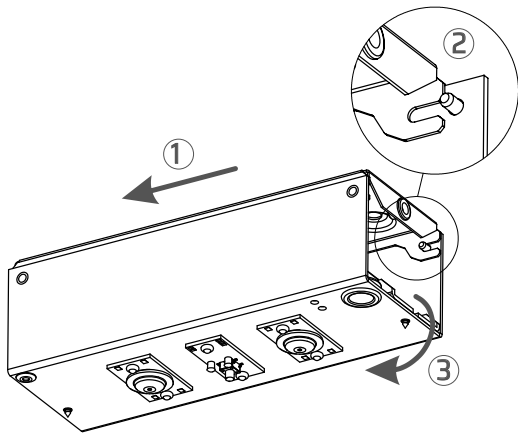
All installation and maintenance procedures can be performed only by qualified, properly trained and if appropriate, certified staff

INSTALLATION

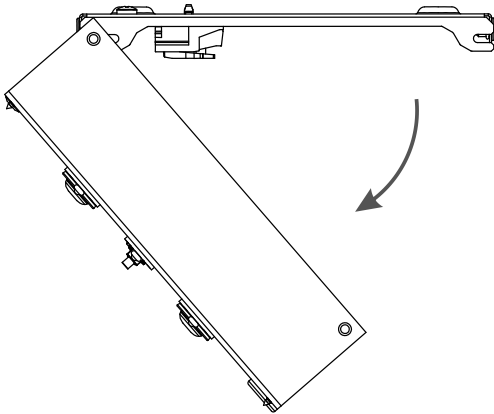
1. Unpack the luminaire after transport and verify its condition.
2. Drill holes in ceiling according to mounting hole spacing (see DIMENSIONS) and in the light direction (see OPTICS), so that the cables coming from the ceiling go freely through the hole provided for this purpose. Use dowels and screws appropriate for the material luminaire is being mounted to.
3. Remove the screws that secure the outer casing and remove it.



4. Slide the top plate horizontally to release the mechanical catch from the pin.



5. Rotate the top cover to get an access to luminaire connectors.

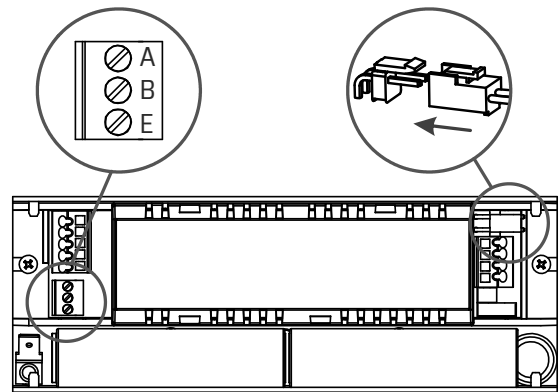


6. Pass the power cables (and communication cables for CT variant) through the hole in the top plate, and then screw the luminaire base to the ceiling.
7. Connect the luminaire power supply cables. The luminaire is suitable for through wiring.

WARNING! The L phase has to be the same as the one used for the supply of normal luminaires, where after power loss on it the luminaire goes into emergency operation (permanent phase).

8. Connect the battery cable. Note that the red wire is the positive pole.

For the CT system variant connect the communication cables according to the "Communication line installation manual".



9. Then do the reverse of steps 5, 4 and 3.
10. Perform the commissioning procedure.

COMMISSIONING

After all installation procedures are finished, the luminaire operation needs to be verified. Follow the instructions below and pay attention to the state of the led indicators:

1. Switch on the luminaire power supply. The luminaire should signal battery charging or its charged status.
2. Turn off luminaire power supply. The luminaire will go automatically into emergency operation and the signalling diodes should be off. The light source should illuminate.
3. Switch the power supply back on - the luminaire should start as in the first step.
4. Perform the formation of the battery.

BATTERY FORMING PROCEDURE

To ensure long battery life, perform the battery forming procedure. The following operations should be performed:

1. Turn the mains power supply on – battery is charging. Mains power supply cannot be disconnected until it is completed.
2. After 36 hours turn the power supply off. The luminaire will automatically switch to emergency operation and will be operating until the battery is discharged which can take more than an hour over the rated time.
3. Turn the mains power supply on again.
4. Wait 36h and turn the mains power supply off. Luminaire will switch into emergency operation and will operate until battery is discharged.
5. Turn the mains power supply on.
6. After 24 hours the luminaire is ready.

POTENTIAL IRREGULARITIES AND TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
After connecting the power supply on the green LED indication doesn't lights	Battery disconnected or wrong connected	Make sure the battery is correctly connected
	Light source disconnected or wrong connected	Make sure that the LED module power cables have not been disconnected or damaged during installation
After connecting the power supply the luminaire operating not properly and the LED indicator is off	Not connected or wrong connected power supply cable	Make sure the power supply cables have been properly connected to the connector power supply inside the luminaire
	No power supply in the cables connected to the luminaire	Using a voltage detector, check that in power supply cables brought to the luminaire there is a suitable supply voltage
After disconnecting from the main supply voltage, the luminaire lights up briefly and then turns off	Low battery charge	Connect the mains voltage and leave the luminaire worked to fully charged battery. (Make sure the green LED indicator is blinking)
The luminaire works in emergency mode thought shorter than its nominal time	The battery has lost capacity	Replace the battery
	The luminaire worked outside its own nominal ambient temperature range	Verify the luminaire ambient temperature. Replace the battery

MAINTENANCE

Luminaire should be cleaned with a damp cloth according to building maintenance plan.

Do not use abrasive cleaners, solvents, substances and cleaning agents containing alcohol to clean the luminaire.

The light source used in this luminaire may only be replaced by the manufacturer, his service agent or a similar qualified person.

Battery replacement procedure if nominal emergency operating time isn't met (follow the drawings in installation procedure):

1. Turn off luminaire power supply and open the luminaire according to the installation procedure. Disconnect battery from emergency module and detach it from the housing base. Replace battery according to the type specified on battery label.
2. Connect and mount the replaced battery (reverse of step 1).
3. Close the luminaire.
4. Perform the formation of the battery.

STORAGE

The luminaire should be stored no longer than 6 months from the date of purchase, in a dry place with an ambient temperature range of -10 - +30°C.

WARRANTY

Warranty is valid and enforceable only when manufacturer's recommendations are preserved, and the installation and usage are proper. Warranty is granted for a period of 12 months from the date of sale, unless the luminaire has been sold under different contract conditions. The warranty is excluded in case of misuse, unsuitable use, wrong connection or mechanical defects of the luminaire caused by the client.