FAULTY OPERATION AND ITS POSSIBLE DIAGNOSIS

LED indicator does not light up

AC power failure or the battery not connected or damaged.

The luminaire does not operate in emergency mode the required time for a selected model

It is possible that the battery requires a full charge cycle (48h). If after 48 hours of charging the luminaire still does not keep a predefined autonomy, it is possible that the battery is run-down or damaged due to possible incorrect formatting and needs to be replaced.

RECOMMENDED PERIODICAL MAINTENANCE

The luminaire should be tested on regular basis in accordance with valid laws and regulations. The results of the tests should be recorded and stored for the use of a fire safety inspector.

One time daily

It is suggested to check visually if the LED indicator in the luminaire lights up in green.

One time each month

It is necessary to perform a function test by disconnecting the AC power supply and checking whether the luminaire is operating in emergency mode - the green LED indicator should turn off, and LEDs light up.

One time each year

In order to make an autonomy test, disconnect the AC power supply and test if the luminaire operates in emergency mode for a specified time. If the autonomy time of emergency operation is not sufficient, the battery needs to be fully recharged and the test is to be carried out again. If the result of the test continues to be negative, the battery needs to be replaced.

CAUTION!

All damage that might occur as a result of the device being used not in accordance to this instruction will result in loss of guarantee.

Used or damaged lamps including batteries, are subject to be recycled. They should be delivered to the point of collection of electrical and battery waste or to the manufacturer.

Handling of obsolete equipment

Pursuant to the Act of 29 July 2005 on waste electrical and electronic equipment and the Act of 24 April 2009 on batteries and accumulators, the presented device, after use, due to hazardous substances contained in it, is subject to collection of waste electrical and electronic equipment. Detailed information on WEEE collection can be obtained from municipal authorities.

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ORION LED EMERGENCY LUMINAIRE

Installation and maintenance instructions

ORION LED 4W

ORION LED 7W

TECHNICAL SPECIFICATIONS:	
Light source *: (replaceability: 4W – replaceable; 7W – non-replaceable)	Version 4W: 10 x LED ; Version 7W: 41 x LED
Operating modes *:	SA - mains and emergency operation (M) or A - emergency operation (NM)
Test versions *:	MT – manual test or AT – auto test
Emergency autonomy *:	1 hour or 3 hours
Battery (replaceable) *:	Version 4W: Ni - Mh 1800 mAh / 3.6 V or Ni - Cd 4500 mAh / 2.4V Ni - Cd 1800 mAh / 3.6V Version 7W: Ni-Cd 1500 mAh / 3.6V
Battery charging duration:	24h
Power supply:	220-240V AC 50Hz
Enclosure IP rating:	IP65

*- depending on model

IP65

INTRODUCTION

1. The lamp should be installed when power supply is off. Safety rules, construction and electrical installation standards should be followed all the time.
2. The luminaire should not be powered with circuits connected to inductive power-receiving devices at the same time. This type of solution may cause damage to the electronic module of the luminaire.
3. The luminaire should be used indoors.

INSTALLATION

1. Before installation one has to make sure that the luminaire will be connected to 220-240VAC power supply by the use of minimum a 1,5mm2 wire.
2. Open the luminaire by unscrewing two screws on its ends. Remove the cover.
3. Open the reflector plate with LED light source either by unscrewing two screws at indicated points (for Orion LED) or releasing two plastic locks (Orion LED 7W). Leave it on hinges.
4. Cut out an opening in the body for power supply wires. When making openings in the body, bear in mind the IP rating of the body and use appropriate sealing afterwards. It is necessary to use either grommets or cable glands to maintain IP65 protection level.
5. Install the body of the luminaire on the wall or ceiling, making the information label visible for people who will carry out testing in future.

6. Prepare power cable and connect all the wires to the appropriate terminal block entries.
7. The description of luminaire terminals:
   L - phase wire - brown or black insulation colour; power source for Maintained operation and battery charging
   N - neutral wire - blue insulation colour
   PE - earth wire - yellow and green insulation colour
8. **EMERGENCY OPERATION.** To enable emergency operation of the luminaire the AC mains power has to be connected to appropriate terminals L (phase) and N (neutral). Always remember about connecting the protection earth wire (**PE**). The luminaire should be constantly supplied by power - voltage drop will result in emergency mode activation.
9. **MAINS AND EMERGENCY OPERATION.** For the mains and emergency mode of the luminaire, the AC mains supply needs to be connected to relevant terminals: **L** (phase) and **N** (neutral). Always remember about connecting the protection earth wire (**PE**). In addition, a jumper must be installed between **ZW1** and **ZW2** terminals (for version 4W) or between **L** and **L1** terminals (for version 7W and some 4W) or between **L** and **ZW1** terminals (for some 4W versions). Phase loss **L** will cause automatic activation of the emergency mode. Replacing the jumper by a switch enables to use the luminaire also as a part of a basic lighting.
10. Please remember to indicate the date of installation on the label attached to the battery pack.
11. Insert the battery plug into the socket on the PCB.
12. Close the reflector/LED plate and fix it to the body, using either screws or locks, depending on model.
13. Install the diffuser and screw it to the body.
14. For quick operation testing – switch on the AC power supply. The green LED indicator should light up, signaling the battery charging.
15. First-time charge of the luminaire battery pack should be carried out continuously for 48 hours. This will allow appropriate formatting of the battery pack. During the first-time charge, no testing should be carried out and power supply should not be disconnected for any other purpose. Power supply should be disconnected after 48 hours for the first time. The luminaire should complete a full emergency operation cycle, after which it should be connected to power supply for another 36 hours. This sequence shall complete the formatting cycle.

OPERATION

Emergency operation mode

In this mode (A / NM) the luminaire does not light when powered by AC supply voltage. Correct operation of the device is confirmed by LED indicator lighting up in green. The battery is being continuously trickle charged for the purpose of a possible emergency operation. When AC power supply is off, the luminaire automatically starts operating in emergency mode and the source of light is activated for the period specific for a particular model.

Mains and emergency operation mode

In this mode (SA / M) the luminaire lights up when powered by AC supply voltage. Correct operation of the device is also confirmed by LED indicator lighting up in green. The battery is being continuously trickle charged for the purpose of possible emergency operation. When AC power supply is off, the luminaire automatically starts operating in emergency mode and the source of light is activated for the period specific for a particular model.

Information on lamp operation

The luminaire operates correctly and charging circuit works if the LED indicator lights up in green. If the indicator does not light up, the lamp is not operating with AC power supply on or the battery has been damaged. See more info about signaling in “TESTING” section.

Battery pack

The luminaire is equipped with a rechargeable Ni-Cd or Ni-MH battery pack. Please remember to carry out the correct first-time charge cycle. After such a formatting cycle it achieves its capacity and is prepared to perform a possible full time emergency operation. It is recommended to replace the battery once every four years of operation or in a case of poor test results. Obsolete batteries, similarly to packaging, fluorescent lamps or electronics, are recyclable products that should be disposed to a recyclable waste collection point.

TESTING

ORION LED luminaire is equipped with a TEST button, which is being used both for MT – manual test versions and AT – auto test versions. It enables to test emergency operation of the luminaire.

Auto test function

If a luminaire version has an auto test functionality, the TEST button is being used to initiate and break either function or autonomy tests, depending on time of pressing. Pressing the button for 2s<t<5s initiate the function test, for 5s<t<10s – initiate the autonomy test, while for t>10s – breaks any currently running test.

In a standard luminaire operation, both functional and autonomy tests are being initialised automatically, function test every 30 days and autonomy test every 360 days.

All the possible luminaire working states and LED indications are gathered in the table below.

LUMINAIRE WORKING STATE OR ACTION	GREEN LED INDICATION	RED LED INDICATION	COMMENTS
BASIC STATES			
MAINS SUPPLY ON, BATTERY BEING TRICKLE CHARGED	ON	OFF	
MAINS SUPPLY ON, BATTERY BEING CHARGED	FLASHING (D)	OFF	
MAINS SUPPLY FAILURE, EMERGENCY OPERATION	OFF	OFF	
FUNCTIONAL TEST STATES			
FUNCTIONAL TEST BEING INITIATED	FLASHING (1/T)	OFF	
ELECTRONIC CIRCUIT OR CHARGING CIRCUIT FAILURE	OFF	FLASHING (1/T)	
LIGHT SOURCE FAILURE	OFF	FLASHING (2/T)	
LUMINAIRE (ELECTRONICS, BATTERY, LIGHT SOURCE) – OK	ON	OFF	
AUTONOMY TEST STATES			
AUTONOMY TEST BEING INITIATED	FLASHING (1/T, A)	FLASHING (1/T, A)	ALTERNATE FLASHING
BATTERY CHARGING CIRCUIT FAILURE	OFF	FLASHING (1/T)	
WEAK BATTERY, AUTONOMY TIME SHORTER THAN DEFINED	FLASHING (D)	FLASHING (3/T)	PARALLEL FLASHNG
BATTERY, CHARGING CIRCUIT AND AUTONOMY – OK	ON	OFF	
MANUAL TEST BUTTON FUNCTIONS			
INITIATION OF A FUNCTIONAL TEST – PRESSING A BUTTON FOR A 2s<t<5s	FLASHING (1/T)	OFF	
INITIATION OF AN AUTONOMY TEST – PRESSING A BUTTON FOR A 5s<t<10s	FLASHING (1/T, A)	FLASHING (1/T, A)	ALTERNATE FLASHING
BREAKING ANY RUNNING TEST OR TEST RESULTS RESETTING FOR t>10s			
OTHER FUNCTIONS			
INHIBIT OR REST MODE ACTIVATED	FLASHING (3/T)	OFF	

Legend:

T – 2s period; t – time of pressing the test button

FLASHING: (1/T) / (2/T) / (3/T) – 1 flash / 2 flashes / 3 flashes every 2s period

FLASHING (A): alternate flashing of two LEDs – with a ½ T shift between them

FLASHING (D): number of flashes depending on battery charge status: 1/T ≥ 25%, 2/T ≥ 50%, 3/T ≥ 75%, ON ≥ 90% (here ON means the green LED is continually lighting, the battery is being trickle charged).

Manual test function

When the emergency luminaire is connected to mains and there is no voltage drop, pressing and holding TEST button will result in activation of the “voltage drop” mode, the signal LED will go off and the luminaire should light up. When the button is released - the luminaire will switch back into its standard operation mode.

The above action means that in a case of emergency mode version the luminaire will go from unlit to illuminated. In a case of mains and emergency mode the luminaire will change a power source, from mains to a battery supply, the switch-over moment should be visible as a quick blink – during a very short while the light source will be off.

CAUTION! In a case of SA (M) luminaire version, but wired as A (NM) one, the lamp behaves according to A (NM) typical behaviour.