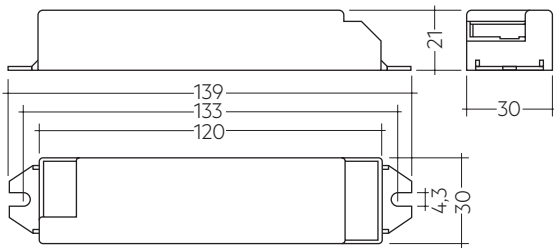
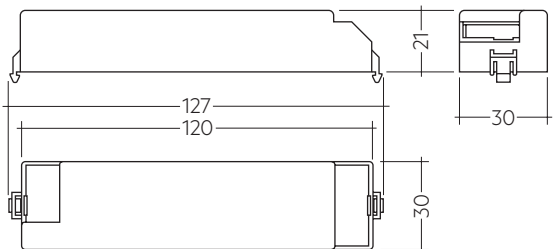


Non-maintained and maintained emergency lighting LED driver for manual testing for LED modules  
 with a forward voltage of 2.4 to 6.8 V for luminaire installation  
 3 h rated duration

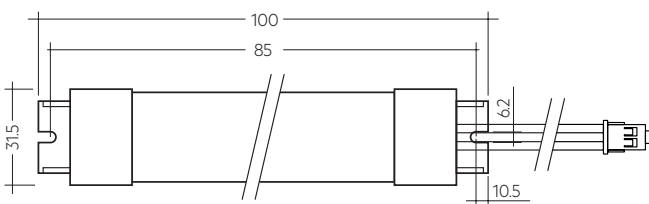
## EM pLED ONC 3h Installation and wiring instructions



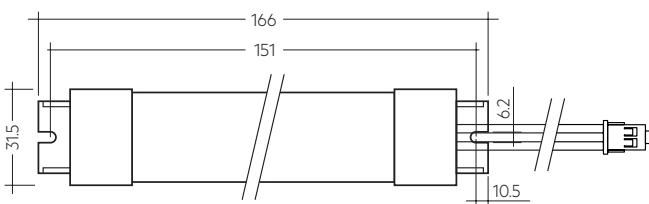
Screw-fix



Clip-fix



1S1P



1S2P

### Description

EM pLED ONC is designed for use in emergency luminaires in conjunction with dedicated emergency LED modules or dedicated LEDs on an LED module. It can be used as single LED driver for maintained or non-maintained emergency applications. It is compatible with LED light modules for spotlighting or linear LED modules for compact luminaires. These modules are approved to IEC / EN 61347-2-7 optimized for the use with the associated LiFePO<sub>4</sub> batteries. The EMpLED ONC gives you the freedom to manufacture dedicated emergency luminaires and as well convert luminaires to comply with the relevant parts of IEC / EN 60598-2-22.

### Technical data EM pLED ONC

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
LED module forward voltage range	2.4 – 6.8 V
Output current	see datasheet
Starting time	< 0.5 s from detection of emergency event
Overvoltage protection	320 V (for 48 h)
U-OVT (including open- / short-circuit and double load)	11 V
Max. open circuit voltage	11 V
Battery charging time	24 h
Ambient temperature range $t_a$	-25 ... + 55 °C
Max. casing temperature $t_c$	75 °C
Mains voltage changeover threshold	according to EN 60598-2-22
Mains surge capability (between L – N)	1.2 kV
Mains surge capability (between L/N – PE)	2.4 kV
Type of protection	IP20
Lifetime	up to 50,000 h
Guarantee (conditions at <a href="http://www.tridonic.com">www.tridonic.com</a> )	4 years
Dimensions LxWxH	179 x 30 x 21 mm

### Ordering data

Type	Article number	Packaging carton	Packaging Pallet	Weight per pc.
<b>EM pLED ONC 231 LiFePO<sub>4</sub> SCREW KIT</b>	<b>89801203</b>	1 pc(s).	400 pc(s).	0.63 kg
<b>EM pLED ONC 233 LiFePO<sub>4</sub> SCREW KIT</b>	<b>89801202</b>	1 pc(s).	480 pc(s).	1.37 kg
<b>EM pLED ONC 231 LiFePO<sub>4</sub> CLIP KIT</b>	<b>89801201</b>	1 pc(s).	400 pc(s).	0.63 kg
<b>EM pLED ONC 233 LiFePO<sub>4</sub> CLIP KIT</b>	<b>89801200</b>	1 pc(s).	480 pc(s).	1.37 kg

### Ordering note

The packaging of one carton includes 5 emergency lighting LED drivers and 5 batteries for 3 h duration.

### Battery (included)

Type	Article number	Number of cells	Type	Capacity	Case temperature range
<b>LiFePO<sub>4</sub> cells – stick</b>					
<b>Accu-LiFePO<sub>4</sub> 3.3Ah 1S1P</b>	<b>05529134<sup>①</sup></b>	1 x 1	stick	3.3 Ah	+5 °C to +55 °C
<b>Accu-LiFePO<sub>4</sub> 6.6Ah 1S2P</b>	<b>05529822<sup>②</sup></b>	1 x 2	stick	6.6 Ah	+5 °C to +55 °C

<sup>①</sup> For replacements please order 28005171.

<sup>②</sup> For replacements please order 28005424.

## Technical data Accu-LiFePO4 3.3 Ah

International designation	IFpR 27/67
Battery voltage/cell	3.2V
Cell type	26650
Case temperature range to ensure	
4 years design life	+5 °C to +55 °C
6 years design life	+5 °C to +45 °C
8 years design life	+5 °C to +35 °C
Max. short term battery case temperature (shorter than 1 month over the battery lifetime)	70 °C
Max. number discharge cycles	50 cycles total
Max. storage time	12 months at +5 °C to +25 °C

## Components matrix

Type	Article number	EM converterLED		Battery	
		Type	Article number	Type	Article number
EM pLED ONC 231 LiFePO4 SCREW KIT	89801203	EM pLED ONC 231 LiFePO4 SCREW	89801207	Accu-LiFePO4 3.3Ah 1S1P	05529134
EM pLED ONC 233 LiFePO4 SCREW KIT	89801202	EM pLED ONC 233 LiFePO4 SCREW	89801206	Accu-LiFePO4 6.6Ah 1S2P	05529822
EM pLED ONC 231 LiFePO4 CLIP KIT	89801201	EM pLED ONC 231 LiFePO4 CLIP	89801205	Accu-LiFePO4 3.3Ah 1S1P	05529134
EM pLED ONC 231 LiFePO4 CLIP KIT	89801200	EM pLED ONC 231 LiFePO4 CLIP	89801204	Accu-LiFePO4 6.6Ah 1S2P	05529822

Further information can be found in the respective datasheets on [www.tridonic.com](http://www.tridonic.com).

### Important

These instructions contain important safety information, read and follow them carefully. Tridonic will not accept any responsibility for injury, damage or loss, which may arise as a result of incorrect installation, operation, maintenance or disposal.

Isolate switched and unswitched mains and battery supply before installing or maintaining – high voltage will be present at LED terminals if the battery is not isolated.

High voltage insulation testing up to 500 V DC is only allowed between the line and neutral connected together and the earth.

### Note to the installer:

Please ensure this leaflet is made available to the user and/or maintenance engineer together with a test record card.

### Emergency Operation

After the switchover to emergency operation the EM pLED is detecting the total forward voltage of the connected LED modules and automatically adjusts the LED current.

### LED forward voltage

The total forward voltage of all the LED light modules operated in emergency mode is used for the decision which type of EM pLED should be used.

EM pLED ONC LiFePO4 forward voltage range:

2.4 – 6.8 V

The total forward voltage must be within the forward voltage range of the EM pLED.

### Maximum lead length

LED 3 m

Note: The length of LED leads to the LED module must not be exceeded. Note that the length of the EM pLED leads to the LED module will be added to the length of the leads from the LED driver to the EM pLED module when considering the lead length of the LED driver. Leads should always be kept as short as possible.

### Wiring guidelines

- EM pLED ONC 232 LiFePO4 50V:
  - The LED terminals, battery and indicator LED terminals are classified as SELV (output voltage < 60 V DC). Keep the wiring of the input terminals separated from the wiring of the SELV equivalent terminals or consider special wiring (double insulation, 6 mm creepage and clearance) when these connections should be kept SELV.
  - The output to the LED is DC but has high frequency content, which should be considered for good EMC compliance.
  - LED leads should be separated from the mains connections and wiring for good EMC performance.
  - Maximum lead length on the LED terminals is 3 m. For a good EMC performance keep the LED wiring as short as possible.
  - Maximum lead length for the indicator LED connection is 1 m. The indicator LED wiring should be separated from the LED leads to prevent noise coupling.
  - Battery leads are specified with 0.5 mm cross section and a length of 1.3 m
  - To avoid the damage of the control gear, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.)

To ensure that a luminaire containing LED emergency units complies with EN 55015 for radio frequency conducted interference in both normal and emergency mode it is essential to follow good practice in the wiring layout.

Within the luminaire the switched and unswitched 50Hz supply wiring must be routed as short as possible and be kept as far away as possible from the LED leads. Through wiring may affect the emc performance of the luminaire.

For maintained operation in conjunction with a LED driver:  
The length of LED leads must not be exceeded. Note the length of the EM pLED leads to the LED module adds to the length of the leads from the LED driver to the EM pLED module when considering the lead length of the LED driver.

## General notes

### Safety

This module and associated luminaire has both an unswitched mains electricity supply and a switched supply as well as an internal battery. To ensure safety disconnect all three before installation or maintenance work begins (isolate battery by disconnecting the lead).

The LiFePO<sub>4</sub> batteries used together with this module contain an electrolyte which can be harmful to eyes and poisonous on open wounds. Care must be taken when handling the batteries, to avoid puncturing the case. If electrolyte comes into contact with skin wash immediately in water.

Batteries must not be subjected to excessive charge or discharge currents. When working with batteries take care not to short circuit them with tools or jewellery etc.

### Installation

Installation must be carried out by a competent person, in accordance with the national or local wiring regulations and BS 5266 Part 1; Code of Practice for Emergency Lighting. If in any doubt consult a qualified electrician.

Ensure that voltage and frequency requirements are compatible with the available supply.

Observe the correct polarity when making electrical connections.

### Maintenance

The module does not contain serviceable parts and should not be opened. Doing so will invalidate the warranty.

### Disposal of Batteries

Do not incinerate batteries. Whilst disposing of small quantities is possible with little or no risk, large numbers require expert handling. Consult the relevant Local Authority Health and Safety Officers.

### User Obligation

Every care is taken by Tridonic, in the design and construction of its products, to ensure that as far as is reasonably practical, the products, when properly used are safe, and without risk to health.

The health and safety at work act, however, imposes upon the users of a company's products, an obligation to ensure that all personnel involved with the installation, handling, use or disposal of the products are acquainted with the information provided by the company, and are made fully aware of any precautions that need to be taken.

### Modification

Do not attempt to modify this product. Any modification will invalidate the safety/approval marks, and may render the product unsafe. Tridonic will not accept responsibility for any modified product, or any injury damage, or loss, which may arise as a result of unauthorised modification.

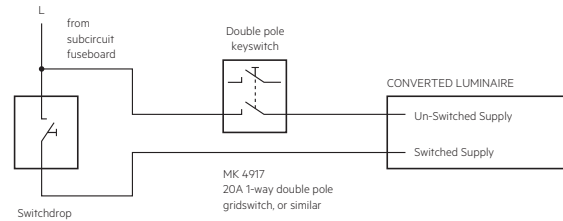
### Change of Specification

Tridonic reserve the right to change specifications without prior notification or public announcement.

## Testing

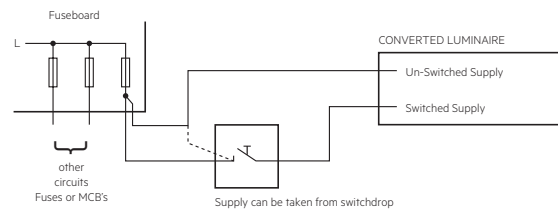
### Test Circuit

To test luminaires converted with this module it is only necessary to provide a method for disconnecting the unswitched supply.



### Keyswitch Testing

The unswitched mains supply to this module should be derived from a circuit which is continuously energised. Steps must be taken to ensure that this supply is not inadvertently interrupted at any time. Switches associated with this supply should either be sited in a position inaccessible to unauthorised persons, or be of a tamper proof type.



### Fuseboard Testing

### Testing

Emergency Lighting must be regularly tested to ensure that it is working and that the batteries achieve the specified duration. Results of testing should be recorded on a test record card. Failure to do so will invalidate any warranty claims. BS 5266 specifies the following tests.

- **Daily:**  
The charge indicator (LED) should be checked to see if it is alight.
- **Monthly:**  
To check correct function, the converted luminaire should be energised from its battery for a short period.  
To ensure the full functionality is recommended to expand the function test duration to approximately 30 seconds.
- **Yearly:**  
The converted luminaire should be energised from its battery for a period of 3 hour duration.

Local regulations can deviate from the above and need to be fulfilled.

Batteries should be replaced after 4 years or if the luminaire does not meet its rated duration.

Because the failure of the supply could occur immediately after testing, the operational tests above should be carried out at times of least risk. It is important that prior to the tests the unswitched supply must have been connected for at least 24 hours. Test by disconnecting the supply as described in "Test Circuit" which will simulate mains failure.