OMNI-LED-LFP™ | LED EMERGENCY CONVERSION MODULE & LiFePO4 BATTERY

Product description

Omni-LED-LFP™ is a range of Maintained emergency lighting conversion modules for use with One-LUX LiFePO4 batteries.

They are housed in a compact low-profile enclosure and suitable for use in either internal or remote self-contained applications.

Their constant-power emergency driver technology with a SELV isolated output will run almost any LED lamp or array in the range of 10V – 200VDC including some GU10 and Linear tubes, so making it easy to produce an emergency version of your existing LED luminaire without the need for separate 'emergency' LEDs or connectors. They are available with 2W to 4W of emergency power and for 1 or 3 hour autonomy.

Features

- Supplied as a kit with a LiFePO4 battery, end caps and a 500mm high-brightness indicator LED.
- Available with DALI Self-Test or "One Connect+" Casambi wireless functionality
- Wide range of lamp voltage and power options available
- 3-pole switching provides full isolation of lamp connections and mains driver's power supply during emergency operation
- Universal module with user-selectable 1 or 3 hour autonomy
- Constant-current charger with short-circuit protection and polarised battery socket
- Batteries include voltage, current and thermal protection with UN38.3 approval.
- Input for optional manual low-voltage emergency test switch
- Additional side fixing points allows mounting in restricted spaces
- Designed and manufactured in Great Britain
- Complies with: EN61347-1, EN61347-2-7, EN61347-2-13, EN55015, EN61000-3-2, EN61547, UN38.3 (Batteries)
- Suitable for luminaires conforming to EN60598-2-22
- Suitable for installations to EN50172

Common Technical Data	
Input Supply Voltage	230V +/- 10%
Supply Frequency	50/60 Hz
Output Voltage of the Range	10 - 200Vdc
Operating Ambient Temperature	0°C - 50°C (0°C - 45°C 4W DST)
Battery Temperature Range	0°C - 55°C
IP Rating	IP20
Omni-LED Module Weight	90g

ONE CONNECT+

RoHS CE

LED Voltage	Emergency Power	Omni-LED Module	LiFePO4 Battery	Battery End Caps*	Kit Code
12 - 55V	3W	OL55/3W/M3/LFP	LFP/3.2V/4.4Ah/SS	E/SUB-C	OL55/3W/M3/LFP/SS
			LFP/3.2V/4.4Ah/PS	N/A	OL55/3W/M3/LFP/PS
			LFP/3.2V/4.5Ah/SS	E/18700	OL55/3W/M3/LFP/3SS
12 - 55V	4W	OL55/4W/M3/LFP	LFP/6.4V/3.6Ah/SS	E/26650	OL55/4W/M3/LFP/SS
10 - 80V	2W	OL80/2W/M3/LFP*	LFP/3.2V/3.6Ah/SC	E/26650	OL80/2W/M3/LFP/SC
55 - 90V	4W	OL90/4W/M3/LFP	LFP/6.4V/3.6Ah/SS	E/26650	OL90/4W/M3/LFP/SS
90 - 200V	4W	OL200/4W/M3/LFP	LFP/6.4V/3.6Ah/SS	E/26650	OL200/4W/M3/LFP/SS

For DALI Self-Test versions add '/DST' to the product codes above or for Casambi wireless add '/CW'.

See supplementary instructions for /DST and /CW versions.

Product specifications may be subject to change without prior notice

TECHNICAL INFORMATION

Model Number	Mains Input Characteristics - Charging Mode				
	Autonomy Setting	Nominal Circuit Watts* Initial Charge/ Charged state	Input Current Nominal/ Range	Inrush Current	Power Factor
OL55/3W/M3/LFP	1 hour	0.9W/ 0.5W	8mA/ (7-9mA)	4A pk	0.57
	3 hours	1.4W/ 0.5W	11.3mA/ (10-12mA)	4A pk	0.57
OL80/2W/M3/LFP	1 hour	0.9W/ 0.5W	8mA/ (7-9mA)	4A pk	0.57
	3 hours	1.4W/ 0.5W	11.3mA/ (10-12mA)	4A pk	0.57
OL55/4W/M3/LFP, OL90/4W/M3/LFP OL200/4W/M3/LFP	1 hour	1.2W/ 0.7W	9mA/ (8-10mA)	6.5A pk	0.65
	3 hours	1.9W/ 0.7W	13mA/ (12-14mA)	6.5A pk	0.65

* This figure may be used for LENI 'Parastic Power' calculations.

Model Number	Emergency Mode								
	Nominal Battery Capacity (1 hour/ 3 hours)	Battery Volts Range (Charge Mode)	Battery Charge Current Range	Battery Volts Range Min/ Nom/ Max (Discharge Mode)	Battery Discharge Current Nominal/ Range	DDP Voltage	LED Voltage Range	Max Output Power	Uout Max (open Circuit)
OL55/3W/M3/LFP	2.2Ah/ 4.4Ah	2 - 8V	0 - 230mA	2V/ 3.2V/ 3.6V	1.05A/ (0.8 - 1.2A)	2.8V (min)	12 - 55V	3W	80V
OL55/4W/M3/LFP	2.2Ah/ 3.6Ah	4 - 10V	0 - 230mA	4V/ 6.4V/ 7.2V	0.75A/ (0.725-0.775A)	6.0V (min)	12 - 55V	4W	80V
OL80/2W/M3/LFP	2.2Ah/ 3.6Ah	2 - 8V	0 - 230mA	2V/ 3.2V/ 3.6V	0.75A/ (0.725-0.775A)	2.8V (min)	6 - 80V	2W	100V
OL90/4W/M3/LFP	2.2Ah/ 3.6Ah	4 - 10V	0 - 230mA	4V/ 6.4V/ 7.2V	0.75A/ (0.725-0.775A)	6.0V (min)	55 - 90V	4W	100V
OL200/4W/M3/LFP	2.2Ah/ 3.6Ah	4 - 10V	0 - 230mA	4V/ 6.4V/ 7.2V	0.75A/ (0.725-0.775A)	6.0V (min)	90 - 200V	4W	260V

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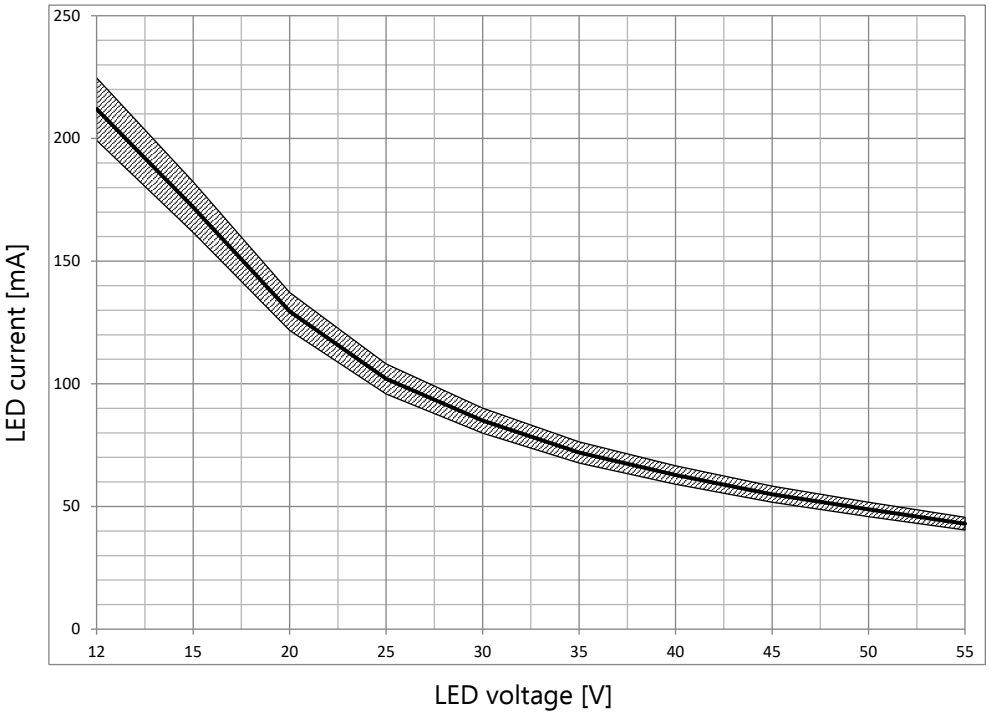
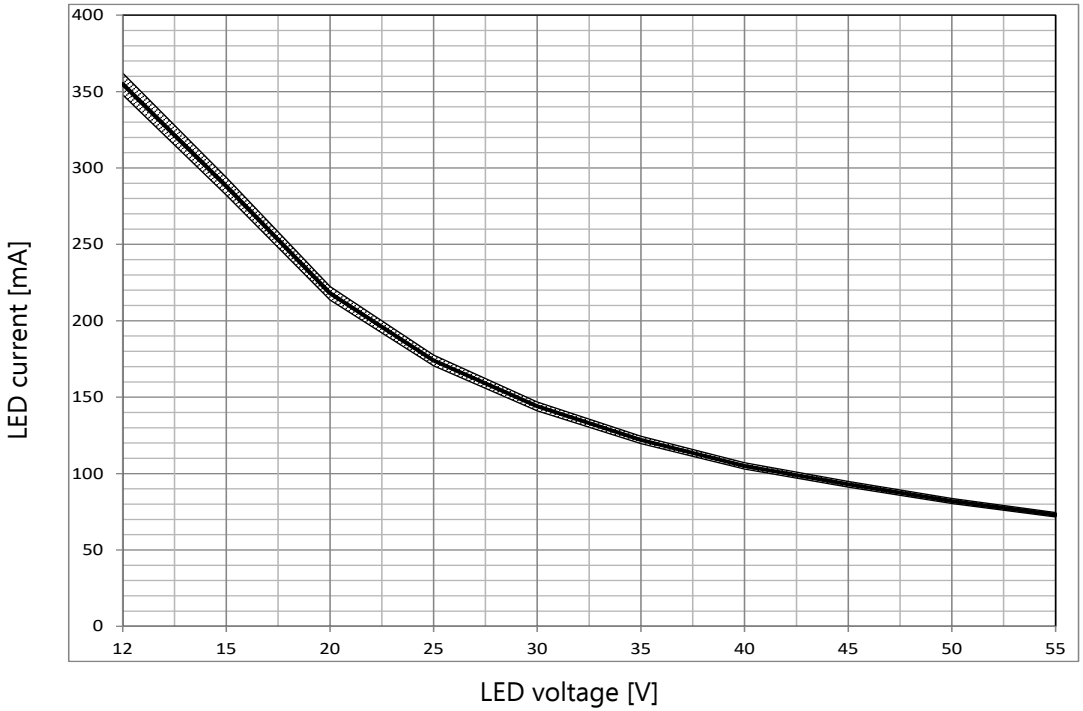
TECHNICAL INFORMATION

LED lamp output - Shaded area indicates typical forward voltage (Vf) vs forward current (If) expected throughout discharge duration.

OL55/3W (&/DST)



OL55/4W (&/DST)



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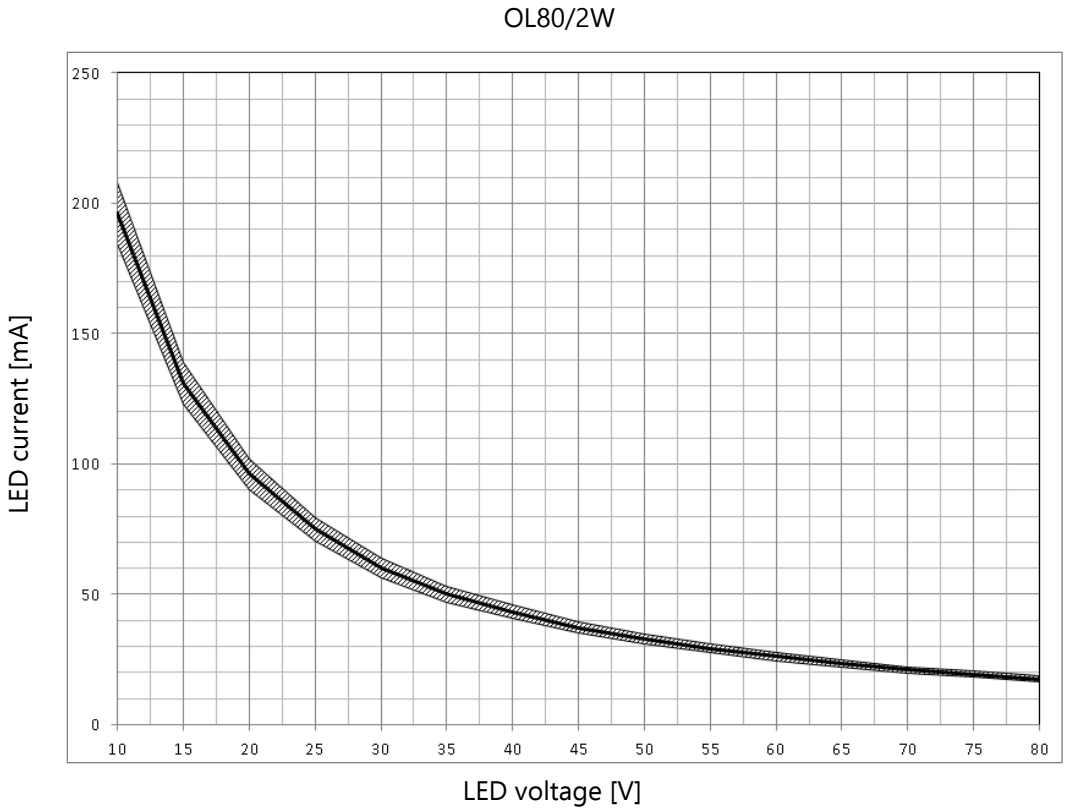

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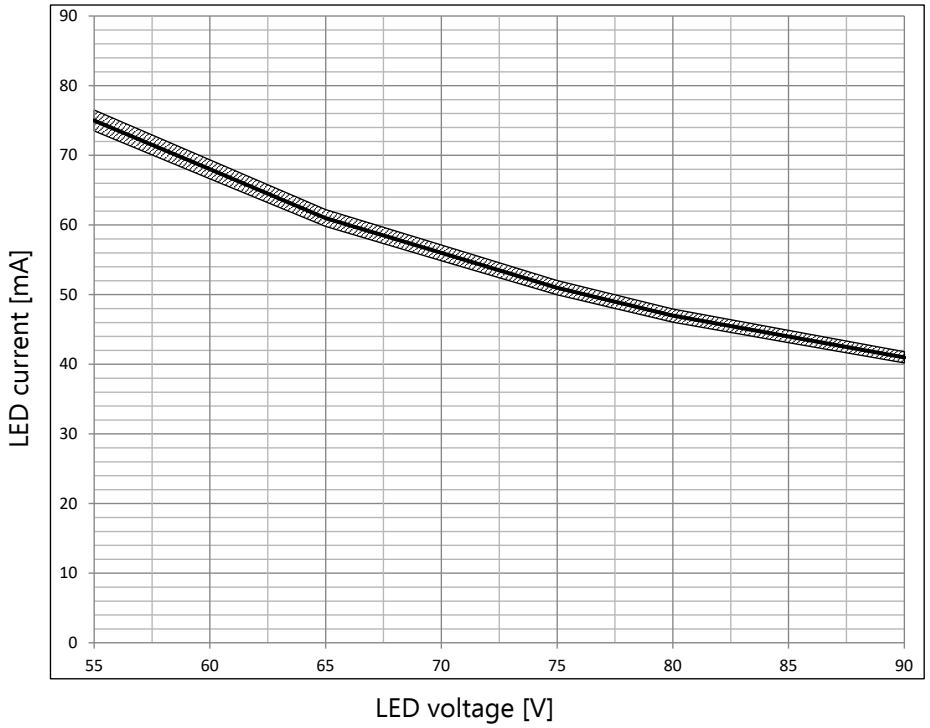
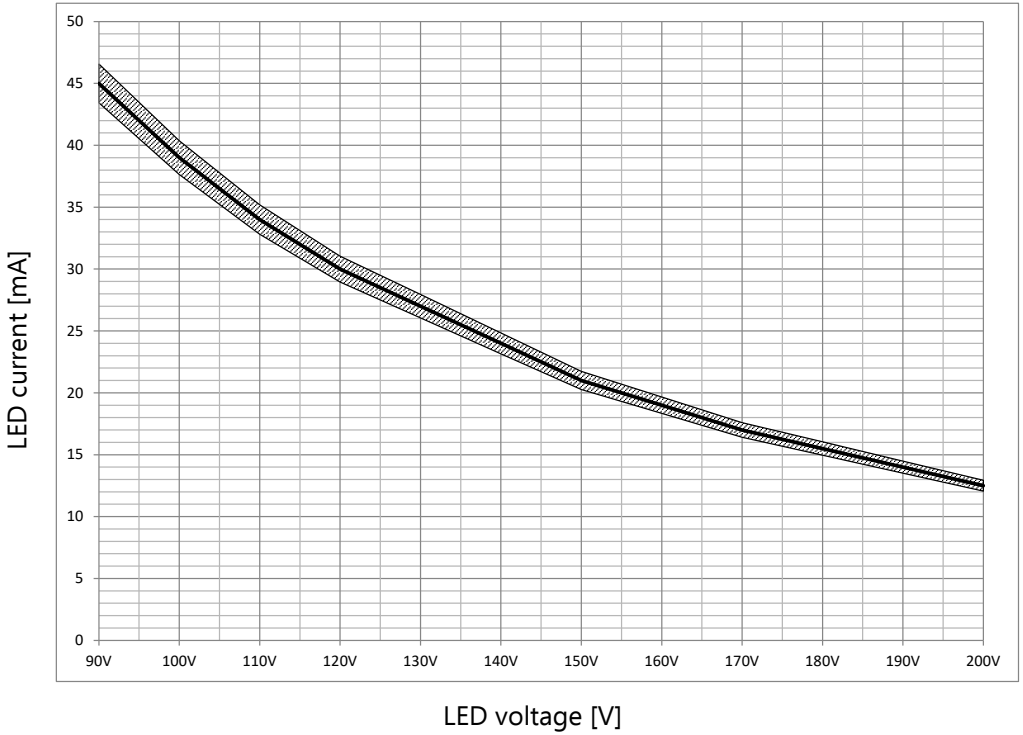
TECHNICAL INFORMATION

LED lamp output - Continued.

OL90/4W (&/DST)



OL200/4W (&/DST)



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LITHIUM IRON PHOSPATE (LiFePO4) BATTERIES

Applicable LiFePO4 battery packs to Omni-LED models (Available as module and battery kits or remote box solutions)

		Battery Options						
		1 x 22650 Cell	2 x 22650 Cell Stick	1 x 26650 Cell	2 x 22650 Cell Pack	3 x 18650 Cell Stick	2 x 22650 Cell Stick	2 x 26650 Cell Stick
Model Number		LFP3.2V/2.2Ah	LFP3.2V/4.4Ah/SS	LFP3.2V/3.6Ah	LFP3.2V/4.4Ah/PS	LFP3.2V/4.5Ah/SS	LFP6.4V/2.2Ah/SS	LFP6.4V/3.6Ah/SS
Battery Dimensions **Length x Width, Height**		66 x 23 x 28mm	132 x 23 x 28mm	66 x 27 x 30mm	68 x 46 x 28mm	200 x 19 x 22mm	132 x 23 x 28mm	132 x 27 x 30mm
With End Caps Length x Width, Height, (Fixing centres)		106 x 28 x 31mm (84) mm	172 x 28 x 31mm (150) mm	106 x 31 x 31mm (86) mm	N/A	224 x 23 x 26mm (212) mm	172 x 28 x 31mm (150) mm	172 x 31 x 32mm (152) mm
OL55/3W/M3/LFP	1 hour	✔						
	3 hours		✔		✔	✔		
OL55/4W/M3/LFP	1 hour						✔	
	3 hours							✔
OL80/2W/M3/LFP	1 hour	✔						
	3 hours			✔				
OL90/4W/M3/LFP	1 hour						✔	
	3 hours							✔
OL200/4W/M3/LFP	1 hour						✔	
	3 hours							✔

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INSTALLATION & OPERATION (Standard Non-DST Versions)

Disclaimers

This product and its associated accessory products have been manufactured and designed to comply with the requirements of EN60598-2-22 in addition to the standards detailed on page 1 of this document. Operation beyond the parameters specified in this document and the associated standards may result in reduced performance and ultimate premature failure, with the warranty made void. It is the users responsibility to ensure full compitability of the Omni-LED™ product for the intended application and for compliance of the emergency conversion to relevant Standards. The user should be aware of the environment to which the luminaire and these components are used and follow the luminaire manufacturer's specifications. The Omni-LED modules are not intended for use in high-risk task area luminaires. Installation should be in line with the following guides. Please contact our Technical department if you are in any doubt.

Precautions

This product should be installed as per the following guidelines, electric shock or damage to the product may result if incorrectly installed. The luminaire should be installed by a qualified and competent electrician. If the luminaire is to be mounted in an external location, consider the battery as temperatures below 0°C may be frequent in cold months. In this case, the design life of 4 years will be compromised and more frequent battery replacements may be needed. Likewise, if the luminaire is situated in a hot environment where the temperature is maintained at 25°C or above, or sited next to large panes of glass in which case it may be exposed to thermal magnification.

It is recommended that IP65 luminaires are avoided for use in internal applications as undue thermal stress may result.

Installation notes

Wire Preparation: maximum strip length 10mm (recommended 6mm)
Min/max Conductor sizes: 0.5 - 1.5 mm^2.

Best effort should be made to keep the Omni-LED and battery away from direct sources of heat, i.e. mains LED drivers and LED lamps. Avoid obstructing airflow around the sides of the Omni-LED and other electronic products. Allow a clearance of 10mm or more wherever possible.

The battery supplied is fitted with a non reversable plug to avoid reverse polarity connection and care should be taken when plugging it in.

If it is anticipated that the un-switched supply may be interrupted, it is imperative that the battery is left disconnected and commissioning is delayed until the supply is stable.

Lamp Connections should be kept as short as possible and under no circumstances exceed 1m for self-contained luminaires.
The Omni-LED product should be secured using both fixing points and the use of M4x 6mm screws are recommended for most applications.

Test Switch inputs - Emergency Test Function (Optional)
This product offers the facility to perform a function test for the duration which the switch is held. A non-latching push-to-make switch should be used as shown in the wiring diagram.

EMC considerations: Mains input connections should be as far from the lamp leads as possible and no ideally less than 10cm. Mains input wires should be as short as possible and run direct from input terminations to the Omni-LED product; they should not run alongside the case.

Other EMC tips:

- Keep the lamp wires raised off any earthed metalwork
- Twist mains leads together when 'looping' or 'through wiring'

The switched and un-switched lives may be joined together for continuous operation (un-switched) applications.

The symbol ◎ confirms the controlgear is built-in type, but accessible parts (excluding terminals) are insulated from live parts by double/reinforced insulation.

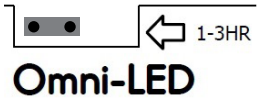
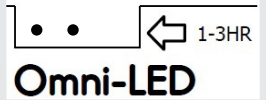
The unit employs self-resetting protection against short-circuit of battery terminals. Normal charging will resume automatically once a fault is removed. The mains supply should always be disconnected when servicing the luminaire.

If other devices are connected to the un-switched supply, please be aware that to maintain compliance with EN60598-2-22 that in event of its failure it will not affect other devices on the same circuit. In this case we recommend the use of separate fused terminal blocks to each device.

Internal fuses used within Omni-LED product are not user serviceable.

Omni-LED™ modules are supplied with a small plastic selector fitted, which denotes 3 hour operation as standard. If 1 hour emergency operation is required with the correct battery, the selector should be removed.
Warning! Only the LiFePO4 battery supplied with the Omni-LED™ module by One-LUX may be used. Permanent battery damage can occur if the 3 hour setting is used with the incorrect battery.
See "Applicable LiFePO4 battery packs to Omni-LED™ models" table for cross reference.
Emergency Output Characteristics' can be seen from page 2.

Autonomy Selection Information

Emergency Duration	Jumper Setting
3 Hours (Default Setting)	
1 Hour (Remove plastic jumper)	

Installation particulars for end user

Commissioning: Once the luminaire has been installed in line with the manufacturer's recommendations, the battery should be allowed to charge for a minimum period of 24 hours before testing for its rated duration.
If the luminaire has been stored for a number of months, it may be necessary to repeat the charge/discharge process several times to re-condition the battery.
After successful commissioning, the battery should be marked with the date of commission.
Routine test and inspection should be performed in accordance with EN50172 or otherwise local legislation. Short discharge periods of around 5 – 10 minutes each month for the purposes of inspection will not adversely affect One-LUX batteries and should be considered as a maintenance exercise for the battery.
Regular full discharge cycles in excess of once per mounth may adversely affect the design life of the battery. Replacement batteries are available if the rated emergency duration is no longer acheived.

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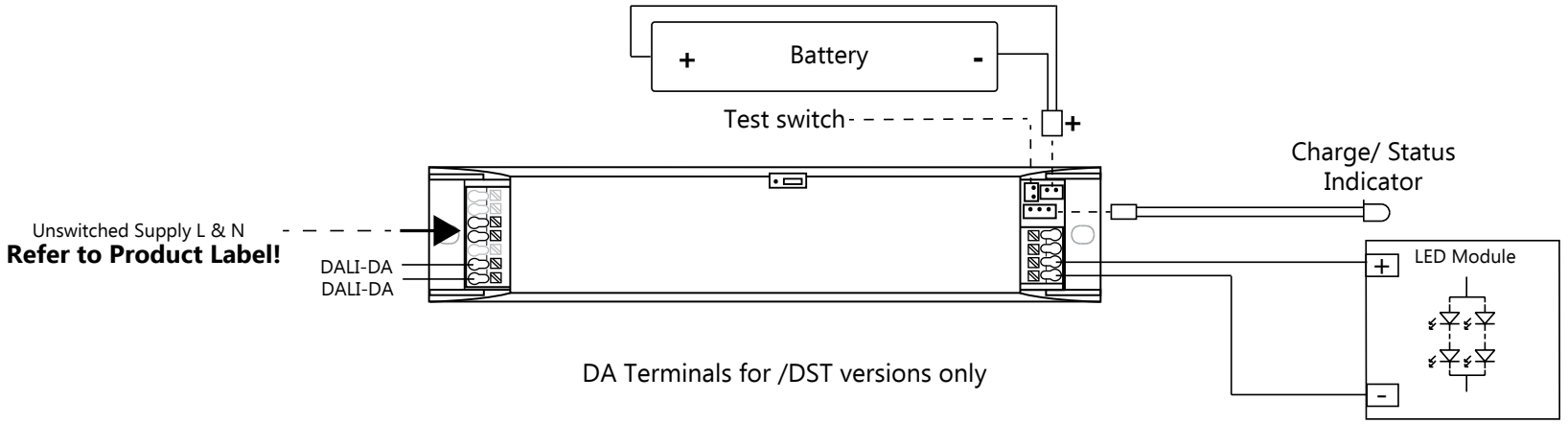
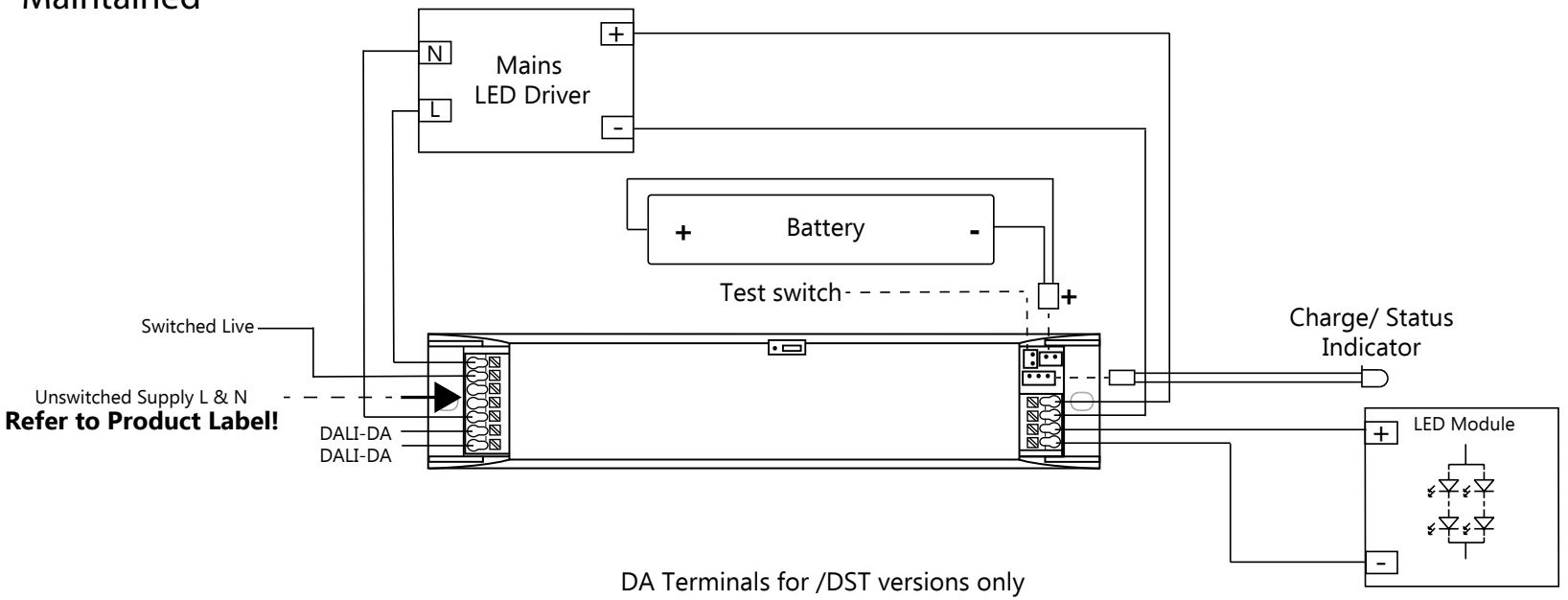
INSTALLATION & OPERATION - WIRING & CONNECTION DETAILS

Non-Maintained



Maintained



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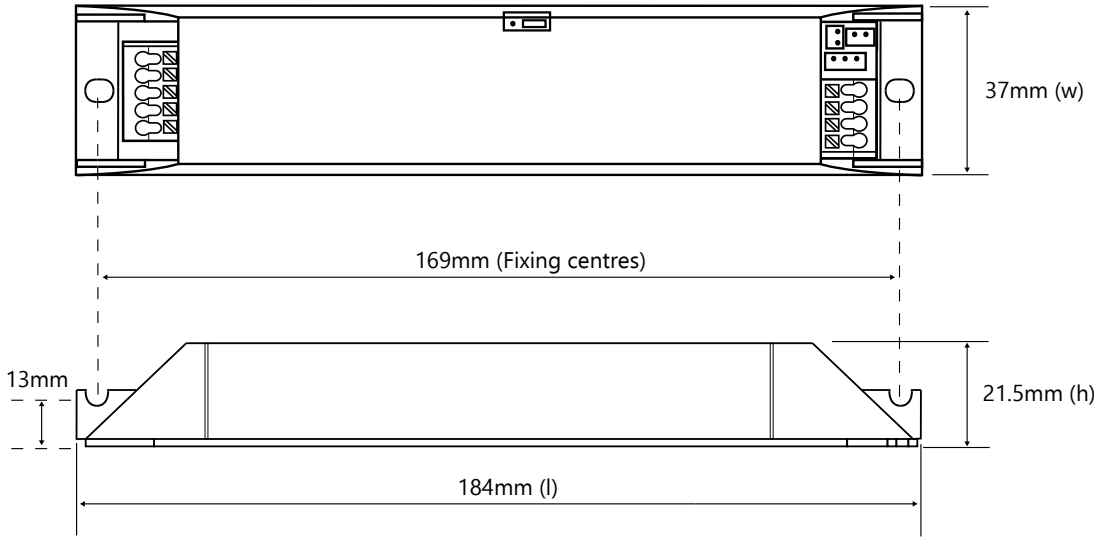
TECHNICAL INFORMATION

Enclosure Dimensions.



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