OMNI-LED™ | LED EMERGENCY CONVERSION MODULE

Product description

Omni-LED™ is a range of Maintained emergency lighting conversion modules housed in a compact low-profile enclosure and suitable for use in either internal or remote self-contained applications.

Their constant-power driver technology with a SELV isolated output range of 3V – 200VDC will run almost any LED lamp or array (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.

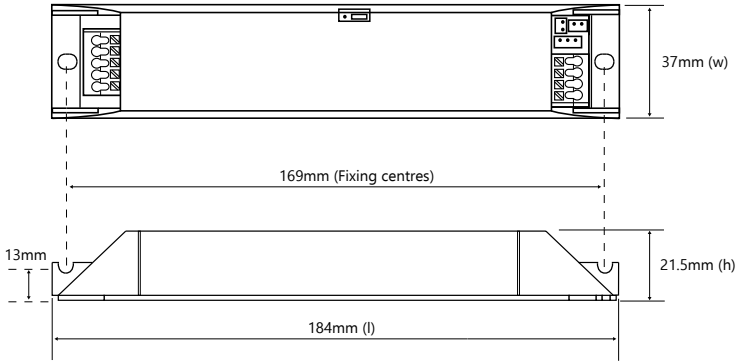
They are available in 2, 3 and 4 cell versions and compatible with both NiCd or NiMH batteries for 1 or 3 hour autonomy.

Features

- Emergency output power (Typical) : 1.5W (2-cell), 3W (3-cell), 4W (55V 4-cell), 3.5W (90V 4-cell) and 3W (200V 4-cell)
- 3-pole switching provides full isolation of lamp connections and mains driver's power supply during emergency operation (Compatible with most driver types up to 2A lamp current)
- Universal module with user-selectable 1 or 3 hour autonomy
- Constant-current charger with short-circuit protection and polarised battery socket
- Zero battery current in standby allows pre-connection for storage
- Input for optional manual low-voltage emergency test switch
- Additional side fixing points allows mounting in restricted spaces
- Operates High-brightness green charge LEDs. (250mm supplied. Other lengths available, please see accessories section for options)
- Designed and manufactured in Great Britain
- Complies with: EN61347-1, EN61347-2-7, EN61347-2-13, EN55015, EN61000-3-2, EN61547
- Suitable for luminaires conforming to EN60598-2-22

Common Technical Data	
Input Supply Voltage	230V +/- 10%
Supply Frequency	50/60 Hz
Output Voltage of the Range	3 - 200 Vdc
Maximum TC Point	2 & 3 Cell - 80°C/ 4 cell - 75°C
Ambient Temperature Range	0°C - 50°C
Battery Charge Time	24 Hours
IP Rating	IP20
Weight	90g

Model Number	Standard Pack Quantities	Weight
OL12/2/M3	50	5.0kg
OL55/2/M3	50	5.0kg
OL55/3/M3	50	5.0kg
OL55/4/M3	50	5.0kg
OL90/4/M3	50	5.0kg
OL200/4/M3	50	5.0kg



Accessories

A range of batteries and accessories are available, please refer to accessories section.

Product specifications may be subject to change without prior notice.

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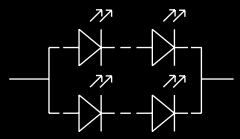


TECHNICAL INFORMATION

Model Number		Input Characteristics - Charging Mode			
	Autonomy Setting	Circuit Watts*	Input Current	Inrush Current	Power Factor
OL12/2/M3/ OL55/2/M3	1 hour	2.8W	0.03A	5A pk	0.45
	3 hours	3W	0.03A	5A pk	0.45
OL55/3/M3	1 hour	2.8W	0.03A	5A pk	0.44
	3 hours	4.2W	0.04A	5A pk	0.47
OL55/4/M3, OL90/4/M3, OL200/4/M3	1 hour	3.4W	0.04A	5A pk	0.45
	3 hours	4.8W	0.05A	5A pk	0.45

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

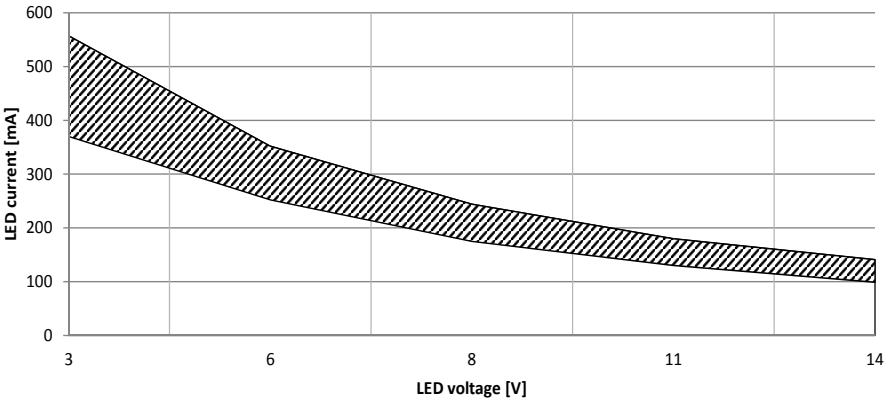
Model Number	Battery & Emergency Output Characteristics										
	Autonomy Setting	Battery Type	Number of Battery Cells	Battery Capacity	Battery Volts Range (Charge Mode)	Battery Charge Current	Battery Volts Range (Discharge Mode)	Battery Discharge Current Nominal/ Range	DDP Voltage	LED Voltage Range	Max Output Power **	Uout Max (open Circuit)
OL12/2/M3	1 hour	NiCd/ NiMH	2	1.6Ah	1.5 - 4V	75-95mA	2 - 2.8V	1.05A /(0.8 - 1.2A)	1.8V (min)	3 - 12V	2W	50V
	3 hours		2	4Ah	1.5 - 4V	140-260mA	2 - 2.8V	1.05A /(0.8 - 1.2A)	1.8V (min)	3 - 12V	2W	50V
OL55/2/M3	1 hour		2	1.6Ah	1.5 - 4V	75-95mA	2 - 2.8V	1.05A /(0.8 - 1.2A)	1.8V (min)	12 - 55V	2W	80V
	3 hours		2	4Ah	1.5 - 4V	140-260mA	2 - 2.8V	1.05A /(0.8 - 1.2A)	1.8V (min)	12 - 55V	2W	80V
OL55/3/M3	1 hour		3	1.6Ah	1.5 - 6V	75-95mA	3 - 4.2V	1.05A /(0.8 - 1.2A)	2.5V (min)	9 - 55V	3.4W	80V
	3 hours		3	4Ah	1.5 - 6V	140-260mA	3 - 4.2V	1.05A /(0.8 - 1.2A)	2.5V (min)	9 - 55V	3.4W	80V
OL55/4/M3	1 hour		4	1.6Ah	1.5 - 8V	75-95mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	12 - 55V	4.5W	80V
	3 hours		4	4Ah	1.5 - 8V	140-260mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	12 - 55V	4.5W	80V
OL90/4/M3	1 hour		4	1.6Ah	1.5 - 8V	75-95mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	55 - 90V	4W	100V
	3 hours		4	4Ah	1.5 - 8V	140-260mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	55 - 90V	4W	100V
OL200/4/M3	1 hour		4	1.6Ah	1.5 - 8V	75-95mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	90 - 200V	4W	220V
	3 hours		4	4Ah	1.5 - 8V	140-260mA	4 - 5.6V	1.05A /(0.8 - 1.2A)	3.5V (min)	90 - 200V	4W	220V

** See graphs on pages 3 and 4 for typical output power characteristics.

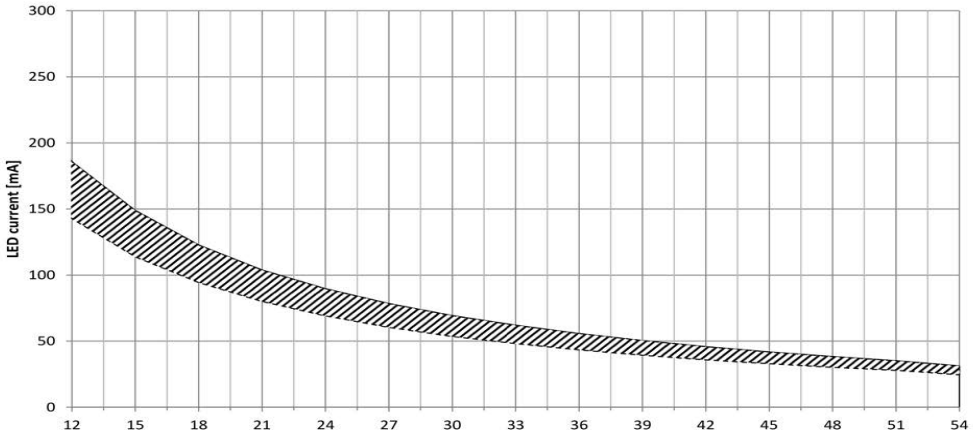
TECHNICAL INFORMATION

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

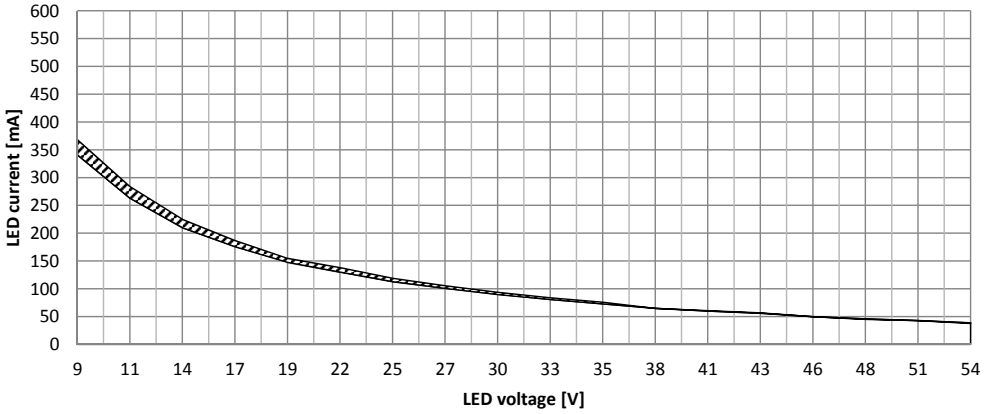
1.5W - OL12/2/x



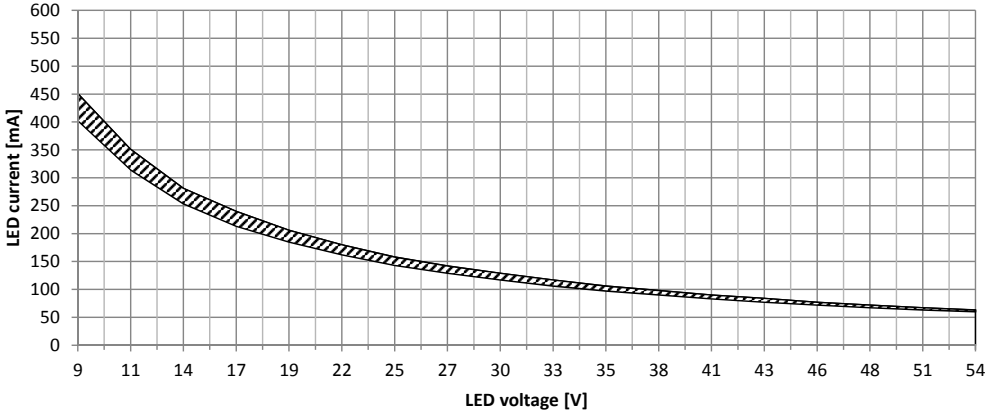
1.5W - OL55/2/x



3W - OL55/3/x



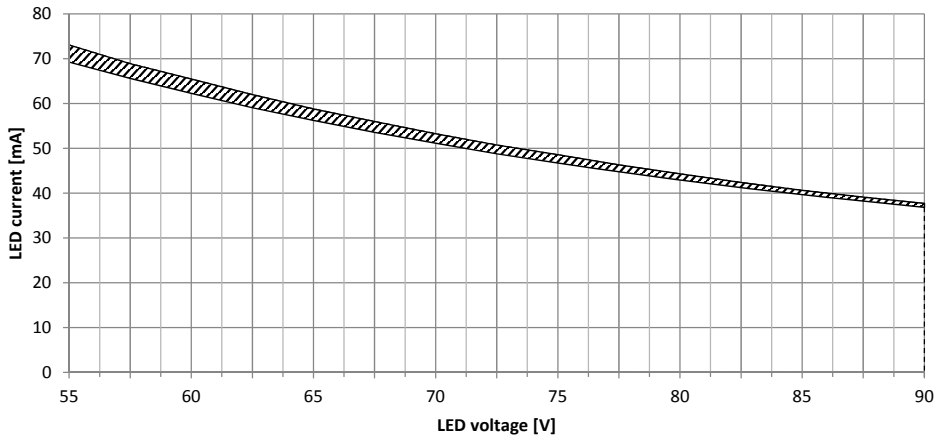
4W - OL55/4/x



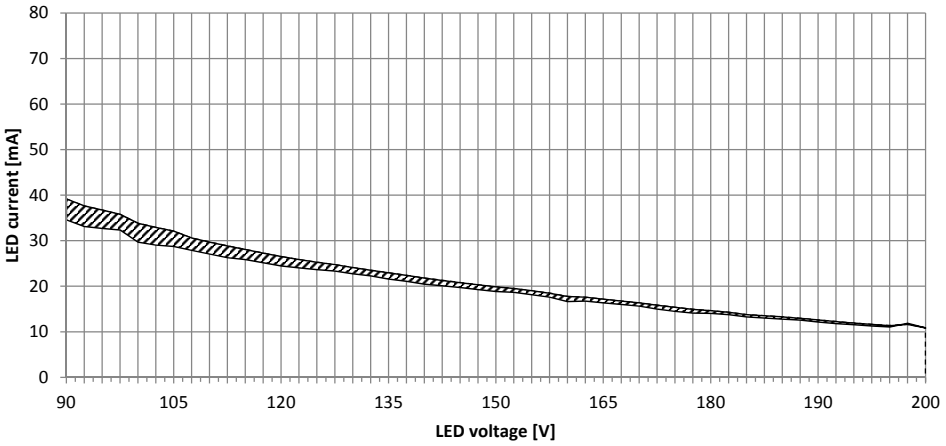
TECHNICAL INFORMATION

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

3.5W - OL90/4/x



3.0W - OL200/4/x



ACCESSORY ASSIGNMENT

Applicable battery packs to OMNI-LED models

Model Number		NiCd Batteries									NiMH Batteries		
	Autonomy Setting	NCD24SS	NCD24BS	NCD34SS	NCD34BS	NCD44SS	NCD44BS	NCD216SS	NCD316SS	NCD416SS	NMH24SS	NMH34SS	NMH44SS
OL12/2/M3, OL55/2/M3	1 hour							4					
	3 hours	4	4								4		
OL55/3/M3	1 hour								4				
	3 hours			4	4							4	
OL55/4/M3, OL90/4/M3, OL200/4/M3	1 hour									4			
	3 hours					4	4						4

Applicable number of end caps to relevant battery models

Model Number	NiCd Batteries						NiMH Batteries		
	NCD24SS	NCD34SS	NCD44SS	NCD216SS	NCD316SS	NCD416SS	NMH24SS	NMH34SS	NMH44SS
E	2	2	2						
E/Slotted	2	2	2						
E/18700							2	2	2
E/ Sub C				2	2	2			

ACCESSORIES | NICKEL CADMIUM (NiCd) BATTERIES

Product description

- High temperature Nickel Cadmium batteries for Emergency Lighting use
- Suitable for use with all One-LUX products
- 1-year warranty

Properties

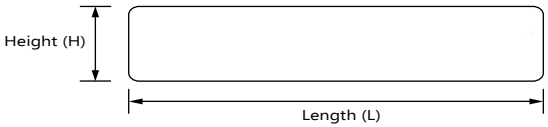
- Rated for continuous operation at 55°C and meets the 4 year design life as per Annex A of EN60598-2-22
- Complies with IEC61951-1
- Supplied with suitable connectors
- Available in custom configurations
- 4Ah 'D' size cells
- Other capacities available
- Refer to battery datasheet for further information

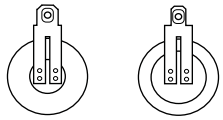
Common Technical Data	
Absolute Maximum Temperature	70˚C
Maximum Continuous Temperature	55˚C
Minimum Ambient Temperature	5˚C
Charge Requirements	C/20 for 24 hours Constant Current (CC)
Storage	0-25˚C for 12 months
Disposal at registered treatment facility only	

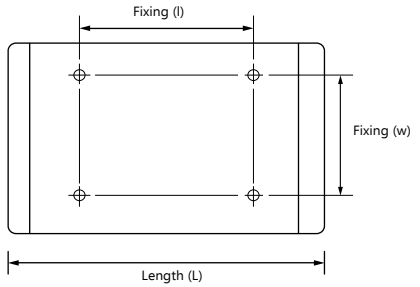
Table of Dimensions									
Dimensions	NCD24SS	NCD24BS	NCD34SS	NCD34BS	NCD44SS	NCD44BS	NCD216SS	NCD316SS	NCD416SS
Length (L)	116mm	68mm	175mm	102mm	234mm	136mm	86mm	131mm	175mm
Width (W)	34mm	63mm	34mm	63mm	34mm	63mm	23mm	23mm	23mm
Height (H)	34mm	36mm	34mm	36mm	34mm	36mm	23mm	23mm	23mm
Fixing (l)	n/a			32mm		64mm			
Fixing (w)		40mm		40mm		40mm			
IEC Cell Size	'D'						'Sub-C' (SC/Cs)		

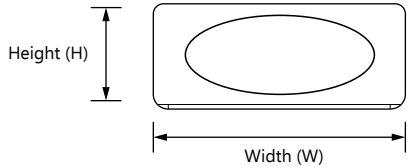
NiCd Batteries - Ordering Information								
Product Code	NCD24SS	NCD34SS	NCD34BS	NCD44SS	NCD44BS	NCD216SS	NCD316SS	NCD416SS
Box Quantity	40	30	30	20	22	140	60	60
Weight	11kg	12kg	13kg	10.8kg	12kg	14.5kg	10kg	12kg

NiCd Cable Assemblies	Connector Type	Wire Length	Connector Dimensions
AMP battery leads with JST connector	Mini JST plug to Amp 'mate-n-lok' (male)	250mm	N/A N/A
NiCd battery leads with JST connector	Mini JST plug to Red & Black wires with sockets	500mm	4.8mm x 0.8mm 6.3mm x 0.8mm
NiCd link wire (Sold separately)	White wire (female/female)	100mm	6.3mm x 0.8mm (positive) 4.8mm x 0.8mm (negative)









CE

ACCESSORIES | NICKEL METAL HYDRIDE (NiMH) BATTERIES

Product description

- High temperature Nickel Metal Hydride batteries for emergency lighting use
- Suitable for use with all One-LUX products
- 1-year warranty

Properties

- Rated for continuous operation at 50°C and meets the 4 year design life as per Annex A of EN60598-2-22
- Complies with IEC61951-2
- Supplied with suitable connectors
- Available in custom configurations
- 4Ah '18700' size cells
- Other capacities available
- Refer to battery data sheet for further information

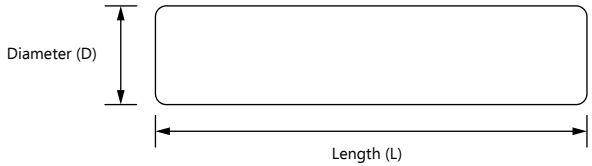
Common Technical Data	
Absolute Maximum Temperature	70˚C
Maximum Continuous Temperature	50˚C
Minimum Ambient Temperature	5˚C
Charge Requirements	C/20 for 24 hours Constant Current (CC)
Storage	0-25˚C for 6 months
Disposal at registered treatment facility only	

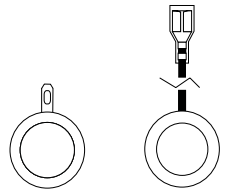
Table of Dimensions			
Dimensions	NMH24SS	NMH34SS	NMH44SS
Length (L)	140.5mm	214.5mm	284mm
Diameter (D)	20mm	20mm	20mm
IEC Cell Size	'18700'		

NiMH Batteries - Ordering Information			
Product Code	NMH24SS	NMH34SS	NMH44SS
Box Quantity	50	45	54
Weight	7kg	11kg	14.5kg

NiMH Cable Assemblies	Connector Type	Wire Length	Connector Dimensions
NiMH battery leads with JST connector (Sold separately)	Mini JST plug to Red & Black wires with spade & socket	700mm	Red 4mm (socket) Black 3.5mm (spade)
NiMH link wire (Sold separately)	Black wire (male/female)	300mm	3.5mm & 4mm (spade & socket)

Nickel Metal Hydride (Ni-MH)





ACCESSORIES

BATTERY END CAPS

Product description

- End caps suitable for use with 'stick' D size batteries
- End cap suitable for use with 'stick' Sub-C batteries
- End cap suitable for use with 'stick' 18700 Nickel Metal Hydride batteries

Properties

- Provides a convenient and secure mounting option for cylindrical batteries
- Moulded in UL94-V0 rated plastic
- 'E' version offers slide together feature to produce secure side-by side configuration
- Link wires available separately
- Slotted for tag connection or outlet for pre-soldered connections

NiCd Batteries - Ordering Information				
Product Code	E	E/Slotted	E/18700	E/SubC
Fixing Centres when fitted	Battery Length (L) + 20mm	Battery Length (L) + 17mm	Battery Length (L) + 16mm	Battery Length (L) + 19mm
Maximum Length when fitted	Battery Length (L) + 37mm	Battery Length (L) + 34mm	Battery Length (L) + 23mm	Battery Length (L) + 40mm

INDICATOR LEDs

Product description

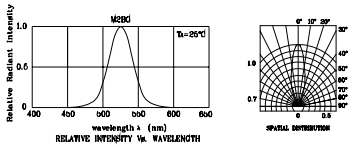
- High intensity 30° beam green LED
- Available with 250mm, 500mm and 750mm length leads
- Used in conjunction with emergency control gear to indicate that the battery is charging

Properties

- Narrow beam, high intensity – ideal for use behind diffusers even with the main lamp on
- Suitable for push wire connectors
- Suitable for standard T1 ¾ (5mm) LED mounts (not supplied)
- 250mm LED indicator supplied. Other sizes are available to be ordered separately.

LED Indicator - Technical Data	
Forward Voltage (Vf)	3.2V nominal
Forward Current (If)	30mA maximum
Dominant Wavelength	535nm
Grey Wire	LED Cathode (-)
White wire	LED Annode (+)

LED Assembly - Ordering Information			
Product Code	CAS106	CAS106/500	CAS106/750
Lead Length (l)	250mm	500mm	750mm



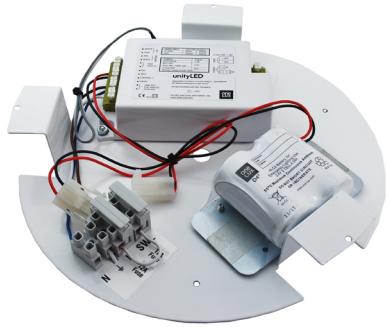
CUSTOM ASSEMBLIES

Product description

- Custom assemblies manufactured to your specification

Properties

- Easy fit solutions for simplified manufacture / installation
- Full technical Support during design (Mechanical Drawings, Material sourcing, compliance assistance: thermal management, EMC, etc.)
- Produced in an ISO9001 and ISO14001 manufacturing environment



INSTALLATION

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.

Ensure battery wiring is correct **before** connection as reverse polarity will cause permanent damage to the module.

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.

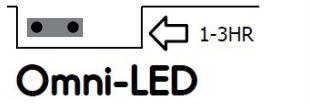
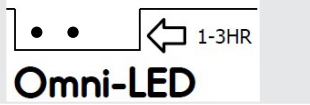
If other devices are connected to the un-switched supply, please be aware that to maintain compliance with EN60598-2-22 that in event of its failure it will not affect other devices on the same circuit. In this case we recommend the use of separate fused terminal blocks to each device.

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

The Omni-LED modules are not suitable for use with battery supplies having 'trickle' or 'intemittent' re-charging circuits.

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, the selector should be removed.
NiCD or NiMH batteries other than those supplied by One-LUX may be used with the Omni-LED modules, but in all cases, refer to the 'Battery & Emergency Output Characteristics' table on page 2 for full specification & requirements.
Warning! Permanent battery damage can occur if the 3 hour setting is used with batteries of less than 4Ah capacity.

Autonomy Selection Information

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

Installation particulars for end user

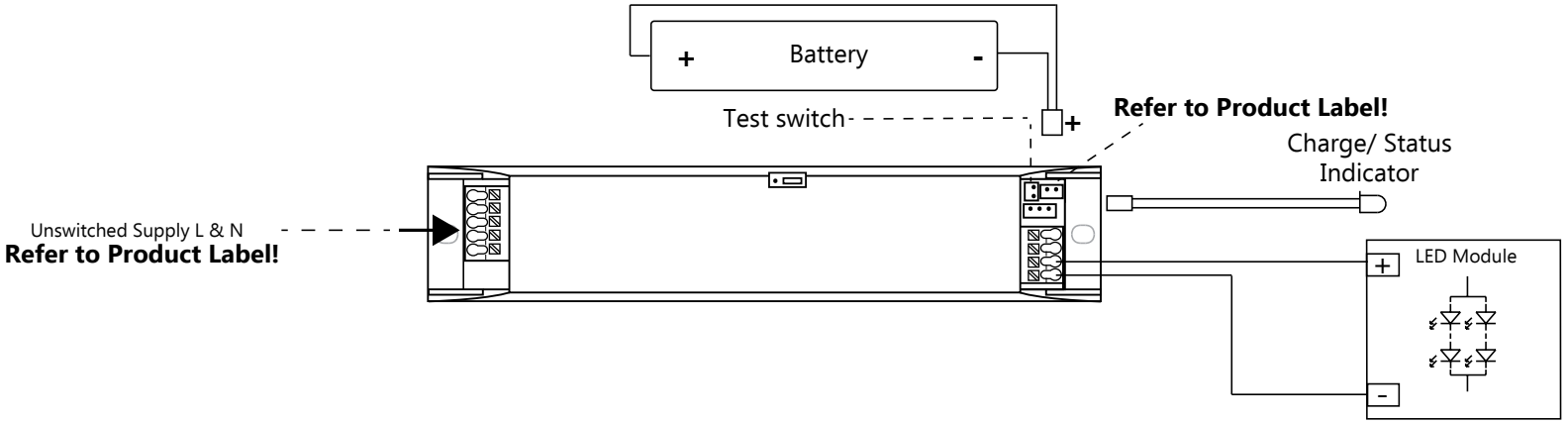
Commissioning: Once the luminaire has been installed in line with the manufacturer's recommendations, **the battery should be allowed to charge for a minimum period of 24 hours before testing for its rated duration.**
If it is anticipated that the un-switched supply may be interrupted, it is imperative that the battery is left disconnected and commissioning is delayed until the supply is stable**.**
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 will adversely affect the design life of the battery.

INSTALLATION

Non-Maintained



Maintained