

**PLEASE READ THESE INSTRUCTIONS  
BEFORE COMMENCING INSTALLATION &  
LEAVE WITH END USER**

**Installation & Wiring Instructions for  
NES Self-Test Module**

**Description:**

The Lite-Plan NES Self-Test emergency lighting module is designed to convert a wide range of LED types with two versions. The NES/3 is the popular choice for converting most standard LED luminaires and arrays containing from 2 to 20 LEDs in series, whilst the NES/3/80 extends the range by converting from 2 to 30 LED's in series.

The NES module is fitted with a microprocessor Self-Test circuit which performs an installation commissioning test, a monthly functional test and an annual full three hour duration tests in accordance with BS 5266.

A bi-colour LED is fitted to indicate that the battery is charging, the test status and any fault indication when appropriate as per chart below.

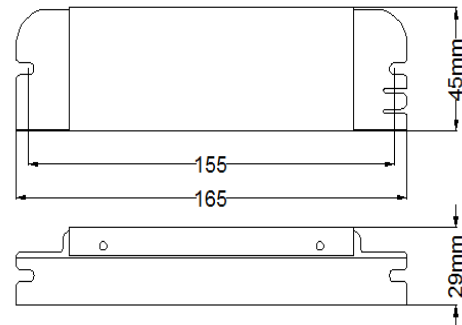
The units are designed to be installed by breaking into the low voltage connection between the mains LED Driver and the LEDs and allow the LEDs to be operated as normal under mains healthy conditions and operated at reduced light output in an emergency. The units automatically adjusts the output LED current to provide the best match between the battery and the load, providing maximum illumination whilst ensuring full battery duration. The units are compatible with a wide range of lighting LEDs such as Philips Fortimo DLM, SLM and LLM ranges, Bridgelux LS/ES/RS ranges, Citizen 4-41W ranges, GE Infusion, Xicato and many others.

**Specification**

Supply Voltage	220-240 Volts AC 50/60 Hz
Power Rating	4.7 Watts
Power Factor	0.9
Duration	3 hours
Ambient Temp.	0°C to + 50°C
Max Case Temperature *	70°C
Max Battery Temperature	55°C
Terminal Blocks	0.5-1.5mm <sup>2</sup> Screw Terminal
Battery Fuse	Internal
Supply Fuse	Not fitted
Battery Pack	3 x 4.5Ah D Cell Ni-Cd
Charge Current	200mA
Recharge Period	24 Hours
Module Size (L x W x H)	165mm x 45mm x 29mm
Module Fixing Centers	155mm
<b>Battery Details (mm)</b>	
Type T1 – Single Stick	221 x 37 x 37 FC 145mm
Type T2 - Side by Side on Plate	100 x 60 x 35 FC 32x40mm
Overall Weight	0.75 Kg

\*Geometric centre of side of case.

<b>NES/3</b>	LED Voltage Range	6 – 55 Volts
	No. of LEDs in series	2 - 20
<b>NES/3/80</b>	LED Voltage Range	6 – 80 Volts
	No. of LEDs in series	2 - 30



**Important**

It is recommended that the module is installed by a competent person ensuring the installation complies with the necessary standards. Lite-Plan accepts no responsibility for injury, damage or loss, which may arise as a result of incorrect installation, operation or maintenance.

The conversion requires an unswitched supply for charging the battery and a switched supply for a maintained conversion.

**ISOLATE BOTH MAINS SUPPLIES AND DISCONNECT THE BATTERY BEFORE INSTALLATION OR MAINTENANCE. High voltage could be present at the output terminals if the battery is not isolated.**

**THIS MODULE MUST BE EARTHED VIA CAN**

**Conversion**

When converting a luminaire observe the following points:-

1. Fit the module & battery pack into the existing luminaire ensuring that they will operate within their temperature ratings.
2. If the module & battery pack do not fit integrally, then a remote conversion can be used. Ensure that the interconnecting loom is kept as short as possible.
3. Wire the module & battery into the luminaire as per wiring diagram on Pg. 2.
4. Ensure that the Switched Live feed is connected to Lin terminal on the module and the Live feed to the LED Mains driver is fed from the Lout terminal.
5. Arrange the wiring to avoid running the 240 Volt cables next to the modules output to the LED(S) to obtain the best EMC results.
6. Requirements for 'F' markings must be observed.
7. Identify clearly the NEW Un-switched supply.
8. Ensure the LED Charge Indicator is clearly visible.

**Warning**

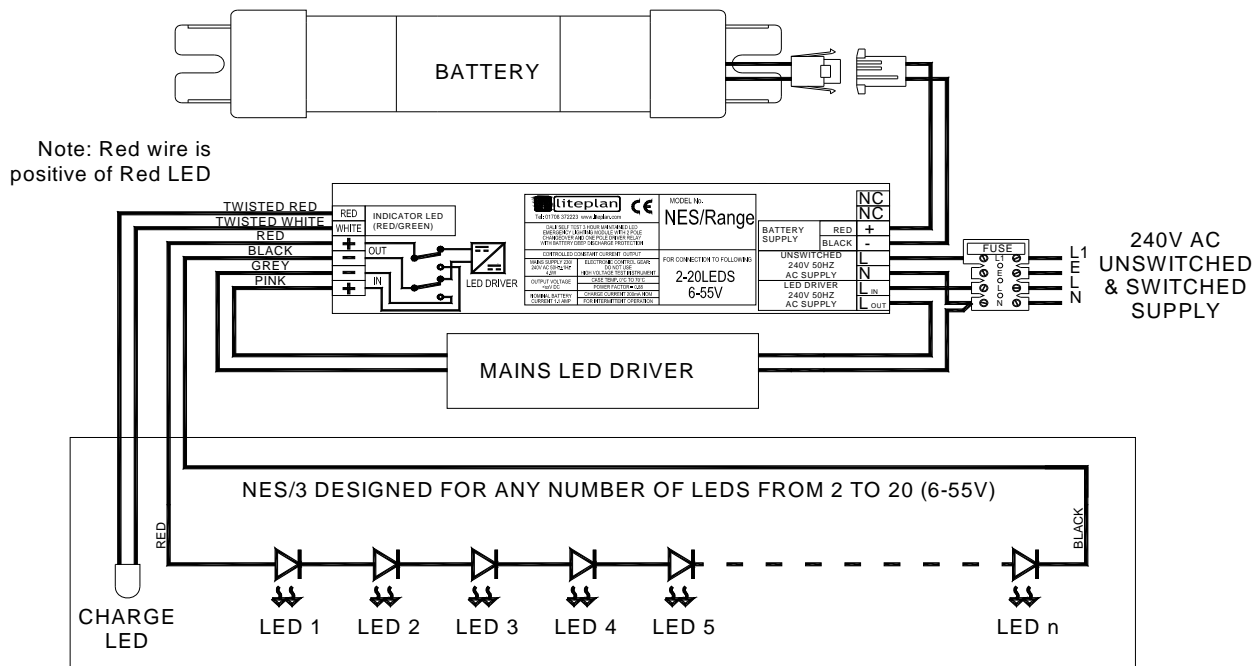
**Avoid running the LED mains driver and Emergency Pack without the load connected. Failure to do so may result in damage to the LED array**

## Test Programme

<b>Monthly Test</b>	Duration 2 minutes Functions tested – battery, convertor & LED Array.
<b>Annual Test</b>	Duration 3 Hours Functions tested – battery capacity, convertor & LED Array.

Mode	Charge LED Indicator
Mains On Battery charging No Faults	Green (Permanently On)
Mains On Battery Fault	Red (Flash once every three seconds)
Mains On LED Lamp Fault	Red (Flash twice every three seconds)
Mains On Battery and Led Lamp Faults	Red (Flash 3 times every three seconds)
Mains Failure Battery OK*	Off
Self-Test Mode	Green (Flash every second)

## Typical Conversion Wiring Diagram



## Testing/Commissioning

- Ensure the Load is connected.
- Connect the battery.
- Switch on the Unswitched Supply - Check the Charge LED illuminates.
- Switch on the Maintained Supply - Check the LED illuminates as normal.
- Switch off the Maintained Supply.
- Disconnect the battery - Check that the Charge LED flashes Red once every three seconds.
- Re-connect the battery.
- Switch off the Unswitched Supply - Check the Charge LED extinguishes and the load LED illuminates at a reduced output.
- Enter the commissioning date on the Battery Pack. Switch on the Unswitched Supply

A 3 hour commissioning test will occur 48 hours after the batteries have been connected providing the previous 24 hours were free of a mains failure. If a mains failure occurs during a test, the test will continue uninterrupted. If the mains supply has not been restored at the end of the test, then the lamp will remain illuminated. Tests are delayed until the lights are manually switched off (i.e.: outside normal working hours). This feature ensures that normal illumination levels are not affected by the self-testing procedures. If the lights are on permanently, then tests are delayed for 24 hours. The timer clock has an accuracy of less than 1 minute per month.

<b>Luminaire Ref/Location</b> _____		<b>In Case of difficulty, contact the Installation Engineers:-</b> _____ Tel: _____								
Full Recharge Time 24 Hours		Duration 3 Hours				Lamp Type - LED				
<b>ROUTINE TEST RECORD</b>										
	Year 1		Year 2		Year 3		Year 4		Year 5	
<b>Monthly Test</b>	<b>Signed</b>	<b>Date</b>	<b>Signed</b>	<b>Date</b>	<b>Signed</b>	<b>Date</b>	<b>Signed</b>	<b>Date</b>	<b>Signed</b>	<b>Date</b>
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