

# LED Module Emergency Control Gear

## THE LDM Range

The ELP LDM emergency LED control gear allows maintained operation of high power LED modules, such as the Philips Fortimo DLM Flex range, Xicato XTM range, Tridonic QLE ESSENCE range, Citizen COB series and the Osram PrevaLED range when used in conjunction with the standard mains voltage LED control gear.

The emergency control gear incorporates a module/charger and a high temperature Nickel Cadmium or Lithium Iron Phosphate battery. In the event of a mains failure an integral 2-pole relay disconnects the LED lighting load from the mains control gear and then connects it to the emergency control gear which operates the LED module at an optimum light output for the rated duration.

### Microprocessor enabled features

- The LED current in emergency mode is automatically adjusted for maximum light output and is constant for the entire rated duration.
- Smart charging of both Nickel Cadmium and Lithium Iron Phosphate batteries. NB: Lithium Iron Phosphate batteries offer long life (up to 10 years)
- Details are logged of any mains failures to assist in the diagnostics of any site issues.
- The LDM range is available with fully interoperable DALI control and reporting function. These DALI versions indicated by the suffix D, also provide automatic Self-Test when no DALI bus is connected.



It is important to note that some LED mains control gear should not be operated with an open circuit load, to overcome this problem when first powering up the LDM range features a live in/ live out relay which ensures the load is in place before the mains driver is powered up.

In Self-test mode the function and duration tests will take place at randomized times. If required, testing can be programmed to occur at a designated time by turning the unswitched supply off and on 3 times in 10 seconds at the required time.

### LDM emergency control gear

To ensure the correct operation of each type of LED modules the correct LDM equipment should be selected. The total forward operating voltages of the LED module / arrays connected should be used to determine the appropriate LDM control gear. For the appropriate battery, indicator LED etc. See the order codes on the last page.



### Total forward operating voltages

12V – 90V

LDM90, LDM90D, LDM90ST

\* Note: high output (HO) control gear is approximately twice the output of the standard control gear.

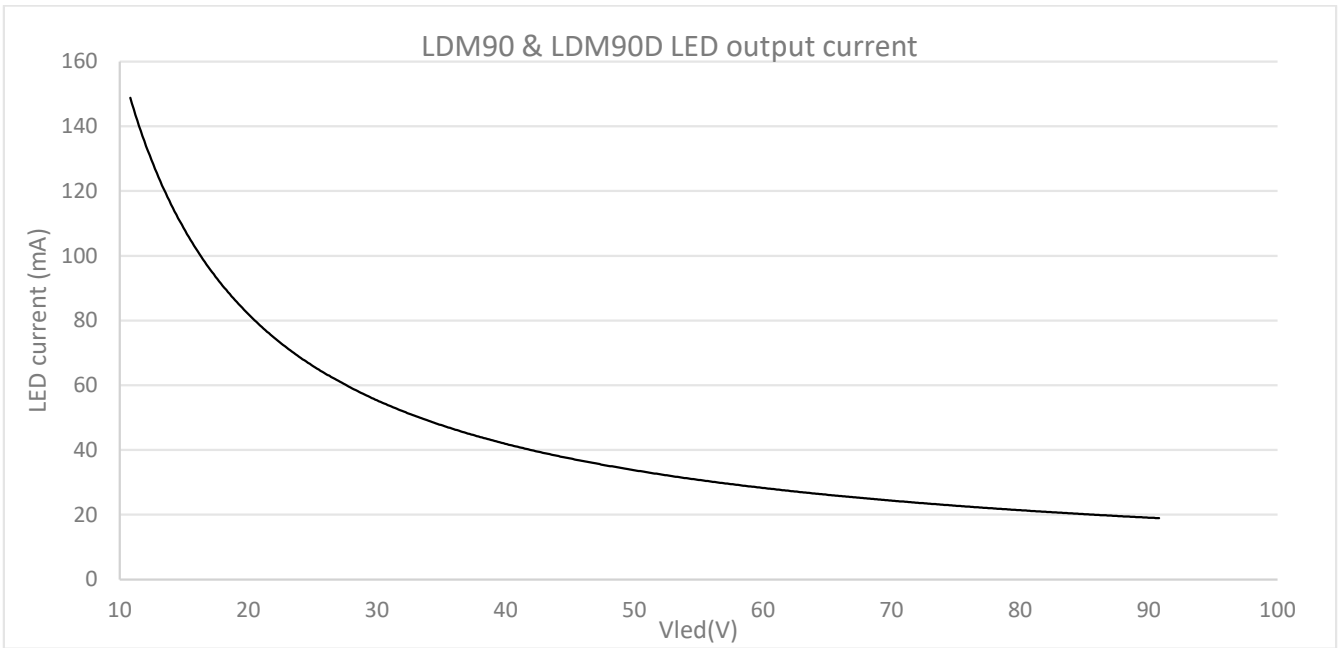
## SPECIFICATION

| Section   | Subject  | Plastic housed module   |
|---|--|---|
| Environmental   | Protection against electric shock  | Class II  |
|   | Ingress protection   | IP20  |
|   | Module rated operating ambient temperature   | -20°C to 50°C   |
|   | Battery rated operating ambient temperature  | 0°C to 55°C   |
|   | Maximum case temperature   | 60°C  |
| Mains operation   | Rated voltage supply   | 220/240 VAC   |
|   | Mains frequency  | 50/60 Hz  |
|   | Mains supply current<br>LDM90, LDM90D & LDM90ST  | <19mA   |
|   | Mains supply power   | 4W  |
|   | Power factor   | 0.53C   |
|   | Mains overvoltage protection   | 320V for 1 hour   |
|   | Indicator LED  | 2 wire green colour – standard LDM<br>2 wire red/green colour – DALI LDM    |
|   | Maximum power that can be switched via relay contacts  | 150W  |
|   | Maximum current that can be switched via relay contacts  | 3A  |
|   | Maximum voltage that can be switched via relay contacts  | 250VAC/220VDC   |
| Emergency operation   | Emergency duration   | 1 or 3 hours  |
|   | Battery chemistry type   | NiCd or LiFePO <sub>4</sub>   |
|   | Number and type of high temperature cells<br>LDM90, LDM90D & LDM90ST   | 4 x NiCd 1.8Ah sub-C cells  |
|   | Battery recharge period  | <24 hours   |
|   | Time to full illuminance   | <0.5 seconds  |
|   | Short-circuit-proof battery connection, polarity reversal and deep discharge protection  |   |
|   | Battery charge current<br>NiCd 1.8Ah sub-C cells 2 stage charge – boost / trickle<br>LiFePO <sub>4</sub> 2.2Ah & 3Ah 26650 cells –voltage dependent, constant current  | 100mA/70mA ±10%<br>0 -150mA   |
|   | Battery discharge current range (at nominal battery voltage)<br>NiCd 1.8Ah sub-C cells<br>LiFePO <sub>4</sub> 2.2Ah 26650 cells<br>LiFePO <sub>4</sub> 3Ah 26650 cells | 360mA to 560mA (450mA)<br>475mA to 735mA (550mA)<br>650mA to 1000mA (750mA) |
|   | Module operating current – see graphs on following pages<br>LDM90, LDM90D & LDM90ST  | 134mA to 19mA ±10%  |
|   | Module output voltage range (nominal power)<br>LDM90, LDM90D & LDM90ST   | 12V to 90V (1.6W)   |
| A record is kept of the number and length of emergency and mains operations | This information can be downloaded via the internal programming connector  |   |
| Mechanical  | Module outside dimensions  | L178mm x W30mm x H21mm  |
|   | Fixing centers   | 174mm   |
|   | Electrical connections   | Push wire terminals   |
| Standards compliance  | EN61347-1, EN61347-2-7, EN61347-2-13 & EN62384   | Yes   |
|   | EN62034*, EN62386-101*, EN62386-102*, EN62386-202*   | Yes   |
|   | EN55015, EN61547   | Yes   |

**Note: Values are subject to change**

\* DALI/Self-test control gear only

**Emergency Lighting Performance for LED Modules with different operating voltages**  
 (LEDs with forward operating voltages 12V - 90V)



**Description**

**Order codes**

**Standard LDM**

**LDM90/K/NC**

**DALI / Self-Test LDM**

**LDM90D/K/NC**

**Self-Test LDM**

**LDM90ST/K/NC**

**Note:** "NC" = No Terminal Cover Set  
 "D" = DALI and Self-Test  
 "ST" = Self-Test only (no DALI)