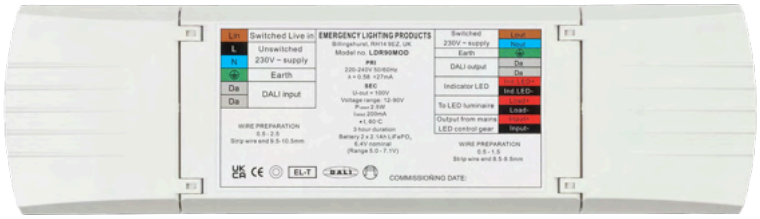
LED Module Emergency Control Gear

LDR Range

The ELP **LDR** emergency LED remote (independent) control gear allows maintained operation of high-power LED modules, and has been designed to be used in applications where you cannot fit an emergency conversion kit inside the luminaire, making it ideal for 600x600 panels and downlights where the pack can be positioned in the ceiling void. With colour coded push fit terminals, cable restraints and terminal covers it makes this a safe and installation friendly product for luminaires that need a remote pack solution.

The emergency control gear incorporates a module/charger and a high temperature Lithium Iron Phosphate ($LiFePO_4$) battery all in one housing. 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 Lithium Iron Phosphate batteries. **NB:** Lithium Iron Phosphate batteries offer long life (up to 8 years).
- Details are logged of any mains failures to assist in the diagnostics of any site issues.
- The **LDR** 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.

In Self-test mode the function and duration tests will take place at randomised times. If required, duration testing can be programmed by turning the unswitched supply off and on 3 times in 10 seconds at the required time.
Note: The function test will occur weekly at the same time.

LDR EMERGENCY CONTROL GEAR

To ensure the correct operation of each type of LED module the correct **LDR** equipment should be selected. The total forward operating voltages of the LED module/arrays connected should be used to determine the appropriate LDR control gear. For the appropriate battery, indicator LED etc.

Note: All **LDR** modules can be equipped with **SurePath *BLE*** Bluetooth addressable Gateway modules. *See Data Sheet.*

Total Forward Operating Voltages

12 - 90V	**LDR90, LDR90D, LDR90MO, LDR90MOD, LDR90HO, LDR90HOD**

Note: High output **(HO)** control gear is approvimately twice the output of the standard control gear

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SPECIFICATION

Section	Subject	Plastic housed module
Environmental	Protection against electric shock	Secondary outputs – SELV for output voltage < 100V
	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	65°C
Mains Operation	Rated voltage supply	220/240 VAC
	Mains frequency	50/60 Hz
	Mains supply current	<18mA
	Mains supply power	4W
	Power factor	0.53C
	Mains overvoltage protection	320V for 1hour
	Indicator LED	2 wire green colour – standard LDR 2 wire red/green – DALI LDR
	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	Lithium Iron Phosphate
	Number and type of high temperature cells **LDR90** and **LDR90D**	2 x $LiFePO_4$ 1.8Ah 18650 cells
	LDR90MO and **LDR90MOD**	2 x $LiFePO_4$ 2.3Ah 22650 cells
	LDR90HO and **LDR90HOD**	2 x $LiFePO_4$ 3.4Ah 26650 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 $LiFePO_4$ 1.8Ah, 2.3Ah and 3.4Ah cells – voltage dependent, constant current	0-150mA
	Battery discharge current range (at nominal battery voltage) $LiFePO_4$ 1.8Ah18650 cells $LiFePO_4$ 2.3Ah 22650 cells $LiFePO_4$ 3.4Ah 26650 cells	 360mA to 560mA (450mA) 475mA to 735mA (550mA) 650mA to 1000mA (750mA)
	Module operating current – see graphs on following pages **LDR90** and **LDR90D**	134mA to 19mA ±10%
	LDR90MO and **LDR90MOD**	200mA to 30mA ±10%
	LDR90HO and **LDR90HOD**	258mA to 41mA ±10%
	Module output voltage range (nominal power) **LDR90** and **LDR90D**	12V to 90V (1.6W)
	LDR90MO and **LDR90MOD**	12V to 90V (2.6W)
	LDR90HO and **LDR90HOD**	12V to 90V (3.5W)
	EOFI – dependant on LED module type	0.12 to 0.25
	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	(L)270mm x (W)76mm x (H)35mm
	Minimum cut-out diameter	ø150mm
	Electrical connections	Push wire terminals
Standards compliance	EN61347-1, EN61347-2-7, EN61347-2-13 and EN62384	Yes
	EN62034*, EN62386-101*, EN62386-102* and EN62386-202*	Yes
	EN55015	Yes
	EN61547	Yes
	Marks CE	Yes

Note: Values are subject to change. *DALI/Self-Test control gear only

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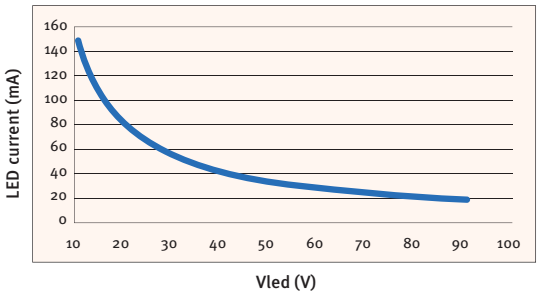
EMERGENCY LIGHTING PERFORMANCE FOR LED MODULES WITH DIFFERENT OPERATING VOLTAGES

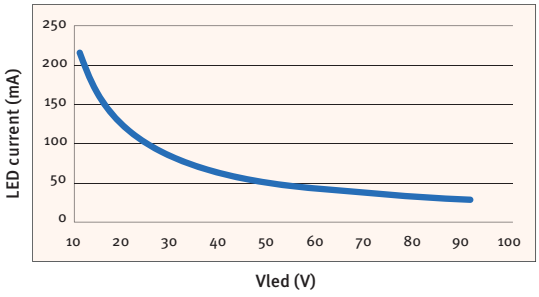
LEDs WITH FORWARD OPERATING VOLTAGES

12V - 90V

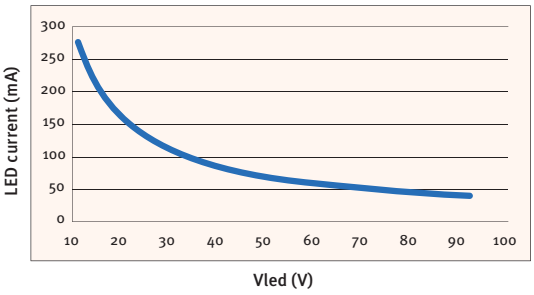
LDR90 and LDR90D LED output current



LDR90MO and LDR90MOD LED output current



LDR90HO and LDR90HOD LED output current



NB: EOFI (Emergency output factor of the forward voltage) is given by:-

Emergency LED current / Rated mains LED current

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	ORDER CODES	Description
Emergency lighting control gear	**LDR90/K**	12V to 90V Standard output module c/w indicator LED
	LDR90D/K	12V to 90V DALI/Self-Test standard output module c/w indicator LED
	LDR90MO/K	12V to 90V Medium output module c/w indicator LED
	LDR90MOD/K	12V to 90V DALI/Self-Test medium output module c/w indicator LED
	LDR90HO/K	12V to 90V High output module c/w indicator LED
	LDR90HOD/K	12V to 90V DALI/Self-Test high output module c/w indicator LED

Note: The suffix **D** is for DALI/Self-Test control gear

OPTIONS:

/ASSY	Prewired with all cables for connection to emergency luminaire, see photograph below.
/FI	Prewired with free-issued cables for connection to emergency luminaire.

LDR90MOD/K/ASSY

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