Visual Interactive Ltd

INSTALLATION INSTRUCTIONS

VIL2DRE LED LAMP WITH XY3 LED EMERGENCY CONVERSION KIT

GENERAL DESCRIPTION

This kit provides all the components necessary to convert an existing 28W type 2D fitting, into an energy efficient version with emergency backup light source. This 2DRE Kit comprises of a dedicated LED Lamp with Integrated High Power LED, and the XY3 Emergency Kit from Mackwell Electronics. The XY3 system consists of LED Driver, battery pack, charge indicator harness, and XY3 to 2DRE Interface Lead. Built into the system is a deep discharge protection circuit for use with a 3.6V 1.8Ah NiMH battery pack.

**** IMPORTANT: Remove the existing control gear and batteries before commencing ****

REMOTE MOUNTING OF XY3 MODULE

When mounting the module, the location should allow for some slack in the XY3 to 2DRE Interface Lead

TEMPERATURE

The ambient temperature range for the XY3 is 0 to 50 C, but in any event the centre side of the can should not exceed 75 C.

BATTERIES

The batteries supplied by Mackwell Electronics are of high quality and designed to provide a 4 year life as required by BS EN 60598-2-22 and ICEL 1001 when operated within the temperature range specified. Details of the battery packs can be found from the Mackwell website www.mackwell.com

DEEP DISCHARGE PROTECTION

The XY3 Module is fitted with a deep discharge circuit, which cuts the power to the LED after the cell voltage has dropped below the end of its discharge level (1 volt per cell). The circuit will remain inert until the supply is restored. This will protect the battery against excessive discharge when the mains supply has failed for long periods.

FUSES

Battery	A battery fuse is incorporated in the XY3 module to protect from heavy discharge
Charger	Although the charge is already short circuit protected, a fuse should always be fitted inside the luminair to protect the system integrity against total failure of any unit. It is recommended to isolate the supply with a 2S anti-surge fuse.

DIMENSIONS

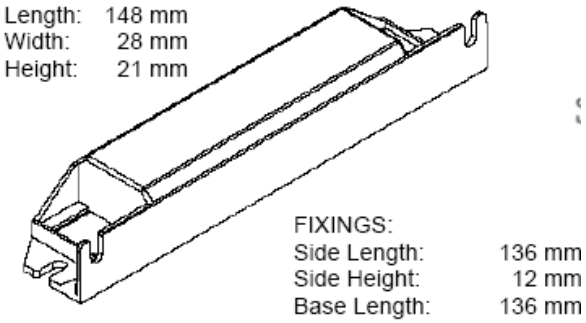
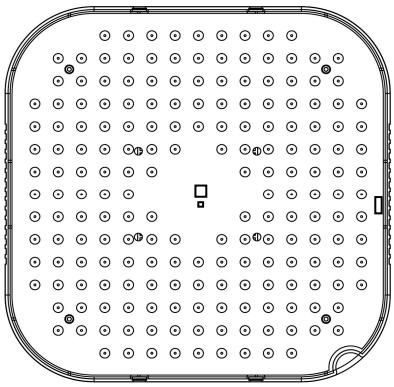


Figure 1: Module can dimensions

2DRE LED Lamp

Length: 195mm
Width : 195mm
Depth: 34.5mm



ELECTRICAL INSTALLATION

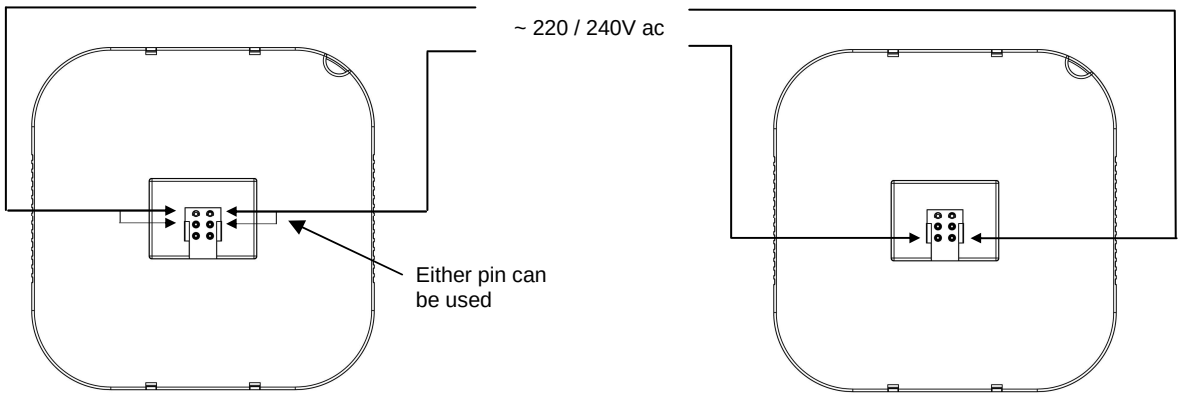
Modules comply with the EMC directive in both modes of operation (mains and emergency) Compliance will be protected by keeping lamp leads away from mains leads to avoid transfer of RFI to the live and neutral connections. Fused terminal block should be situated so that incoming mains connections are kept short. Ensure the driver and battery pack are fitted as far away as possible from the LED lamp (towards the periphery) .The assembled luminaire should be energised for a minimum of 16 hours to fully charge the batteries. The un-switched live supply should be left undisturbed during the commissioning and installation period. The Green Indicator LED **must be visible** by either mounting externally or within a suitable position inside the fitting so it can be seen clearly through the diffuser.

IMPORTANT: **Connect the battery before switching on the mains supply.**

CONNECTIONS

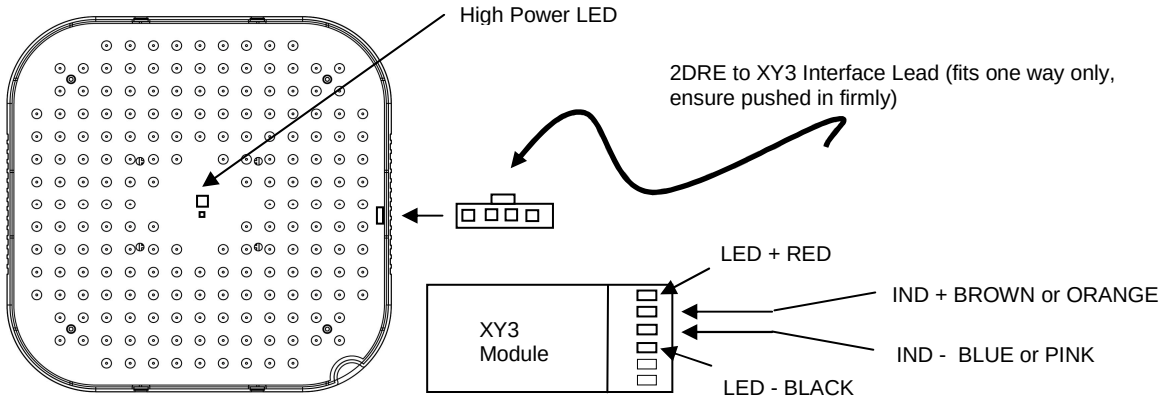
2DRE Lamp

The 2DRE lamp is designed to operate from direct mains and connects into a standard 2 or 4-pin G10q 2D Connector., Connections to the rear of the lamp are shown below. **NO starter or BALLAST required**.



Interface to the XY3 Module

The 2DRE Lamp incorporates its own internal high power LED and interfaces directly to the XY3 Module as shown below using the side mounted connector fitted at the edge of the lamp. The connector is polarised, so ensure it is inserted so that the flat edge of the connector is at the bottom



The 2DRE to XY3 Interface lead carries power for the Emergency LED. The Charge Indicator is external to the LED lamp and is connected directly to the XY3 Module as shown above.

OPERATION

When the un-switched live and neutral are connected, the high power LED will light momentarily and the green indicator will light to show that the battery is receiving charge. After a period of 16 hours the unit will be capable of achieving a 3-hour emergency duration.

Every 2 hours, the high power LED gives a short pulse. This is part of the self test procedure and is not an indication of a fault. The green indicator provides information on the status if the XY3 Module as follows:-

- **Constant LED Illumination:** Mains connected, charging, battery and LED satisfactory
- **LED off:** Mains NOT connected, battery or charging system faulty
- **Flashing LED (@ 2Hz)** Defective Power LED

MAINTENANCE

The emergency system should be checked regularly in accordance to local regulations.
IMPORTANT: The batteries have a finite life and therefore it is recommended to regularly put the system into emergency mode for testing. See the attached *Test Record* for further information.

TROUBLESHOOTING

Q. The product appears not to be working.
A. Check that the connections correspond with the label on the module and they are all firmly attached.
Also, see the *Operation* section above.

Q. Is the battery more than 4 years old?
A. It is recommended to replace batteries older than this.

Q. What does the green LED mean?
A. Refer to *Operation* section above.

WARRANTY

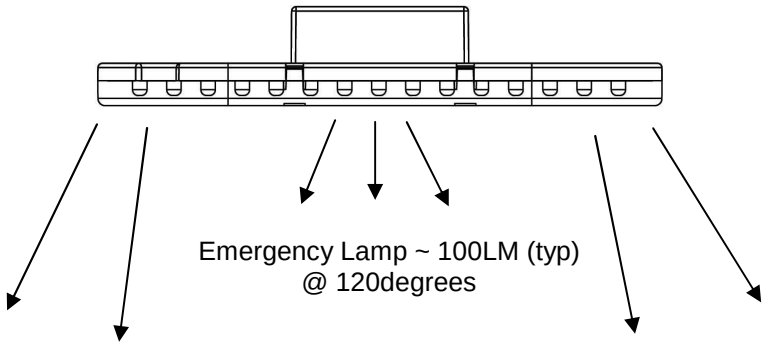
All our electronic products are guaranteed for three years to cover both faulty workmanship and materials. Our "Return to Base" warranty requires that the product is used within the terms and conditions stated above and in our literature, and in particular, modules must be used with the correct or approved battery pack. Items should be carefully checked thermally so that the specified temperatures are not exceeded under any conditions. Do not insulation test this product. Products returned to us under warranty must be carriage paid. Visual Interactive Ltd accepts no liability for costs incurred. This does not affect your statutory rights.
Battery packs are guaranteed for one year, but when operating within the temperature specified in our web site have a design life in excess of four years as required by BS EN 60598-2-22.

OPTICAL

The 2DRE Lamp is an integrated lamp / Emergency light source which replaces a traditional 2D 28W Fluorescent version. This means the product is designed to be fitted inside a bulkhead with diffuser. As a result, the actual LUX output will be dependant on the diffuser type (ie prismatic, opal, etc).

The Emergency light source is typically 1/10th of the main lamp output. So, as an example, with a LUX level of 50 from the actual fitting, in the event of an emergency, the light level will drop to 50 \ 10 = 5 LUX.

It will be the responsibility of the installer of this product to ensure fire regulations regards to light levels / distribution are adhered to.



Emergency Lighting Inspection and Test Record – BS 5266 -1:2005	Sheet number:

Test types: C = Commissioning test
M = Monthly test (see BS EN 50172:2004/BS 5266-8:2004, 7.2.3)
A = Annual test (see BS EN 50172:2004/BS 5266-8:2004, 7.2.4)

Date of test	Test type	Result – Test Passed No action needed	Result – Test Failed	
			Need for repair of system notified	Need for safeguarding of premises notified
		Sign below*	Sign below*	Sign below*
	C			
	M – 1st			
	M – 2nd			
	M – 3rd			
	M – 4th			
	M – 5th			
	M – 6th			
	M – 7th			
	M – 8th			
	M – 9th			
	M – 10th			
	M – 11th			
	A			
	M – 1st			
	M – 2nd			
	M – 3rd			
	M – 4th			
	M – 5th			
	M – 6th			
	M – 7th			
	M – 8th			
	M – 9th			
	M – 10th			
	M – 11th			
	A			
	M – 1st			
	M – 2nd			
	M – 3rd			
	M – 4th			
	M – 5th			
	M – 6th			
	M – 7th			
	M – 8th			
	M – 9th			
	M – 10th			
	M – 11th			
	A			

* Sign as applicable

Emergency Lighting Fault Action Record		Sheet number:	
Contact references	Contact name	Phone number	
Equipment supplier:			For replacement parts
Maintenance engineer:			Competent engineer
Responsible person:			Site control
Date of failure	Action taken to safeguard the premises (Details and signature)	Action taken to rectify the system (Details and signature)	Date system repaired