
Cromatix 50mm MR16 Ultra-Efficient Solid State Light (U-ESSL)

Primary EU Datasheet and Operating Guide



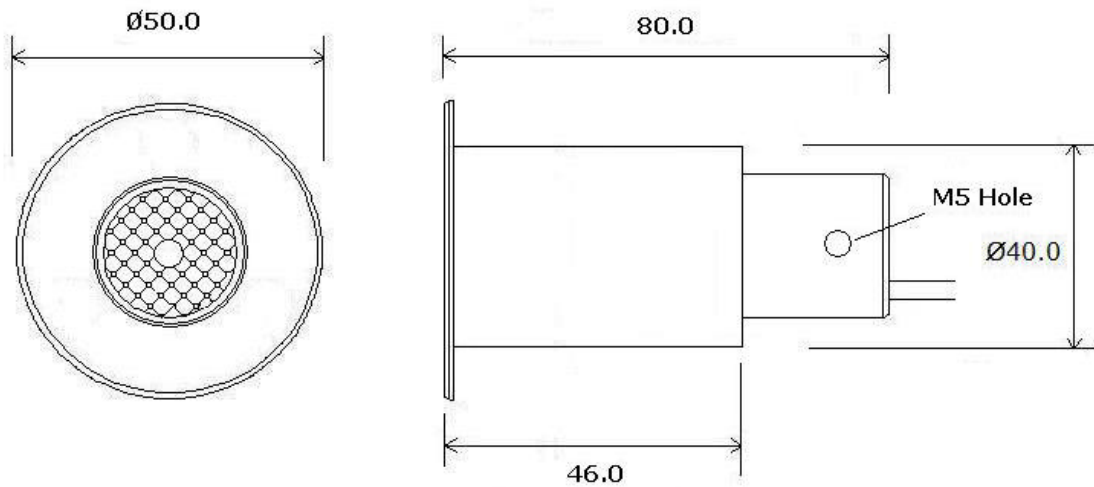
The Cromatix U-ESSL 50mm is a light source that delivers the promised LED lighting revolution to home and commercial users in a highly cost effective package. Through the use of energy-efficient, environmentally friendly LED lighting, the U-ESSL and associated products render traditional incandescent lighting obsolete.

The LED arrays feature the lowest thermal transfer available, thus giving the user maximum output, maximum life and lowest running costs. Each light comes with a carbon offset statement and a class-leading three year warranty.

The U-ESSL is available in warm white, neutral white and for mood-lighting applications, colour-mixing RGB. By using appropriate drivers and interfaces the lights can be controlled by virtually any building automation system or lighting controller.

The light can be used as a traditional MR16 downlight, mounted in the floor, or with optional brackets, used as a surface mount or spiked spotlight.

Outline Drawing



Key Features

- Upto 280 Lumens available
- 12, 25 and 57 degree beam angles available
- Die Technology: InGaN
- Typical 66Lm/W
- Available in warm white, & RGB
- LED life 50,000 hours min
- Anodised aluminium body
- UV stabilised polycarbonate optic
- Total Max Power: 4.2W (White) 7W (RGB)
- Operating Environment: IP40 (IP68 available as an option)
- Operating Temperature -30C to 50C
- Can be painted to any RAL/BS colour to order
- Can be used as an MR16 retrofit downlight, a floorlight or spotlight using the optional brackets and spikes.
- Protection circuit fitted as standard to monitor junction temperature and current
- Class-Leading 3 Year Warranty

Part Number Identification (add suffix -IP for use in wet environments such as bathrooms)

Description	Part Number (MR16 Only)	Part Number (IP67 Bracket)
50mm Warm White	CR50WW	GS50WW
50mm RGB	CR50RGB	GS50RGB
50mm Blue	CR50B	GS50B
50mm Red	CR50R	GS50R
50mm Green	CR50G	GS50G
50mm Amber	CR50A	GS50A

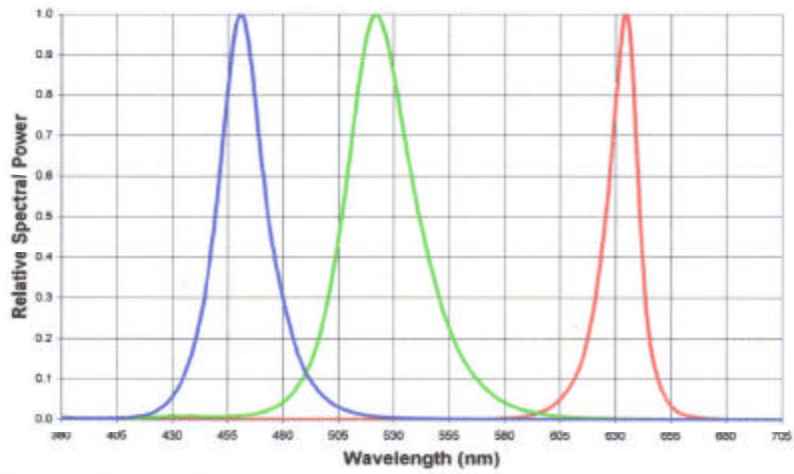
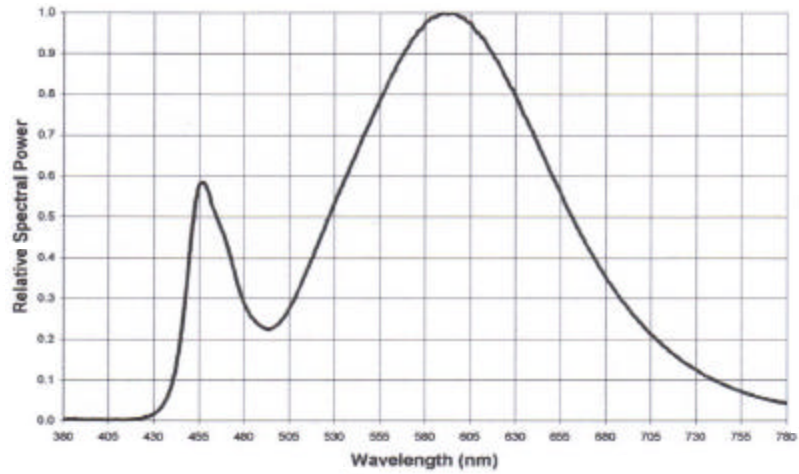
Electrical Characteristics

Product Variant	Recommended Operating Current	Absolute Maximum Current	Typical Vf @ 350mA	Typ Power (W)
Warm White	350mA	700mA	11.2v	4.2W
RGB	350mA	525mA	R=4.5v G/B=7.6v	7W
B/R/G/A	700mA	1000mA	6.7v	7W

Photometric Characteristics

Product Variant	Typical Lumens at 350mA	Typical Lumens at 525mA	Dominant Wavelength / CCT	Beam Angle
Warm White	280Lm	405Lm	3050K	25 Degrees
RGB (red)	69Lm	100Lm	624nm	25 Degrees
RGB (green)	109Lm	142Lm	520nm	25 Degrees
RGB (blue)	29Lm	40Lm	465nm	25 Degrees
Blue	63Lm		465nm	25 Degrees
Red	109Lm @ 700mA	-	624nm	25 Degrees
Green	216Lm @ 700mA	-	520nm	25 Degrees
Amber	131Lm @ 700mA	-	590nm	25 Degrees

Spectral Density *(Warm White and RGB Plots)*

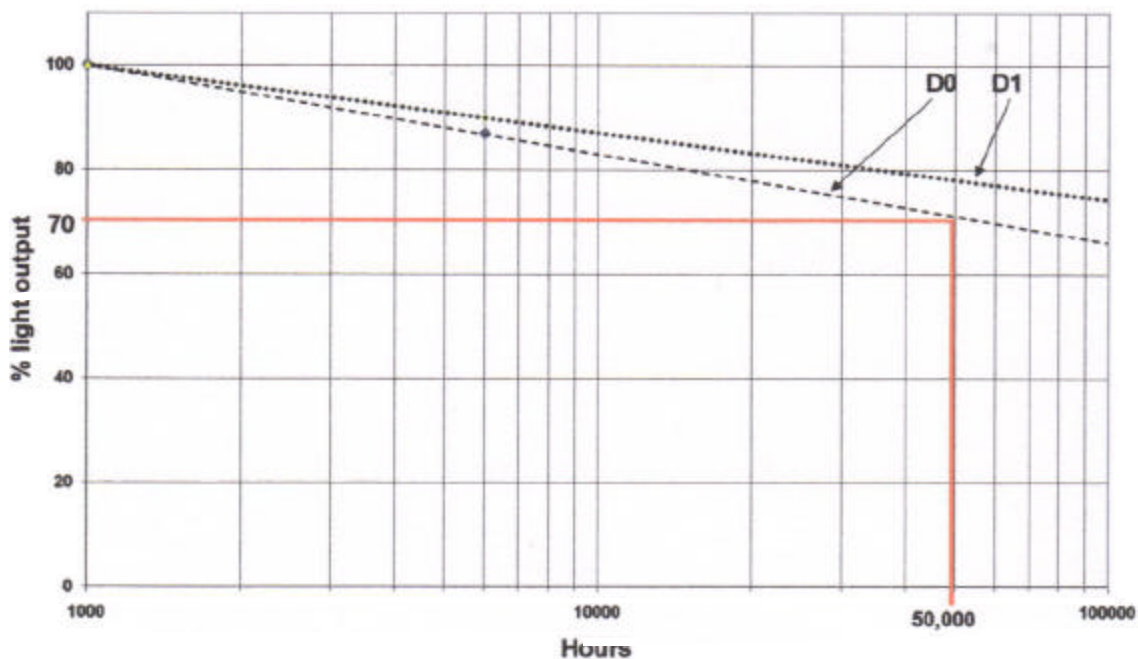


Lumen Maintenance

Conventional lighting sources and LEDs both experience lumen depreciation over time even when operated within specified conditions. Therefore, when considering the useful life of very long life products such as LEDs, lumen depreciation must also be taken into account. Lumen depreciation is typically expressed as lumen maintenance - the percentage of initial lumens remaining after a specified period of time.

Lumen maintenance of LED light sources is dependent on many factors including ambient temperature and humidity, the method of electrical control, drive current, and effective thermal management.

High LED junction temperatures accelerate degradation in lumen maintenance and result in a temporary reduction in luminous flux. The packaging technology of the LEDs used inside the CR50 provides exceptional thermal management, a critical factor in optimizing lumen maintenance and luminous flux with high density LED arrays.



Lumen Maintenance For CR63RGB Per LRC LED Life Test Vol1 (ENG1210 and 1221)

Predicted Life

The life of conventional lighting sources is based on the time it takes for 50% of lamps to fail. LEDs, being semiconductors, express their failure rate using 'mean time to failure' (MTTF), a well-defined statistical term commonly used in the semiconductor industry. LED manufacturers typically predict high brightness LED MTTF to be on the order of 50,000 - 100,000 hours, provided LEDs are properly packaged and used in accordance with manufacturers' recommendations.

Cromatix U-ESSL fittings are built with light engines using exclusive packaging technology which ensures an excellent thermal path from the LED junction to the body of the fitting. The packaging also provides an excellent thermal coefficient of expansion (TCE) match to the LED. This ensures that the bond between the LED and the package is not subject to undue stress as the entire assembly expands and contracts with heating and cooling. By minimizing both the LED junction temperature and the mechanical stress on the device, the U-ESSL packaging system provides one of the best operating environments available for high brightness LEDs.

Warranty

36 months unconditional from date of purchase. For product support, please contact info@ledlightingproducts.co.uk

Product Disposal

When you eventually decide to update this product or it reaches the end of its life, do not dispose of it with your normal household waste or at a local amenity tip.

You should either take it to a recycling centre or return it to the retailer from which you bought it where they will arrange for it to be recycled.