

## Cromatix Ultra-Efficient Solid State Light (U-ESSL) CR40

### Primary EU Datasheet and Operating Guide

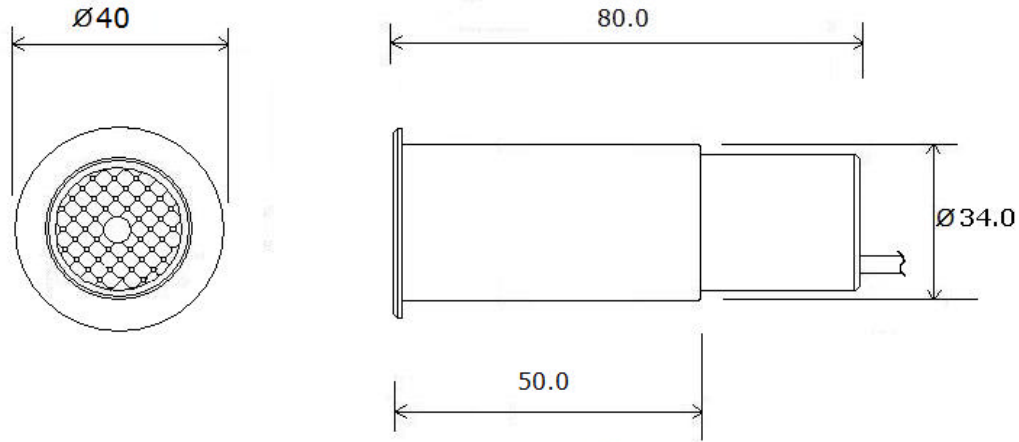


The Cromatix U-ESSL 40mm is a light source which delivers the promised LED lighting revolution to home and commercial users in a highly cost effective package. Through the use of energy-efficient, environmentally friendly LED lighting, the U-ESSL and associated products render traditional incandescent lighting obsolete. The CR40 can be used as a floor light, spotlight or recessed down lighter when coupled with the appropriate bracketry and fittings.

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.

### Outline Drawing (Base Light Only)



### Key Features

- Upto 224 Lumens available
- 38 degree medium beam angle
- 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: 3.36W (White) 5.6W (RGB)
- Operating Environment: IP40 (IP68 available as an option)
- Operating Temperature -30C to 50C
- Can be painted to any RAL/BS colour to order

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

Description	Part Number
40mm Warm White	CR40WW
40mm RGB	CR40RGB

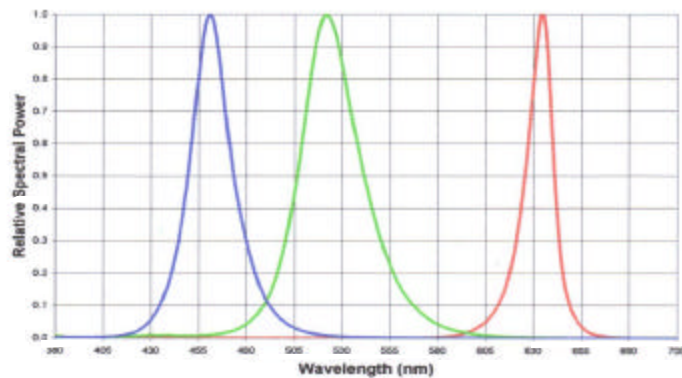
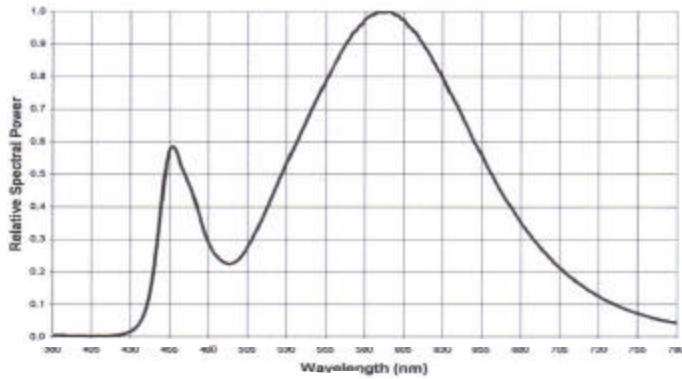
### Electrical Characteristics

Product Variant	Recommended Operating	Absolute Maximum	Typical Vf @ 280mA	Typ Power (W)
Warm White	280mA	560mA	11.2v	3.6W
RGB	280mA	420mA	R=4.5v G/B=7.6v	5.6W

### Photometric Characteristics

Product Variant	Typical Lumens at 350mA	Typical Lumens at 525mA	Dominant Wavelength / CCT	Beam Angle
Warm White	224Lm	324Lm	3050K	37 Degrees
RGB (red)	55.2Lm	80Lm	624nm	37 Degrees
RGB (green)	87.2Lm	113.6Lm	520nm	37 Degrees
RGB (blue)	23.2Lm	32Lm	465nm	37 Degrees

### Spectral Density (Warm White and RGB Plots)

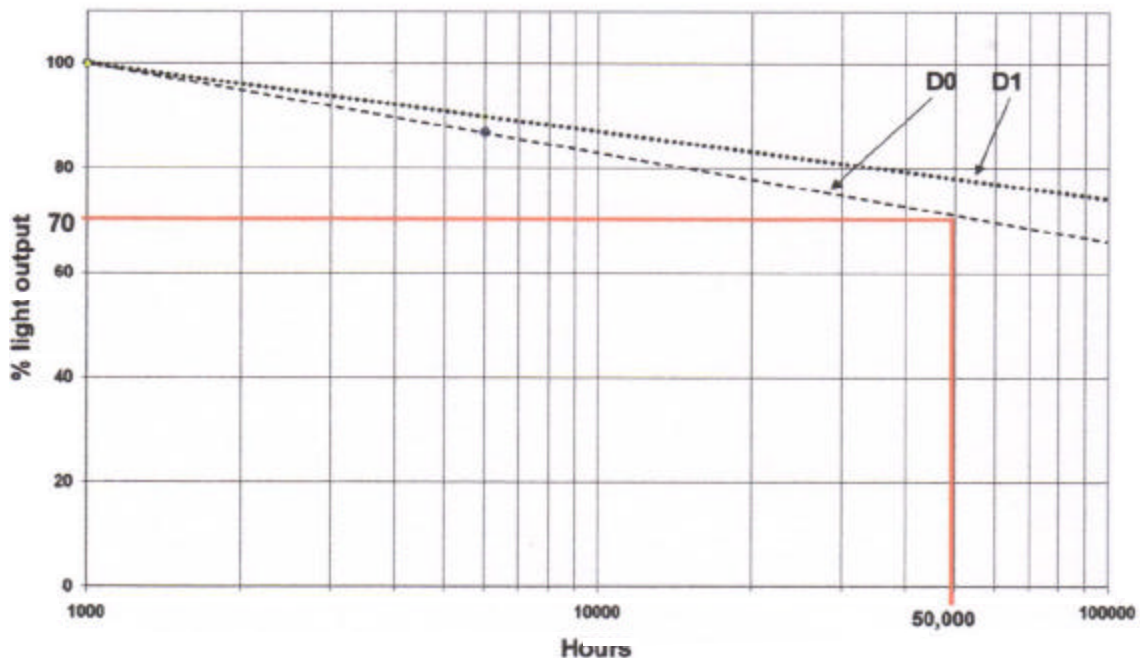


## Lumen Maintenance

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 CR40 provides exceptional thermal management, a critical factor in optimizing lumen maintenance and luminous flux with high density LED arrays.



*Lumen Maintenance For CR40RGB 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.

## **Accessories**

There are a range of accessories and brackets that convert the base light unit into a surface mounted spotlight, spike light, recessed down lighter etc. Please contact [info@ledlightingproducts.co.uk](mailto:info@ledlightingproducts.co.uk) for full configuration details.

## **Warranty**

36 months unconditional from date of purchase. For product support, please contact [info@ledlightingproducts.co.uk](mailto: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.