

660 SERIES PANEL INDICATOR LED



FEATURES

- Ø6.0mm mounting
- Plastic housing
- Sealed to IP67 - weatherproof
- Bi-polar operation
- Range of LED colour options
- Choice of solder pins or wires

BENEFITS

- Standard industrial mounting size
- Low cost, lightweight solution
- Suitable for external applications
- Prevents wrong polarity installation
- Suitable for status panel indication
- Flexibility for different applications
- Outstanding reliability

MARL Part Number	LED Colour	Lens Appearance	Typical Voltage DC Vopr	Max. Power Dissipation	Typical LED Luminous Intensity @ 20mA	Typical LED Wavelength λp	Viewing Angle 2 Ø 1/2	Operating Temp Topr *	Storage Temp Tstg
660-305-64	Red	White Diffused	8-48	400	18	645	120	-30 to +85	-40 to +85
660-308-64	Amber	White Diffused	8-48	400	45	610	120	-30 to +85	-40 to +85
660-311-64	Yellow	White Diffused	8-48	400	14	585	120	-30 to +85	-40 to +85
660-314-64	Green	White Diffused	8-48	400	14	568	120	-30 to +85	-40 to +85
660-320-64	Blue	White Diffused	8-48	400	90	470	120	-30 to +85	-40 to +85
660-998-64	White (5000K)	White Diffused	8-48	400	1125	N/A	120	-30 to +85	-40 to +85
			Vdc	mW	mcd	nm	Deg	°C	°C

OPTIONAL FLYING LEAD TERMINATORS

MARL Part No. Suffix	Wire Length	Wire Colours (DC)	Wire Colours (AC)	No/Diameter of Conductors	Diameter of Insulation	Wire Specification
660-305-64-40	305mm	Red - Anode Black - Cathode	Brown - Live Blue - Neutral	11/0.16mm	1.15mm	24AWG

Please note that 660-998-64-40 (white with flying leads) is obsolete and no longer available.

NOTES

Intensities (Iv) may vary between LEDs within a batch. All LED components are supplied in anti-static packaging.

* Characteristics at Ta = 25°C. For operating temperature derating graphs, please refer to sheet 2.

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TECHNICAL CHARACTERISTICS

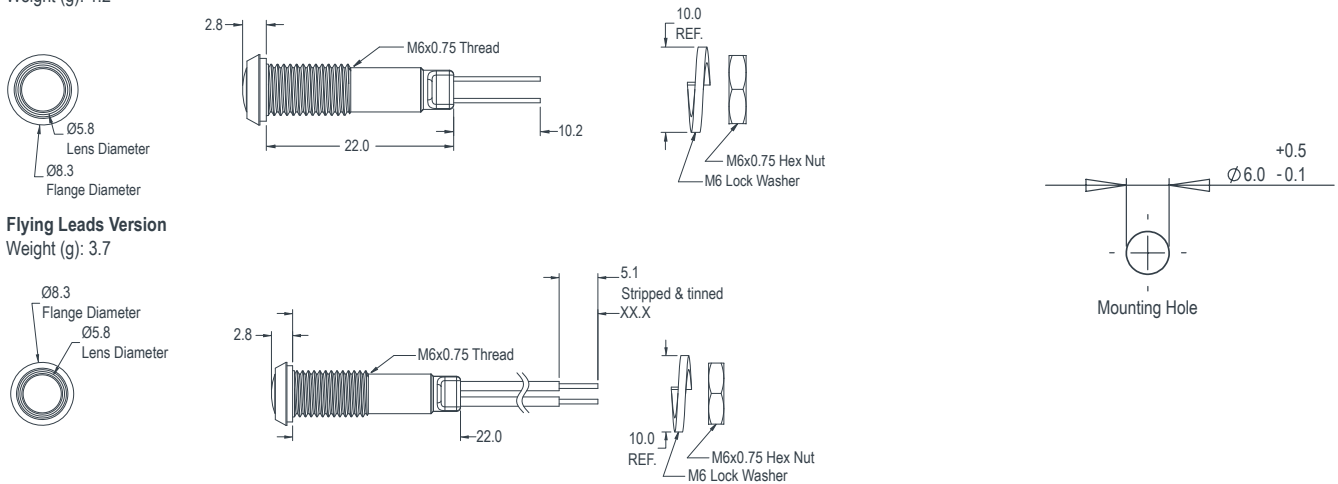
Series	Panel Cutout	Nut Mounting Torque	Min. Mounting Centres	Min - Max. Panel Thickness
660	6.0	0.35	17.0	1.5 - 6.0
	mm	Nm	mm	mm

TECHNICAL DRAWING

Dimensions in mm (typical). Not to scale. Mounting hole to be clean and burr free. Anode termination (DC model) denoted by red sleeve.

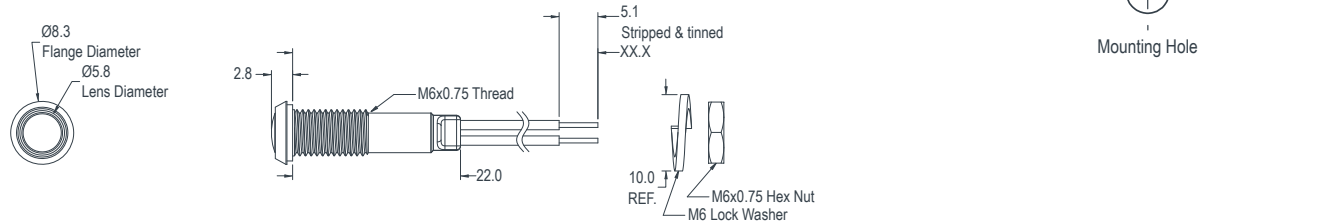
Standard Version

Weight (g): 1.2

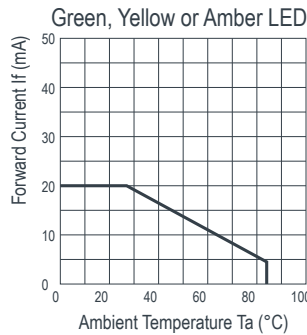
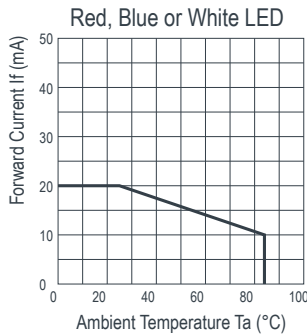


Flying Leads Version

Weight (g): 3.7



DE-RATING GRAPHS



MATERIALS

Body	Polycarbonate	Nut	Stainless Steel
Lens	Polycarbonate	Lock Washer	Stainless Steel
Termination (Standard version)	LED Leads	Sealing Ring	Silicone Rubber
Termination (Flying Leads version)	Wires, Stripped and Tinned		

DESIGN CONSIDERATIONS

Electro-Static Discharge (ESD)

Build up of electro-static discharge occurs in many situations involving people moving and handling products. The range of possible situations is very diverse but voltage levels as high as several thousand volts can and do arise in many individual situations. When an operator charged up to these levels handles a static sensitive device, there is a very probable likelihood that the device will be irreversibly damaged. It is essential that precautions are taken at all stages during manufacture and assembly of these products. Although LEDs were never considered to be static sensitive devices, changes in manufacturing

technology and materials used to produce higher intensity products over a large range of the wavelength spectrum have changed this. MARL has an approved system of ESD control from goods in, through production and into final packing and dispatch. MARL recommend all users of LED based products follow the current BSI guidelines for protection of electronic devices from electrostatic phenomena.

Voltage, Current and Temperature

The forward voltage / current value of an LED is dependent upon the ambient temperature of the environment in which

it is operated. Therefore, care must be taken to operate the LED at the correct voltage / current values, depending upon the ambient temperature.

MARL should be contacted if the device is to be operated outside the temperature range specified. MARL accept no liability for any product that is operated outside the stated voltage or temperature range.

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