

690 series



features



- Ø9.6mm (3/8") mounting
- UL Certified - Certificate Number E349017
- High Intensity LED Panel Indicator
- Black anodised aluminium housing
- Wide viewing angle
- Internal Potting
- 8 - 48Vac/dc
- Bi-polar product
- Sealed to IP67 - weather proof

specifications

Typical characteristics (Ta = 25°C)

Part Number	Colour	Voltage Vac/dc	Current DC (mA)	Luminous Intensity (mcd)	Wave Length (nm)	Operating Temp. (°C)	Storage Temp. (°C)	De-rating Graphs
690-501-66	Red	8-48	10	600	630	-40 - +80	-40 - +100	D
690-521-66	Yellow	8-48	10	600	585	-40 - +80	-40 - +100	D
690-532-66	Green	8-48	10	800	515	-40 - +80	-40 - +100	F
690-930-66	Blue	8-48	10	230	465	-30 - +85	-40 - +100	U
690-940-66	Infrared	8-48	10	20mW/sr	940	-40 - +85	-40 - +85	-
690-946-66	Infrared	8-48	10	20mW/sr	880	-40 - +85	-40 - +85	-
690-997-66	White	8-48	10	1100	* See below	-30 - +85	-40 - +100	I
690-532-66-50	Green	8-48	5	800	515	-40 - +80	-40 - +100	F
690-532-66-51	Green	8-48	5	800	515	-40 - +80	-40 - +100	F

997F-C	*Typical emission colour White			
x	0.31	-	-	-
y	0.32	-	-	-

^ = Voltage for 20mA product is Vf at 20mA, not Vopr

- Products must be de-rated according to the de-rating information. Each de-rating graph refers to specific LEDs. Please refer to graphs on page 3.

- Luminous intensity is measured at 20mA on a discrete LED unless otherwise stated.

- Intensities (lv) and colour shades of white (x, y co-ordinates) may vary between LEDs within a batch

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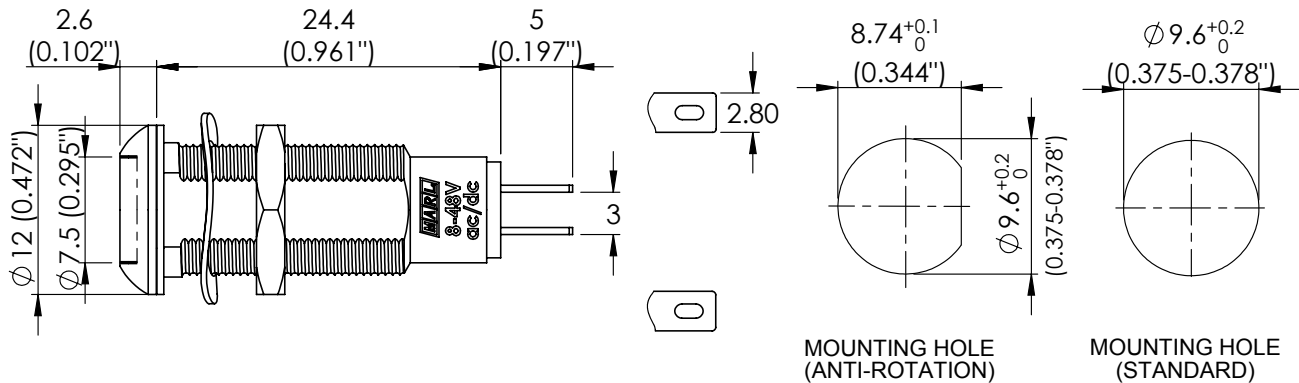
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technical data



Dimensions in mm (typical)

Not to scale

Mounting hole to be clean and burr free

housing material

Body	Black Anodised Aluminium
Nut	Bright Nickel Plated Brass
Panel Seal	Viton
Fresnel Lens	Polycarbonate
Encapsulation	PC5430 Resin
Lock Washer	Spring Steel Wavy Washer
Termination Tags	Brass, Copper Flash, Silver Finish
Header	Nylon 6

technical characteristics

Series	Max. Power Dissipation	Max. Reverse Voltage	Panel Cutout	Nut Mounting Torque	Min. Mounting Centres	Max. Panel Thickness
690	480	50 [^]	9.6 (3/8")	0.6 (0.44 lb/ft)	20 (0.780")	1.5-13.0
units	mW	Vdc	mm	Nm	mm	mm

* = Current Version

[^] = Voltage Version

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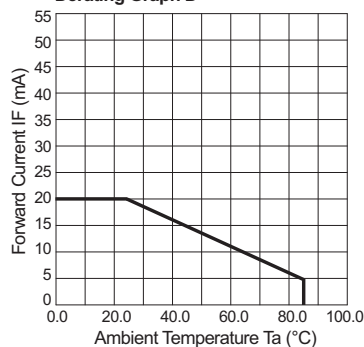


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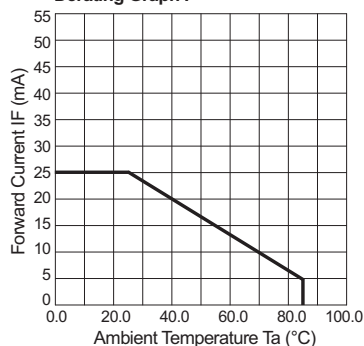


de-rating information

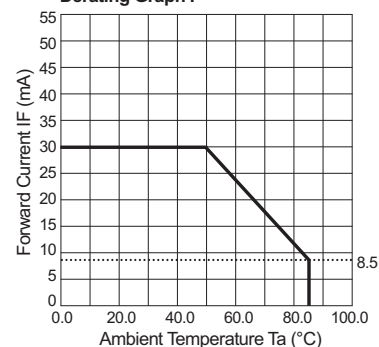
Derating Graph D



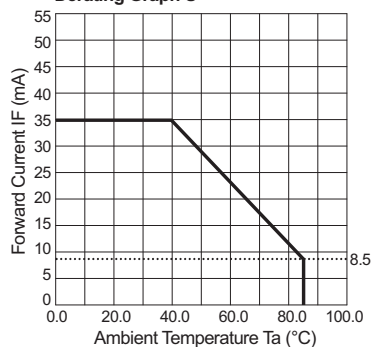
Derating Graph F



Derating Graph I



Derating Graph U



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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 despatch. Marl recommend all users of LED based products follow the guidelines of BS 100015.

Power De-Rating

The forward voltage/ current value of an LED is dependant 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. Consequently, a recommendation regarding operating voltages and currents is given in order to address these temperature effects. This recommendation is termed 'de-rating'. It is usual for forward voltages and currents to be specified for ambient temperature of 25°C. However, because the values of these qualities vary with temperature, please refer to the de-rating graphs for correct operation. Marl accept no liability for any product that is operated higher than the stated voltage.

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