



### FEATURES

- Ø6.35mm mounting
- Black anodised aluminium housing
- Sealed to IP67 - weatherproof
- Wide viewing angle - smoked lens
- Internal potting
- Range of LED colour options
- Range of voltage options

### BENEFITS

- Standard industrial mounting size
- Suitable for portable equipment
- Suitable for external applications
- Smoked lens gives good on/off contrast ratio
- Suitable for high vibration applications
- Suitable for status panel indication
- Manufactured with internal resistor
- Outstanding reliability
- Vandal resistant

Marl Part Number	LED Colour	Typical Voltage DC Vopr	Typical Current DC Iopr	Typical LED Luminous Intensity	Typical LED Wavelength λd	Operating Temp Topr *	Storage Temp Tstg
612-301-04	Red	1.85 **	20	33	640	-40 to +85	-40 to +85
612-325-04	Yellow	2.0 **	20	401	590	-40 to +85	-40 to +85
612-324-04	Green	3.2 **	20	1010	525	-30 to +85	-40 to +85
612-330-04	Red/Green Bi-Colour	2.0/2.2 **	20	20	625/568	-40 to +85	-40 to +85
612-934-04	Blue	3.2 **	20	225	469	-30 to +85	-40 to +85
612-998-04	Cool White	3.2 **	20	1194	See Below	-30 to +85	-40 to +85
612-301-20	Red	5-6	19	33	640	-40 to +85	-40 to +85
612-325-20	Yellow	5-6	18	401	590	-40 to +85	-40 to +85
612-324-20	Green	5-6	16	830	525	-30 to +85	-40 to +85
612-330-20	Red/Green Bi-Colour	5-6	20	20	625/568	-40 to +85	-40 to +85
612-934-20	Blue	5-6	20	225	469	-30 to +85	-40 to +85
612-998-20	Cool White	5-6	16	932	See Below	-30 to +85	-40 to +85
612-301-21	Red	12	18	33	640	-40 to +85	-40 to +85
612-325-21	Yellow	12	18	401	590	-40 to +85	-40 to +85
612-324-21	Green	12	19	1010	525	-30 to +85	-40 to +85
612-330-21	Red/Green Bi-Colour	12	20	20	625/568	-40 to +85	-40 to +85
612-934-21	Blue	12	19	225	469	-30 to +85	-40 to +85
612-998-21	Cool White	12	18	1194	See Below	-30 to +85	-40 to +85
612-301-23	Red	24-28	17 @ 28V	27	640	-40 to +85	-40 to +85
612-325-23	Yellow	24-28	17 @ 28V	308	590	-40 to +85	-40 to +85
612-324-23	Green	24-28	16 @ 28V	830	525	-30 to +85	-40 to +85
612-330-23	Red/Green Bi-Colour	24-28	17 @ 28V	20 @ 20mA	625/568	-40 to +85	-40 to +85
612-934-23	Blue	24-28	14 @ 28V	175	469	-30 to +85	-40 to +85
612-998-23	Cool White	24-28	14 @ 28V	932	See Below	-30 to +85	-40 to +85
612-301-24	Red	48	12	18	640	-40 to +85	-40 to +85
612-325-24	Yellow	48	12	208	590	-40 to +85	-40 to +85
612-324-24	Green	48	12	615	525	-30 to +85	-40 to +85
612-330-24	Red/Green Bi-Colour	48	12	20 @ 20mA	625/568	-40 to +85	-40 to +85
612-934-24	Blue	48	10	125	469	-30 to +85	-40 to +85
612-998-24	Cool White	48	12	648	See Below	-30 to +85	-40 to +85
		Vdc	mA	mcd	nm	°C	°C

Typical Emission Colours Cool White LED				
X	0.296	0.283	0.330	0.330
Y	0.276	0.305	0.360	0.318

### OPTIONAL FLYING LEAD TERMINATORS

Marl Part No Suffix	Wire Length	Wire Colour	No/Diameter of Conductors	Diameter of Insulation	Wire Specification
612-301-04-15	150mm	Red - Anode	19/0.16mm	1.2mm	Type 44, 22 Gauge High Performance Wire
612-301-04-19	1000mm	Black - Cathode			

### NOTES

Intensities (Iv) and colour shades of white (X-Y co-ordinates) may vary between LEDs within a batch. Additional LED Colours, Voltage Options and Flying Lead lengths available for semi-custom projects. Please contact our Sales Team. All LED components are supplied in anti-static packaging.

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

\*\* These are Current models and the voltage shown is Vf at 20mA, not Vopr. Additionally, there is no reverse protection diode in Current models.

To order please contact us on +44 (0) 1229 582 430

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### TECHNICAL CHARACTERISTICS

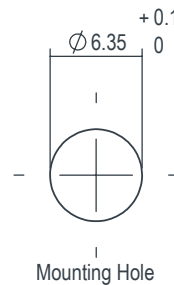
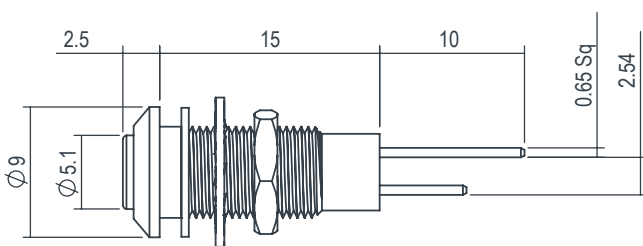
Series	Max. Power Dissipation	Max. Reverse Voltage	Panel Cutout	Nut Mounting Torque	Min. Mounting Centres	Min. - Max. Panel Thickness
612	500	3*75 <sup>^</sup>	6.35	0.6	11.0	1.5 - 7.0
	mW	Vdc	mm	Nm	mm	mm

\* = Current version    ^ = Voltage version

### TECHNICAL DRAWING

Weight (g): 5

Dimensions in mm (typical). Not to scale. Mounting hole to be clean and burr free. Anode termination denoted by long pin.



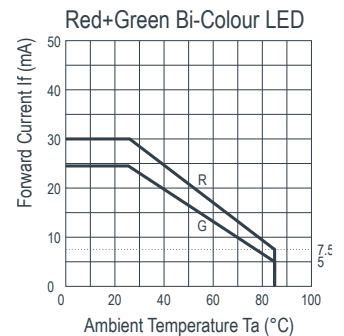
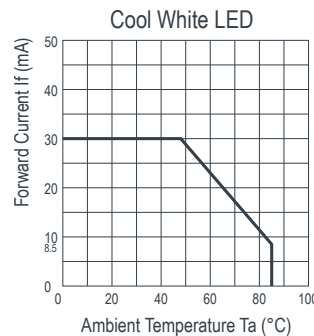
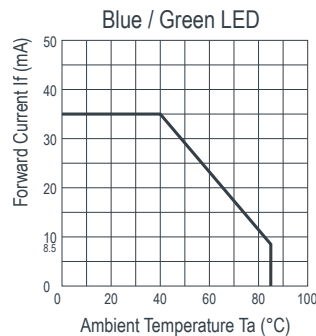
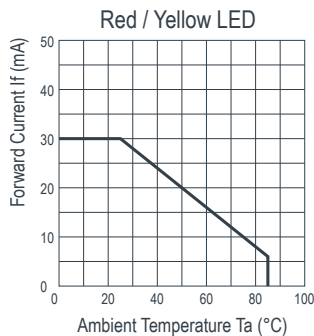
#### PUSH ON CONNECTOR



909-000-00 is gold plated, 910-000-00 is tin plated - for use with 612 series lamps.

Dimensions in mm (typical). Not to scale.

### DE-RATING GRAPHS



### MATERIALS

Body	Black Anodised Aluminium
Nut	Nickel Plated Brass
Panel Seal	Viton
Lens	Polycarbonate
Encapsulation	Black Polyurethane
Lock Washer	Spring Steel
Termination	Silver Flash Coated Brass

### 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.

#### 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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