

612 SERIES

PANEL INDICATOR LED



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	Max. Reverse Voltage	Typical LED Luminous Intensity	Typical LED Wavelength λp	Operating Temp Topr *	Storage Temp Tstg
612-301-04	Red	1.85 **	20	3	33	660	-40 to +85	-40 to +85
612-325-04	Yellow	2.0 **	20	3	401	590	-40 to +85	-40 to +85
612-324-04	Green	3.2 **	20	3	1010	525	-30 to +85	-40 to +85
612-330-04	Red/Green Bi-Colour	2.0/2.2 **	20	3	20	627/565	-40 to +85	-40 to +85
612-338-04-15	Red/Green/Amber Tri-Colour †	2.0/2.2 **	20	3	30/40	627/565	-40 to +85	-40 to +85
612-934-04	Blue	3.2 **	20	3	225	465	-30 to +85	-40 to +85
612-998-04	Cool White	3.2 **	20	3	1194	See Below	-30 to +85	-40 to +85
612-301-20	Red	5-6	19	75	33	660	-40 to +85	-40 to +85
612-325-20	Yellow	5-6	18	75	401	590	-40 to +85	-40 to +85
612-324-20	Green	5-6	16	75	830	525	-30 to +85	-40 to +85
612-330-20	Red/Green Bi-Colour	5-6	20	75	20	627/565	-40 to +85	-40 to +85
612-934-20	Blue	5-6	20	75	225	465	-30 to +85	-40 to +85
612-998-20	Cool White	5-6	16	75	932	See Below	-30 to +85	-40 to +85
612-301-21	Red	12	18	75	33	660	-40 to +85	-40 to +85
612-325-21	Yellow	12	18	75	401	590	-40 to +85	-40 to +85
612-324-21	Green	12	19	75	1010	525	-30 to +85	-40 to +85
612-330-21	Red/Green Bi-Colour	12	20	75	20	627/565	-40 to +85	-40 to +85
612-934-21	Blue	12	19	75	225	465	-30 to +85	-40 to +85
612-998-21	Cool White	12	18	75	1194	See Below	-30 to +85	-40 to +85
612-301-23	Red	24-28	17 @ 28V	75	27	660	-40 to +85	-40 to +85
612-325-23	Yellow	24-28	17 @ 28V	75	308	590	-40 to +85	-40 to +85
612-324-23	Green	24-28	16 @ 28V	75	830	525	-30 to +85	-40 to +85
612-330-23	Red/Green Bi-Colour	24-28	17 @ 28V	75	20 @ 20mA	627/565	-40 to +85	-40 to +85
612-934-23	Blue	24-28	14 @ 28V	75	175	465	-30 to +85	-40 to +85
612-998-23	Cool White	24-28	14 @ 28V	75	932	See Below	-30 to +85	-40 to +85
		Vdc	mA	Vdc	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 semicustom projects. Please contact our Sales Team. All LED components are supplied in anti-static packaging.

† Tri-Colour model has 3x 150mm flying leads (Anode Red, Anode Green and Common Cathode). Amber is generated by powering Red and Green simultaneously.

* 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

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DSN 612 Version DS006/2021. Page 1 of 2

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PANEL INDICATOR LED



TECHNICAL CHARACTERISTICS

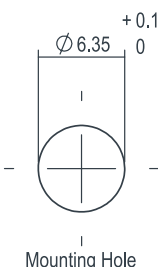
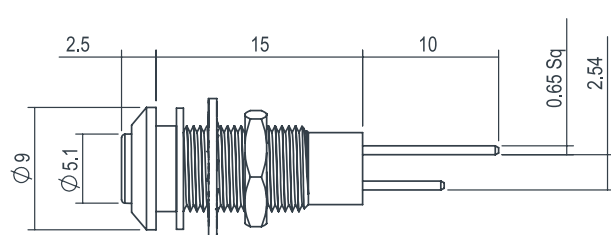
Series	Max. Power Dissipation	Panel Cutout	Nut Mounting Torque	Min. Mounting Centres	Min - Max. Panel Thickness
612	500	6.35	0.6	11.0	1.5 - 7.0
	mW	mm	Nm	mm	mm

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.

Tri-colour model uses 3x 150mm flying leads instead of pins: Red = Red Anode, Green = Green Anode, Black = Common Cathode



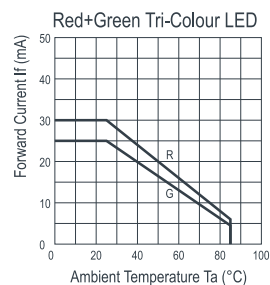
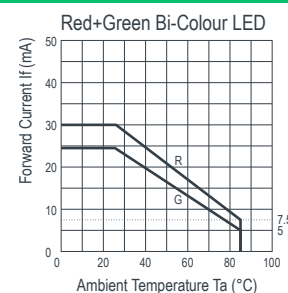
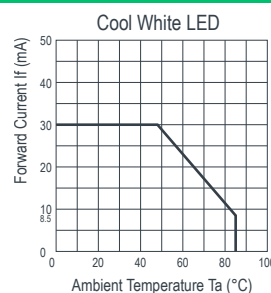
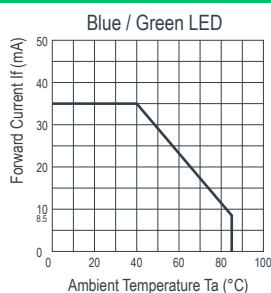
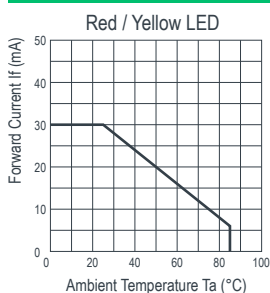
PUSH ON CONNECTOR



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

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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DSN 612 Version DS006/2021. Page 2 of 2