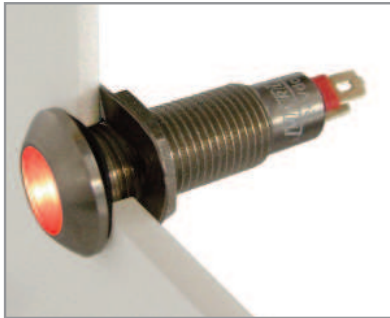


524 series



features



- Industrial LED Indicator - Ø 8.1mm mounting
- Robust stainless steel housing
- Low profile styling and Wide viewing angle
- Sunlight readable LEDs
- Sealed to IP67
- Colour diffused lens
- Suitable for high vibration applications
- Internal reverse protection diode fitted as standard
- Pack quantity = 10 pieces

specifications

Typical characteristics (Ta = 25°C)

Part Number	Colour	Voltage DC (Vdc) Vopr	Current DC (mA) Iopr	Luminous Intensity (mcd) Iv at 20mA	Wave Length (nm) λp	Operating Temp. (°C) Topr	Storage Temp. (°C) Tstg	De-rating Graphs
high intensity								
524-501-21	Red	12	20	600	630	-40 ~ +80^	-40 ~ +100	D
524-521-21	Yellow	12	20	600	585	-40 ~ +80^	-40 ~ +100	D
524-532-21	Green	12	20	800	515	-40 ~ +80^	-40 ~ +100	F
524-930-21	Blue	12	20	400	465	-40 ~ +80^	-40 ~ +100	F
524-997-21	Cool White	12	20	1200	*	-40 ~ +80^	-40 ~ +100	F
524-501-23	Red	24 - 28	20	600	630	-40 ~ +80^	-40 ~ +100	D
524-521-23	Yellow	24 - 28	20	600	585	-40 ~ +80^	-40 ~ +100	D
524-532-23	Green	24 - 28	20	800	515	-40 ~ +80^	-40 ~ +100	F
524-930-23	Blue	24 - 28	20	400	465	-40 ~ +80^	-40 ~ +100	F
524-997-23	Cool White	24 - 28	20	1200	*	-40 ~ +80^	-40 ~ +100	F

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

997	*Typical Emission Colour Cool White
x	0.31
y	0.32

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

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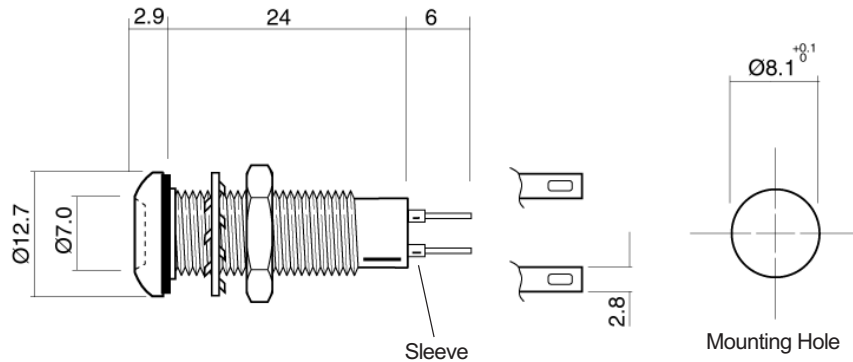
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524 series

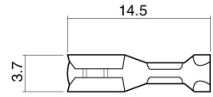


technical data



Dimensions in mm (typical)
Not to scale

Anode termination indicated by red sleeve
Mounting hole to be clean and burr free

housing material		push on connectors
Body	Stainless Steel grade 303	925-000-00 is Brass Tin Plated. For use with 524 Series Lamps  Dimensions in mm (typical) Not to scale.
Nut	Stainless Steel grade 303	
Panel Seal	Viton	
Termination	Brass to BS 2874 CZ108 Copper flash undercoat with silver flash finish	
Lock Washer	Stainless Steel	
Fresnel Lens	Polycarbonate	
Encapsulation	PC5430 Resin	

technical characteristics

Series	Max. Power Dissipation	Max. Reverse Voltage	Panel Cutout	Nut Mounting Torque	Min. Mounting Centres	Max. Panel Thickness
524	825	1000	8.1	0.65	x, y = 14.5	1.5 - 13.0
units	mW	Vdc	mm	Nm	mm	mm

optional flying lead terminators

Order Code Suffix	Supply Voltage	Wire Colour	Wire Length	No/Diameter of Conductor	Diameter Insulation	Comments
15	DC products	Red-anode/ Black-cathode	150mm	19/ 0.15mm	1.2mm	Customised lengths available
15	AC products	Brown-live/ Blue-neutral	150mm			
19	DC products	Red-anode/ Black-cathode	1000mm			
19	AC products	Brown-live/ Blue-neutral	1000mm			

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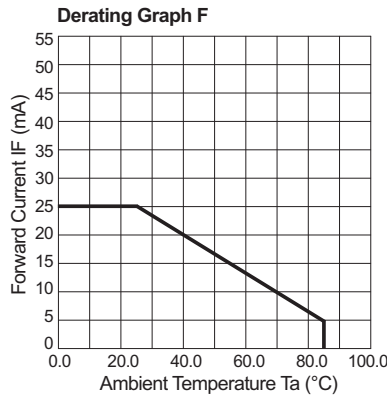
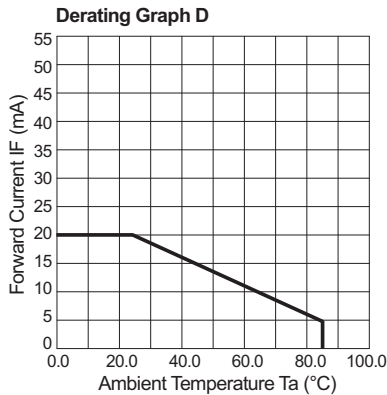
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524 series



de-rating information



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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524 series



also available

Part numbers also available in the 524 series:

Part Number	Colour	Voltage DC (Vdc) Vopr			
524-501-04	Red	*20mA	524-532-20-19	Green	5/6Vdc
524-501-04-15	Red	*20mA	524-532-20-22	Green	5/6Vdc
524-501-20	Red	5/6Vdc	524-532-21-22	Green	12Vdc
524-501-20-19	Red	5/6Vdc	524-532-22	Green	24Vdc
524-501-20-22	Red	5/6Vdc	524-532-22-15	Green	24Vdc
524-501-21-15	Red	12Vdc	524-532-22-22	Green	24Vdc
524-501-22	Red	24Vdc	524-532-24	Green	48Vdc
524-501-22-22	Red	24Vdc	524-532-24-19	Green	48Vdc
524-501-24	Red	48Vdc	524-532-24-22	Green	48Vdc
524-501-24-19	Red	48Vdc	524-532-25	Green	110Vdc
524-501-25	Red	110Vdc	524-532-72-15	Green	24Vac
524-501-75-15	Red	110Vac	524-532-75-15	Green	110Vac
524-501-76-15	Red	230Vac	524-532-76-15	Green	230Vac
524-501-86-19	Red	115Vac	524-532-86	Green	115Vac
524-512-04	Green	*20mA	524-532-86-22	Green	115Vac
524-512-21	Green	12Vdc	524-930-04	Blue	*20mA
524-512-24	Green	48Vdc	524-930-04-15	Blue	*20mA
524-512-86	Green	115Vac	524-930-04-50	Blue	*20mA
524-521-04	Yellow	*20mA	524-930-20	Blue	5/6Vdc
524-521-04-15	Yellow	*20mA	524-930-21-15	Blue	12Vdc
524-521-20	Yellow	5/6Vdc	524-930-21-19	Blue	12Vdc
524-521-20-19	Yellow	5/6Vdc	524-930-22	Blue	24Vdc
524-521-20-22	Yellow	5/6Vdc	524-930-24	Blue	48Vdc
524-521-21-15	Yellow	12Vdc	524-930-25	Blue	110Vdc
524-521-22	Yellow	24Vdc	524-997-04	White	*20mA
524-521-22-22	Yellow	24Vdc	524-997-04-15	White	*20mA
524-521-24-22	Yellow	48Vdc	524-997-21-15	White	12Vdc
524-523-23	Red	28Vdc	524-997-22	White	24Vdc
524-525-23	Green	28Vdc	524-997-22-22	White	24Vdc
524-530-04-50	Red/ Green	*20mA	524-997-24	White	48Vdc
524-530-20	Red/ Green	5/6Vdc	524-997-24-22	White	48Vdc
524-530-21-15	Red/ Green	12Vdc	524-997-72	White	24Vac
524-530-23	Red/ Green	28Vdc	524-997-86-22	White	115Vac
524-532-04	Green	*20mA			
524-532-04-15	Green	*20mA			
524-532-20	Green	5/6Vdc			
524-532-20-15	Green	5/6Vdc			

The products listed above illustrate all of the options available to order. These products may have custom modifications that alter their operation beyond the generic information contained within this datasheet. Please contact sales for further information.

* = These products do not contain an integral resistor.

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