

# QRM14 SERIES Rear Panel Mount LED Indicators

## Distinctive features and specifications

QRM14\_VOY1701US

### Features

- Ø14mm rear panel mount LED indicator
- 10mm flush diffused LED, standard, hyper bright or water clear
- Bi-color and Tri-color LED options
- Black chrome finish
- 2VDC – 28VAC/DC
- 200mm wires
- IP67 sealed (EN60529)
- Epoxy sealed rear end
- Supplied with fixing nut, spring washer and O-ring



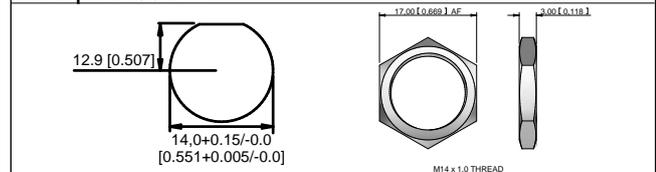
NB: UL Recognized Component

### TECHNICAL SPECIFICATIONS

Voltage	Operating Voltage (Min to Max)	Operating Current (Typical All Types)
02 (No Resistor)	1.8 to 3.8VDC	20mA max*
6VDC	5.4 to 6.6VDC	20mA
12VDC	10.8 to 13.2VDC	20mA
24VDC	21.6 to 26.4VDC	20mA
28VDC	25.2 to 30.8VDC	20mA

<b>Max Reverse Voltage:</b> 5V
<b>Viewing Angle:</b> 60°
<b>Life Expectancy:</b> 100,000 hours
<b>Operating Temperature Range:</b> -40 to +85°C
<b>Storage Temperature Range:</b> -55 to +100°C
<b>Max panel thickness:</b> 10mm
<b>Torque:</b> 75cNm

Materials	
<b>Body:</b> Black chrome plated brass	<b>Lock washer:</b> Spring steel
<b>Nut:</b> Black chrome plated brass	<b>Terminal seal:</b> Epoxy
<b>Panel seal:</b> Nitrile O-ring	<b>Wires:</b> 22AWG to UL1061



Standard LED Intensity	Prominent and Recessed	Flush	Forward Voltage
HE Red	80mcd	10mcd	2.0V
Green	60mcd	5mcd	2.2V
Yellow	50mcd	4mcd	2.1V
Blue	540mcd	100mcd	3.3V
White	1000mcd	150mcd	3.3V
Orange	80mcd	200mcd	2.0V
Bi-color (Typical) (Red/Green)	15/15mcd	14/10mcd	2.0V/2.2V
Tri-color (Typical) (Red/Green/Yellow)	60/50/50mcd	15/10/30mcd	2.0V/2.2V/2.1V

Bi-color - The color is changed by reversing the polarity of the supply voltage.

Tri-color - The indicator has red and green LEDs, when both connected yellow is produced.

Super Bright LED	Prominent and Recessed	Flush	Forward Voltage
HE Red	17,000mcd	2,000mcd	2.2V
Green	11,000mcd	680mcd	3.5V
Yellow	4,000mcd	350mcd	2.3V
Blue	2,500mcd	250mcd	3.3V
White	4,400mcd	250mcd	3.3V
Orange	2800mcd	300mcd	2.1V

Hyper Bright LED	Prominent and Recessed	Flush	Forward Voltage
HE Red	2,800mcd	800mcd	2.1V
Green	2,200mcd	250mcd	3.2V
Yellow	1,300mcd	250mcd	2.0V
Orange	850mcd	200mcd	2.1V

Luminous intensity will be reduced with lower operating current.

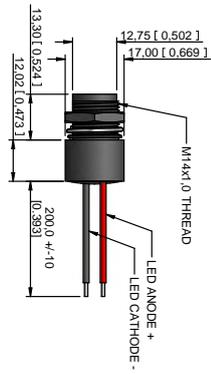
Note: The operating voltage must not be exceeded by more than 10% as this will result in reduced life expectancy.  
 The company reserves the right to change specifications without notice. \* Customer to supply resistor for desired operating current.  
 Luminous intensity is measured at 20mA on a discrete LED unless otherwise stated. Luminous intensities and color shades of white LEDs may vary within a batch.  
 LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal.

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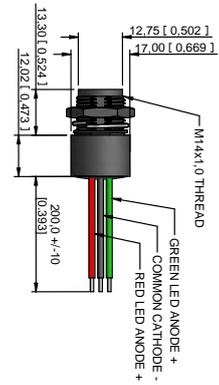
## Technical Drawings



Wires - Single & Bi-color LED



Wires - Tri-color LED



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## Overview

### STANDARD OPTIONS

The QRM Series is available with a range of standard options, to specify your LED, simply choose one option from each column. An example is shown below.

QRM	14	5	B	XX	HB	24A	E
SERIES	MOUNTING HOLE	TERMINALS	BEZEL FINISH	TYPE OF ILLUMINATION	LED COLOR	VOLTAGE	SEALING
QRM	14 = Ø14mm	5 = Wires	B = Black Chrome	XX = Fixed light YY = Bi-color ZZ = Tri-color	R = Red G = Green Y = Yellow B = Blue W = White O = Orange  HR = Hyper Bright Red HG = Hyper Bright Green HY = Hyper Bright Yellow HO = Hyper Bright Orange  SR = Super Bright Red SG = Super Bright Green SY = Super Bright Yellow SB = Super Bright Blue SW = Super Bright White SO = Super Bright Orange  RG = Red/Green RY = Red/Yellow GY = Green/Yellow  RYG = Red/Yellow/Green	02 = no resistor* 06 = 6VDC 12 = 12VDC 12A = 12VAC/DC 24 = 24VDC 24A = 24VAC/DC 28 = 28VDC 28A = 28VAC/DC	E = IP67 (Standard)

#### Example QRM145BXXR12E

Ø14mm, rear mount, wire termination, blue red LED, black chrome finish, fixed light 12VDC LED, IP67 panel sealed,



- Standard wire length is 200mm, 22AWG UL1061, red wire denotes Anode (+), black wire denotes Cathode (-) for other wire lengths consult APEM
- For LEDs with alternate voltages consult APEM
- Bi-color LEDs, by connecting the gold Faston (+) one colour is produced, by reversing the supply voltage another colour is produced – Bi-colours are available up to 28VDC
- Take care when soldering (recommended solder temperature 300°C - 3 sec)
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Standard Tri-color termination is two Anodes (+) and one Cathode (-)
- Tri-color wires are one red (+) and one green (+) Anode and one black (-) Cathode
- Tri-color pins are center (-) Cathode, shortest (+) Anode pin green, longest (+) Anode pin red
- Maximum panel thickness 10mm
- For multi-voltage options please consult APEM

\* = For resistorless versions (02) please refer to the forward voltage on page 1