

# QRM6 series

Ø6 mm rear panel mount LED indicators



## DISTINCTIVE FEATURES

- 3 mm flush diffused LED, standard, hyper bright or clear water
- Bi-color LED options
- 200 mm wire or pin terminations



## ENVIRONMENTAL SPECIFICATIONS

- IP67 sealing option (EN60529)
- Operating Temperature Range: -40 °C to +85 °C (-40 °F to +185 °F)
- Storage Temperature Range: -55 °C to +100 °C (-67 °F to +212 °F)



## GENERAL SPECIFICATIONS

- Max Reverse Voltage: 5 V
- Viewing Angle: 60°
- Life Expectancy: 100,000 hours
- Max Panel Thickness: 3.5 mm
- Torque: 60 cNm

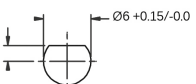
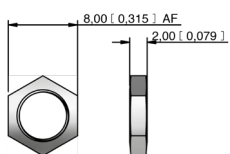


## MATERIALS

- Body: Black plated brass or anodized aluminum
- Lock Washer: Spring steel
- Nut: Black plated brass
- Terminal Seal: Epoxy
- Panel Seal: Nitrile O-ring
- Wires: 24 AWG to UL1061 or UL1213 on request



## MOUNTING



The company reserves the right to change specifications without notice.

LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal and subject to variations.



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## ELECTRICAL SPECIFICATIONS

### STANDARD LED INTENSITY

| LED COMPONENT SPECIFICATIONS      |                           |                 |
|-----------------------------------|---------------------------|-----------------|
|                                   | MCD Output (all voltages) | Forward Voltage |
| HE Red                            | 10 mcd                    | 2.0 V           |
| Green                             | 8 mcd                     | 2.2 V           |
| Yellow                            | 6 mcd                     | 2.1 V           |
| Blue                              | 200 mcd                   | 3.8 V           |
| White                             | 500 mcd                   | 3.3 V           |
| Bi-color (Typical)<br>(Red/Green) | 10/8 mcd                  | 2.0 V/2.2 V     |

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

### SUPER BRIGHT LED INTENSITY

| LED COMPONENT SPECIFICATIONS |                           |                 |
|------------------------------|---------------------------|-----------------|
|                              | MCD Output (all voltages) | Forward Voltage |
| HE Red                       | 700 mcd                   | 2.2 V           |
| Green                        | 2,000 mcd                 | 3.5 V           |
| Yellow                       | 8,000 mcd                 | 2.3 V           |
| Blue                         | 200 mcd                   | 3.3 V           |
| White                        | 350 mcd                   | 3.3 V           |
| Orange                       | 500 mcd                   | 2.2 V           |

### HYPER BRIGHT LED INTENSITY

| LED COMPONENT SPECIFICATIONS |                           |                 |
|------------------------------|---------------------------|-----------------|
|                              | MCD Output (all voltages) | Forward Voltage |
| HE Red                       | 600 mcd                   | 2.2 V           |
| Green                        | 350 mcd                   | 3.2 V           |
| Yellow                       | 140 mcd                   | 2.0 V           |

- The operating voltage must not be exceeded by more than 10% as this will result in reduced life expectancy
- Luminous intensity is measured at 20 mA on a discrete led unless otherwise stated.
- Luminous intensities and color shades of white LEDs may vary within a batch.
- Luminous intensity will be reduced with lower operating current.

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

\* Customer to supply resistor for desired operating current.

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## BUILD YOUR PART NUMBER

|                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                 |
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| <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">QRM</div> <p>.....</p> <p><b>SERIES</b></p>                                                                                                                                                                                                                                    | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">—</div> <p>.....</p> <p><b>MOUNTING HOLE</b></p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">6</div> <p>Ø6 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">—</div> <p>.....</p> <p><b>TERMINALS</b></p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">4</div> <p>Pins</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">5</div> <p>Wires</p>                                                                                                                                                                                                                                                           | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">—</div> <p>.....</p> <p><b>BEZEL FINISH</b></p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">B</div> <p>Black</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">AK</div> <p>Anodized Dark Olive</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">AN</div> <p>Anodized Black</p>                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                 |
| <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">—</div> <p>.....</p> <p><b>TYPE OF ILLUMINATION</b></p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">XX</div> <p>Fixed Light</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">YY</div> <p>Bi-color</p> | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">—</div> <p>.....</p> <p><b>LED COLOR</b></p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">R</div> <p>Red</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">G</div> <p>Green</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">Y</div> <p>Yellow</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">B</div> <p>Blue</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">W</div> <p>White</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">HR</div> <p>Hyper Bright Red</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">HG</div> <p>Hyper Bright Green</p> | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">HY</div> <p>Hyper Bright Yellow</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SR</div> <p>Super Bright Red</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SG</div> <p>Super Bright Green</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SY</div> <p>Super Bright Yellow</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SB</div> <p>Super Bright Blue</p> | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SW</div> <p>Super Bright White</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">SO</div> <p>Super Bright Orange</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">RG</div> <p>Red/Green</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">RY</div> <p>Red/Yellow</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">GY</div> <p>Green/Yellow</p> | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">02</div> <p>no resistor*</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">06</div> <p>6 VDC</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">12</div> <p>12 VDC</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">24</div> <p>24 VDC</p> <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">28</div> <p>28 VDC</p> <p><small>* please refer to the forward voltage in electrical specifications</small></p> | <div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">E</div> <p>IP67 (Standard)</p> |



## ABOUT THIS SERIES



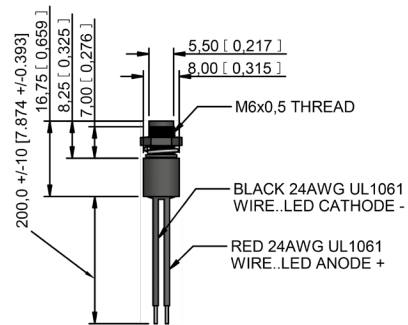
**Notice:** please note that not all combinations of above numbers are available.

- Standard wire length is 200 mm, 24 AWG UL1061, red wire denotes Anode (+), black wire denotes Cathode (-) for other wire lengths consult APEM
- For LEDs with alternate voltages and multi-voltage options consult APEM
- Bi-color LEDs, by connecting the gold Faston (+) one color is produced, by reversing the supply voltage another color is produced. Bi-color are available up to 28 VDC
- Take care when soldering (recommended solder temperature 270 °C - 2 sec)

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## REAR MOUNT - WIRE TERMINALS WITH STANDARD BODY



## REAR MOUNT - PINS TERMINALS WITH STANDARD BODY

