

# QS SERIES Snap-in Panel Mount LED Indicators

Distinctive features and specifications

QS\_VOY1609US

## Features

- 6mm, 8mm, 10mm and 12mm Ø cut-out sizes
- Front panel snap-in mounting requires no additional hardware
- Colored diffused flat lenses
- Red, Green, Yellow, Blue, Orange, White (clear)
- 2VDC – 220VAC
- 6mm solder lug (2.0x0.5mm) or 200mm wire terminations
- 8mm, 10mm, 12mm solder lug/Faston (2.8x0.8mm) or 200mm wire terminations
- Standard intensity diffused LED or high brightness LED for daylight viewing
- Bi-color and Tri-Color (8 and 10mm only) options

NB: UL Recognized Component



## TECHNICAL SPECIFICATIONS

Voltage	Operating Voltage (Min to Max)	Operating Current (Typical All Types)
02 (No Resistor)	1.8 to 2.5VDC	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
110VAC (not available on QS6)	99 to 110VAC	6mA
220VAC (not available on QS6)	207 to 253VAC	3mA

<b>Max Reverse Voltage:</b> 5V
<b>Viewing Angle:</b> 30–100° (dependant on model)
<b>Life Expectancy:</b> 100,000 hours
<b>Operating Temperature Range:</b> –40 to +85°C

Standard LED	6mm Intensity (all voltages)	8,10 & 12mm Intensity	Forward Voltage
HE Red	40mcd	100mcd	2.0V
Green	40mcd	60mcd	2.2V
Yellow	30mcd	50mcd	2.1V
Blue	1,200mcd	1600mcd	3.8V
White(clear)	1,200mcd	1600mcd	3.8V
Orange	60mcd	45mcd	2.0V
Bi-color (Typical) (Red/Green)	20/15mcd	30/12mcd	2.0V/2.2V
Tri-color (Typical) (Red/Green/Yellow)	-	60/15/13mcd	2.5V

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.

High Brightness	6mm Intensity (all voltages)	8,10 & 12mm Intensity	Forward Voltage
HE Red	3,700mcd	6,000mcd	2.2V
Green	2,000mcd	1,900mcd	3.2V
Yellow	1,200mcd	2,100mcd	2.0V
Orange	4,500mcd	4,500mcd	2.2V

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.

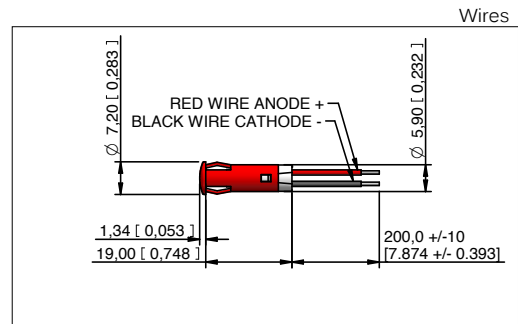
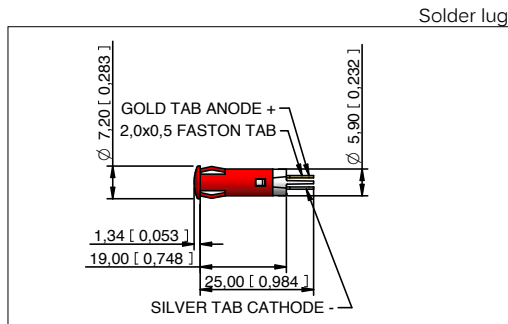
Luminous intensities and color shades of white LEDs may vary within a batch.

LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal.

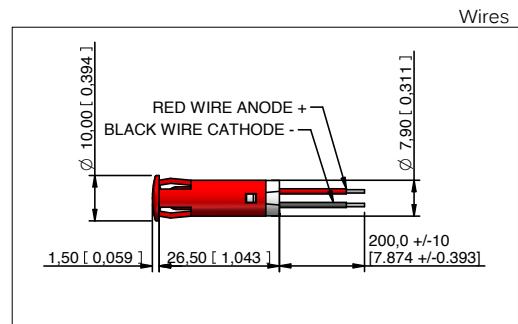
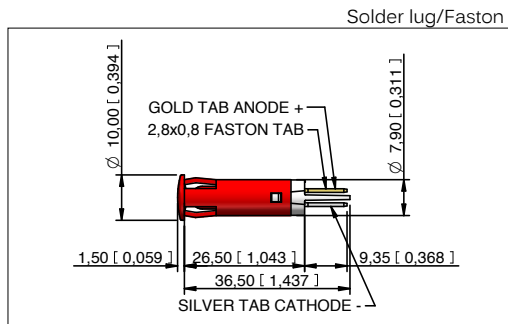
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## Technical Drawings

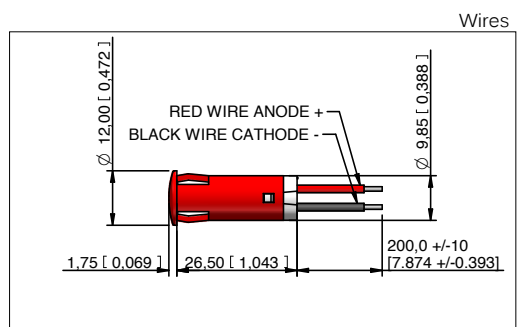
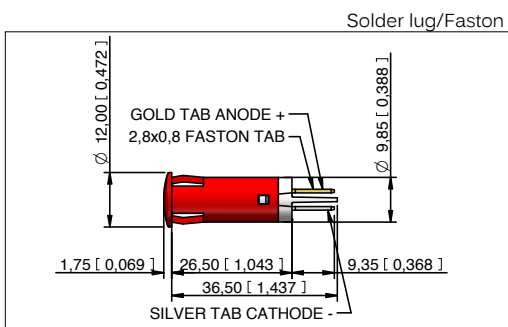
Ø6mm



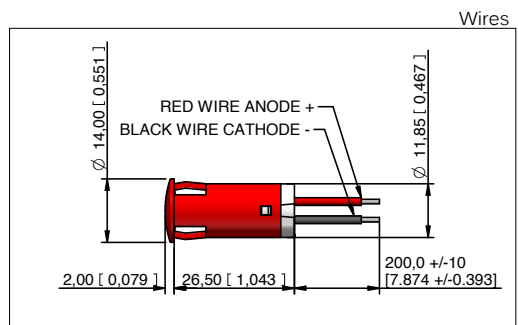
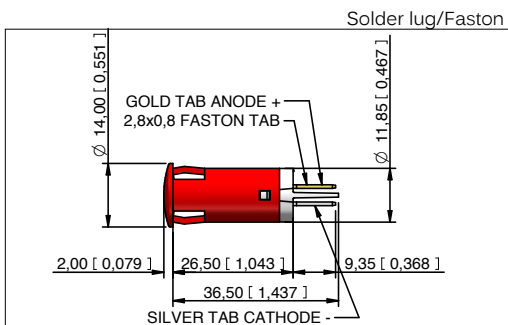
Ø8mm



Ø10mm



Ø12mm



# QS SERIES Snap-in Panel Mount LED Indicators

## Order Overview

### STANDARD OPTIONS

The QS 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.

QS	8	3	XX	R	220
SERIES	MOUNTING HOLE	TERMINALS	TYPE OF ILLUMINATION	LED COLOR	VOLTAGE
QS	6 = Ø6mm 8 = Ø8mm 10 = Ø10mm 12 = Ø12mm	1 = Solder lug/ faston 3 = Wires	XX = Fixed light YY = Bi-color ZZ = Tri-color (10mm only) KK = Flashing light (12 - 28VDC)	R = Red G = Green Y = Yellow B = Blue W = White (clear) O = Orange  HR = Hyper Bright Red HG = Hyper Bright Green HY = Hyper Bright Yellow HO = Hyper Bright Orange  RG = Red/Green  RYG = Red/Yellow/Green (10mm Only)	02 = no resistor* 06 = 6VDC 12 = 12VDC 24 = 24VDC 28 = 28VDC 110 = 110VAC 220 = 220VAC

#### Example QS83XXR220

Ø8mm mounting hole with wire terminations  
fixed light, Red 220VAC



- Gold solder lug/Faston terminal denotes Anode (+), silver terminal denotes Cathode (-)
- Standard wire length is 200mm, QS6 & QS8 24AWG UL1061, QS10 & QS12 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 color is produced, by reversing the supply voltage another color is produced – Bi-colors are available up to 28VDC
- Take care when soldering to the Faston terminals (recommended solder temperature 270°C - 2 sec)
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Maximum panel thickness 11mm
- We recommend using high brightness LEDs for use at 220VAC
- For multi-voltage options please consult APEM

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