# Quarton inc.

## Industrial Use Line Laser
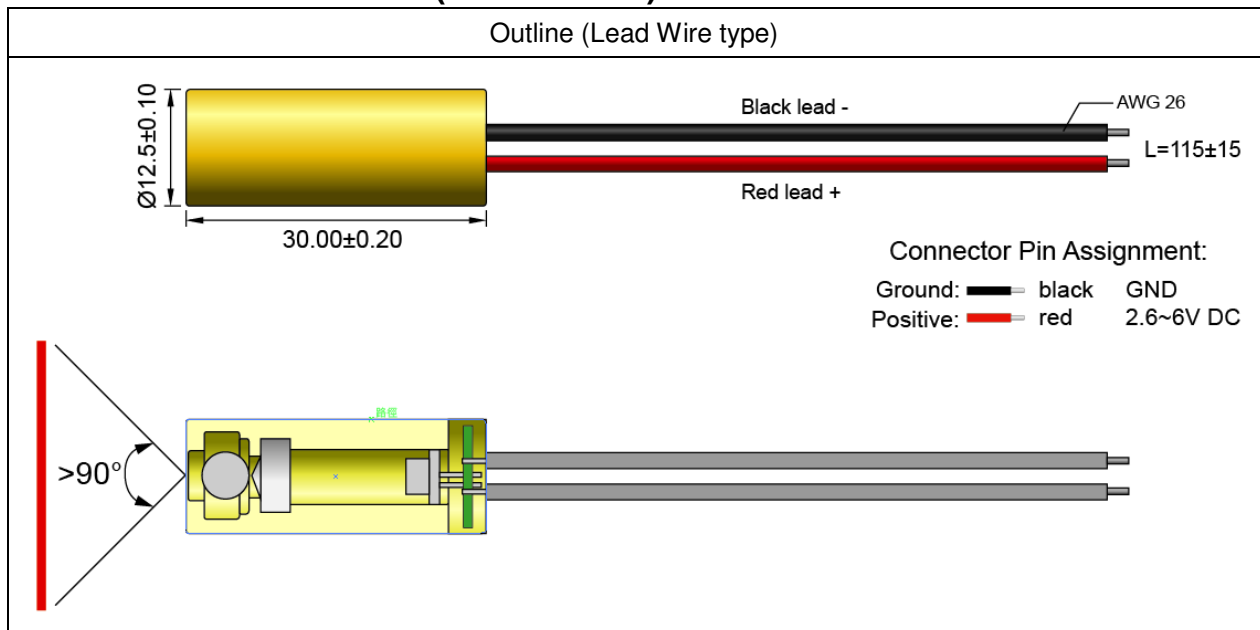
## VLM-650-27 Series



## FEATURES:

- Industrial Red Line Laser.
- The best line-accuracy and the widest emitting angle line Laser module for use with high-precision devices.
- This module has integrated quartz cylindrical lens, collimating lens, laser diode, and APC driver circuit.
- APC driver circuit enables the Laser output power safe and constant.
- Includes patented solid brass structure for the best shock resistance and better heat transfer consideration.
- Aspherical Plastic Lens and Quartz Cylindrical Lens provides Line Laser.
- Dimensions : Ø12.5 x 30 mm (Ø0.492" x 1.181")
- Wavelength : 650 nm
- Two laser power output : Class 1M / Class 2M
- Laser line accuracy: 40" (+/- 1mm @5m).
- Emitting Angle : >90°
- 2.6~6 VDC operation.
- Connection type : Lead wire

## APPLICATIONS:

- High accuracy Red Straight Line Laser, for Industrial high-precision leveling, alignment, adjusting, positioning, measuring and targeting device.
- Wood processing.
- Metal processing.
- Stone processing.
- Textile industry.
- Food industry.
- Automotive industry.
- Medical science.

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## VLM-650-27 Series

## OUTLINE DIMENSIONS (UNITS: mm)



Outline (Lead Wire type)

Ø12.5±0.10
30.00±0.20

Black lead -
Red lead +
AWG 26
L=115±15

Connector Pin Assignment:
Ground: ▬▬ black   GND
Positive: ▬▬ red   2.6~6V DC

>90°

## SPECIFICATIONS

| SPECIFICATIONS | VLM-650-27 | |
|---|---|---|
| | LPT | LPT-30 |
| 1 Dimensions | Ø12.5 x 30 mm (Ø0.492" x 1.181") | |
| 2 Operating voltage (Vop) | 2.6~6 VDC | |
| 3 Operating current (Iop) | Less than 35mA | Less than 100mA |
| 4 Optical power* | Less than 2mW | 12~15mW |
| 5 Laser power output** | Less than 0.39mW | Less than 0.9mW |
| 6 Laser class | Class 1M | Class 2M |
| 7 Wavelength at peak emission (λp) | 645~665nm | |
| 8 Cylindrical lens | Quartz cylindrical lens | |
| 9 Collimating lens | Aspherical plastic lens | |
| 10 Beam shape | Line | |
| 11 Laser Line width | 3 ±0.5mm @5m, 6 ±0.5mm @10m | |
| 12 Laser line accuracy | 40" (± 1mm @5M) | |
| 13 Emitting angle | More than 90° | |
| 14 Operating temp. range*** | +10°C ~+40°C | |
| 15 Storage temp. range | -20°C ~+65°C | |
| 16 Housing material | Brass | |
| 17 Potential housing**** | VDD(+) | |

## VLM-650-27 Series

| 18 | Electrostatic discharge (ESD) | 30KV |
|---|---|---|
| 19 | Moisture sensitivity level (MSL) | Level 1 - acc to JEDEC J-STD-020E. |
| 20 | Wire type | 1007-26 AWG |
| 21 | Cable length | 115±15mm |
| 22 | Mean time to failure (MTTF) 25°C | 10000hrs |
| 23 | Application | General industrial alignment |
| 24 | Suggestion work distance | Above 2 meters |

\* Optical power is total power output measured at the aperture of the laser.

\*\* According to FDA 1040.10 & IEC 60825-1 regulations, laser power output is measured by 7mm aperture stop from a 10 cm distance of the laser.

\*\*\* Operation temperature means within this temperature range, the laser spot/line will not be affected to change the spot size/line width. It can still work over this range, but the laser spot size or laser line width will be larger.

\*\*\*\* Laser module housing is an electrical positive surface, it is imperative that contact between the laser module and the machine be avoided. This is to prevent damage from the machine electrical leakage. Surge protected power supply to the laser module is strongly recommended.

## ORDER CODE

| Order Code | Wavelength | Optical power* | Laser power output** | Laser Class | Connection Type |
|---|---|---|---|---|---|
| VLM-650-27 LPT | 650 nm | Less than 2mW | Less than 0.39mW | Class 1M | Lead Wire |
| VLM-650-27 LPT-30 | 650 nm | 12~15mW | Less than 0.9mW | Class 2M | Lead Wire |

\* Optical power is total power output measured at the aperture of the laser.

\*\* According to FDA 1040.10 & IEC 60825-1 regulations, laser power output is measured by 7mm aperture stop from a 10 cm distance of the laser.
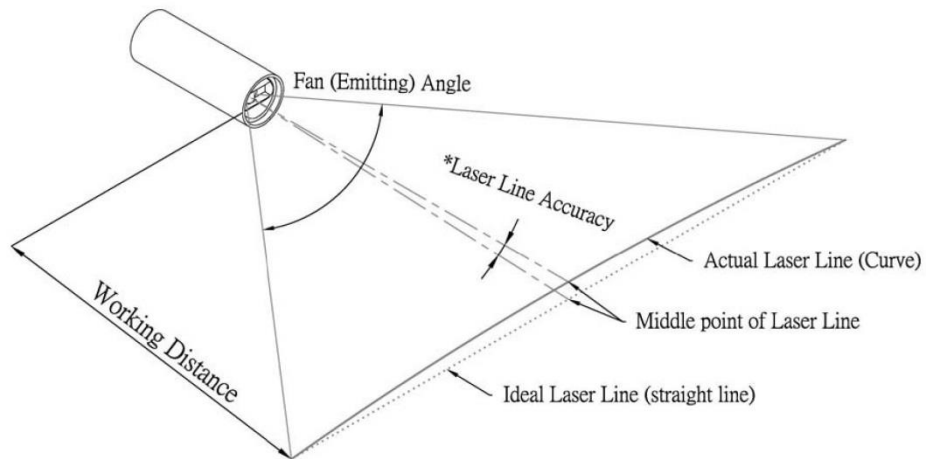
## SAFETY LABEL

CLASS I LASER PRODUCT

CAUTION
LASER RADIATION
DO NOT STARE
INTO BEAM
LASER DIODE
Wavelength : 630~680nm
Max.Output : <1mW
CLASS II LASER PRODUCT
Manufacture : QUARTON Inc
9F, 185, Sec.1, Ta-Tung Rd.,
Hsi-Chih District, New Taipei City,
Taiwan, R.O.C

**Annex A.**

Laser Line Accuracy



*Laser Line Accuracy
The error angle between Ideal and Actual Laser Line at middle point.
For VLM-635/650-27 Series, Laser line accuracy < 40" (Arc Second) = $\frac{40}{3600}$° (Degree)
For VLM-635/650-37 Series, Laser line accuracy < 20" (Arc Second) = $\frac{20}{3600}$° (Degree)
For VLM-532-46 Series, Laser line accuracy < 20" (Arc Second) = $\frac{20}{3600}$° (Degree)