

Red Circular Dot Laser Module with TTL function

VLM-650-62T Series



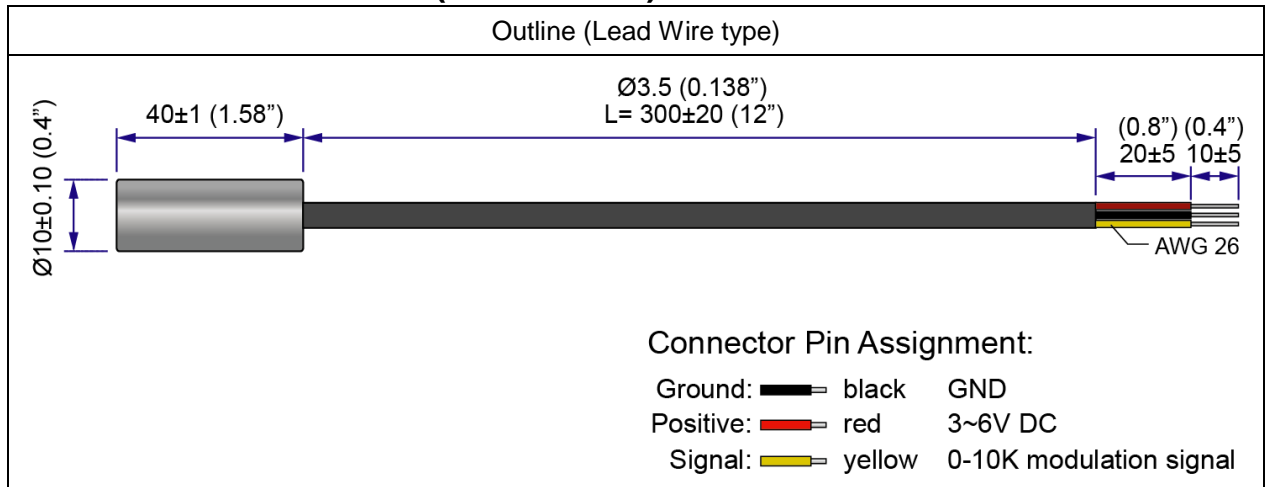
FEATURES:

- High-Precision Red Dot - Produces a sharp circular spot (<3 mm at 0~5 m) with 645~665 nm wavelength, offering peak visibility to the human eye.
- TTL Modulation Function - Supports stable CW to 10 kHz modulation, ideal for applications requiring fast response and precise control.
- Rugged Industrial Design - Stainless-steel housing and precision glass lens ensure superior durability, beam stability, and 10,000 hours lifetime.
- Compact & Easy Integration - with lead-wire connection, ideal for OEM or retrofit systems.
- Three laser power output level: LPO - Class 1 product
LPT - Class 2 laser product
LPA - Class 3R laser product
- Dimensions : Ø10 x 40 mm (Ø0.39" x 1.575")
- Wavelength : 645~665 nm
- 3~6 VDC operation.
- Connection type : Lead wire
- Versatile Applications - Perfect for industrial alignment, machine vision, metrology, robotics, automation, and research or educational instruments.

650 nm Laser (Deep Red): A widely available and cost-effective red wavelength. Slightly less visible than 635 nm but popular due to diode affordability and durability.

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OUTLINE DIMENSIONS (UNITS: mm)



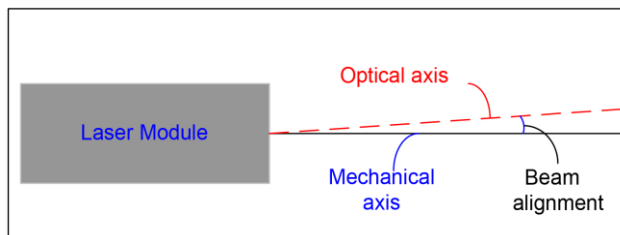
SPECIFICATIONS

| Part Number | | VLM-650-62T | | |
|-------------|---------------------------|---|-----------------|-----------------|
| | | LPO | LPT | LPA |
| 1 | Dimensions | $\varnothing 10 \times 40$ mm ($\varnothing 0.39" \times 1.575"$) | | |
| 2 | Weight | 16 \pm 1g | | |
| 3 | Operating voltage (Vop) | 3~6 VDC | | |
| 4 | Operating current (Iop) | Less than 80mA | Less than 100mA | Less than 150mA |
| 5 | Laser power output | 0.2 \pm 0.1mW | 0.8 \pm 0.1mW | 3.5 \pm 0.5mW |
| 6 | Laser class | Class 1 | Class 2 | Class 3R |
| 7 | Wavelength (λ p) | 645~665nm | | |
| 8 | Collimating lens | Aspherical glass lens | | |
| 9 | Output aperture | 2mm | | |
| 10 | Beam shape | Circular | | |
| 11 | Spot size | Less than $\varnothing 3$ mm @ 0~5M | | |
| 12 | Divergence (Half Angle) | Less than 0.4 mRad | | |
| 13 | Beam alignment* | Less than 3° | | |
| 14 | Operating temp. range** | -20°C ~+60°C | | |
| 15 | Storage temp. range | -20°C ~+85°C | | |
| 16 | Housing material / Color | Stainless steel / Silver | | |
| 17 | Potential of housing | Insulated | | |
| 18 | Mod. Frequency range | 0-10kHz | | |
| 19 | Operation mode*** | TTL(High on)**** | | |
| 20 | EN input current | 1 to 20mA | | |

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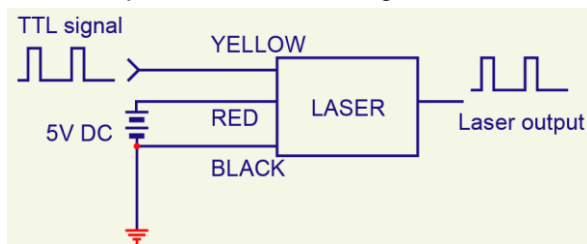
| | | |
|----|----------------------------------|---|
| 21 | Electrostatic discharge (ESD) | 30KV / Arc protection |
| 22 | Moisture sensitivity level (MSL) | Level 1 - acc to JEDEC J-STD-020E. |
| 23 | Protection circuit | Reversed supply circuit protection, over-current protection, surge protection, Short circuit protection |
| 24 | Vibration resistance | 10 to 55Hz, 1.5mm amplitude for 2 hours each in X, Y and Z direction |
| 25 | Standard | IEC60825:2014 |
| 26 | Wire type | 2464 3-WIRE CABLE 26 AWG |
| 27 | Cable length | 330±30mm |
| 28 | Mean time to failure (MTTF) 25°C | 10000 hrs. |
| 29 | International Protection Marking | IP65 |
| 30 | Application | Industrial alignment with modulation function |
| 31 | Suggestion work distance | 0~5 meters / 0~16 feet |

* Beam alignment:

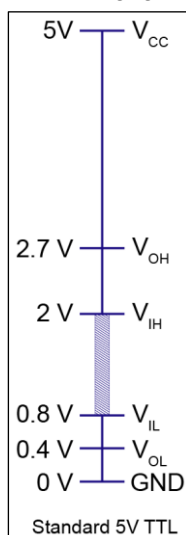


** Operation temperature means within this temperature range, the laser spot/line will not be affected to change the spot size/line width. It can still work over this range, but the laser spot size or laser line width will be larger.

*** TTL Operation Function Diagram



**** TTL Level



VLM-650-62T Series

ORDER CODE

| Order Code | Wavelength | Laser Power Output | Laser Class | Connection Type |
|-----------------|------------|--------------------|-------------|-----------------|
| VLM-650-62T LPA | 650 nm | 3.5±0.5mW | Class 3R | Lead Wire |
| VLM-650-62T LPT | 650 nm | 0.8±0.1mW | Class 2 | Lead Wire |
| VLM-650-62T LPO | 650 nm | 0.2±0.1mW | Class 1 | Lead Wire |

SAFETY LABEL

LPA:



LPT:



LPO:

CLASS I LASER PRODUCT

Optional Accessories

Quarton offers mounts, power supply boards, battery pack and USB cable switch to help you running as quickly as possible. For more information, please visit www.quarton.com, www.quarton.com/contact or email contact@quarton.com.

QLM-1125 - Laser Module Mount/Holder for diameter 6mm to 12.5mm, it's an ideal choose for mounted onto optical tables.

Feature:

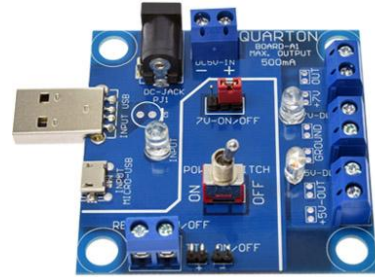
- 4 directions adjustable.
- Can be mounted onto the optical table with screws (Screws not included).
- Engraved scale for precision adjustable.



Optional Accessories

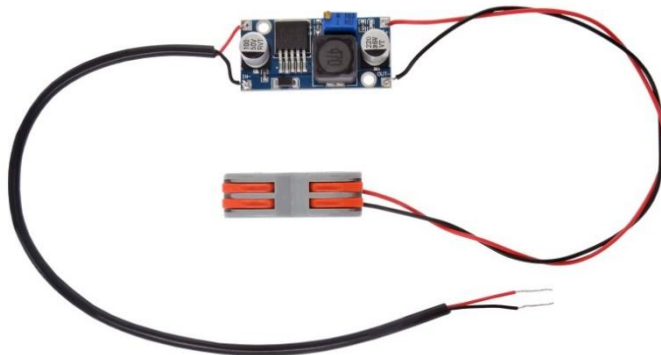
LMPS-MP1 - Multi-function Laser Module Power Supply Board.

Four input : USB, micro USB, DC Power Jack(5.5 x 2.1), and terminal block. Two channel output : 7 VDC 500mA and 5 VDC 1A. Three switches-toggle switch, remote switch and TTL signal.



Feature:

- Allow four kinds of power input: USB, micro USB, DC Power Jack(5.5x2.1) and terminal block.
- Two Channel output: 7 VDC 500mA and 5 VDC 1A.
- Built-in three switches: toggle switch, terminal block remote switch and TTL signal switch by on-board connect point.
- 7 VDC output work for all Quarton Laser Modules with 7-12 V operation Voltage (Vop).
- 5 VDC output work for all Quarton Laser Modules with 3-6 V operation Voltage (Vop).
- Three LED indicators: Input power indicator, 7V output indicator and 5V output indicator.



LMPS-MP2 - DC converter, In: 9-36V, Out: 5V 1A.



LMPS-mUSB1 - Laser Module Power Supply Board, Input: micro USB, Output: 5 VDC 2A.

Feature:

- Micro USB connector power input.
- Output 5 VDC 2A with alligator clips.
- For all Quarton Laser Modules that require 3-6V operation Voltage.

Optional Accessories



LMPS-DC1 - Laser Module Power Supply Board, Input: DC Power Jack(5.5 x 2.1), Output: 5 VDC 2A.

Feature:

- DC Power Jack(5.5 x 2.1) power input.
- Output 5 VDC 2A with alligator clips.
- For all Quarton Laser Modules that require 3-6V operation voltage.



CLM-BP4N3 - Battery pack (4* AA batteries)

*** AA Batteries are **NOT** included in package.

Feature:

- USB Output Voltage: 5 VDC.
- Color: Black.



CLM-UM3M - USB to micro USB Cable.

Feature:

- Length: 3 meters.
- Color: Black.