

IR Circular Dot Laser Module with TTL function

VLM-850/940/1050-62T Series



FEATURES:

- Circular-dot laser with spot is than 3 mm over a working distance of 0 to 5 meters.
- Durable stainless steel housing is suitable for industrial environments.
- Equipped with a high-precision glass lens for superior beam quality and stability.
- Stable CW to 10 kHz modulation performance - ideal for applications requiring both power stability and fast response.
- Designed for industrial use with a typical service life exceeding 10,000 hours.
- Two laser power output level: LPO - Class 1 laser product
LPA - Class 3R laser product
- Dimensions : Ø10 x 40 mm (Ø0.39" x 1.575")
- Wavelength : 840 / 940 / 1050 nm
- 3~6 VDC operation.
- Connection type : Lead wire

850 nm Laser (Near-IR): The most popular NIR wavelength. Invisible to the eye but highly compatible with silicon-based detectors, making it ideal for IR cameras and sensors.

Typical Applications: Night vision illumination, eye tracking, industrial sensing, biometric authentication, medical imaging devices.

940 nm Laser (Near-IR, Deep): Fully invisible to the human eye. Provides reduced interference with visible-light imaging systems and enhanced stealth operation.

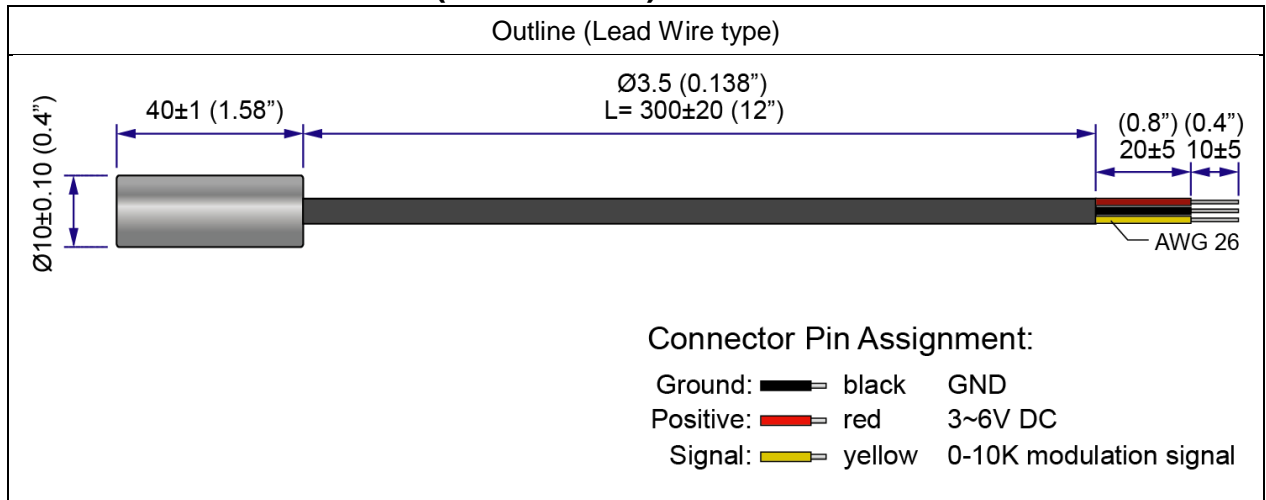
Typical Applications: Security and surveillance, 3D sensing, gesture recognition, consumer electronics (smartphones, AR/VR), covert eye-safe illumination.

1050 nm Laser (SWIR): Fully invisible, operating in the short-wave infrared (SWIR) band. Offers deeper penetration through materials such as silicon wafers, glass, and plastics, with reduced scattering—making it highly suitable for advanced inspection and imaging. Note: Detection requires InGaAs sensors, as standard silicon detectors are not compatible.

Typical Applications: Wafer and material inspection, spectroscopy, industrial sensing, and biomedical imaging.

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OUTLINE DIMENSIONS (UNITS: mm)



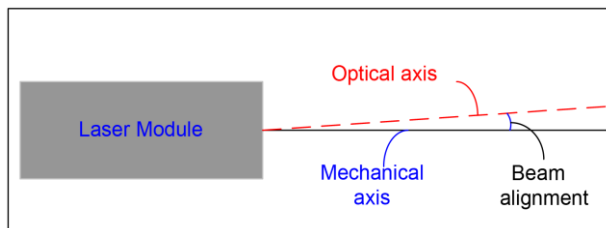
SPECIFICATIONS

Part Number		VLM-850/940/1050-62T	
		LPO	LPA
1	Dimensions	$\varnothing 10 \times 40$ mm ($\varnothing 0.39" \times 1.575"$)	
2	Weight	16 ± 1 g	
3	Operating voltage (Vop)	3~6 VDC	
4	Operating current (Iop)	Less than 60mA	Less than 150mA
5	Laser power output	850nm - Less than 0.7mW 940nm - Less than 1mW 1050nm - Less than 1.5mW	850nm - Less than 3.5mW 940nm - Less than 6mW 1050nm - Less than 10mW
6	Laser class	Class 1	Class 3R
7	Wavelength (λ_p)	850nm - 840~865nm 940nm - 930~950nm 1050nm - 1050~1075nm	
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	Stainless steel	

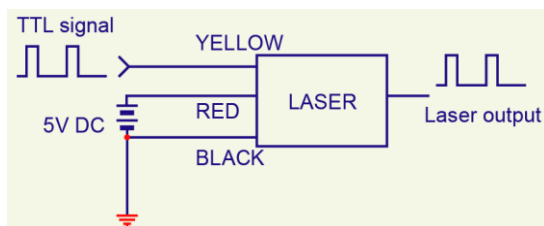
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17	Potential of housing	Insulated
18	Mod. Frequency range	0-10kHz
19	Operation mode***	TTL(High on)****
20	EN input current	1 to 20mA
21	Electrostatic discharge (ESD)	30KV / Arc protection
22	Moisture sensitivity level (MSL)	Level 1 - acc to JEDEC 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 application with modulation function
31	Suggestion work distance	0~5 meters / 0~16 feet

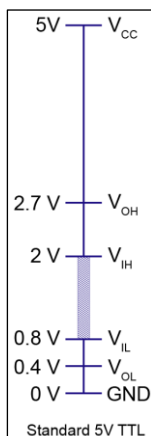
* Beam alignment:



*** TTL Operation Function Diagram



**** TTL Level



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ORDER CODE

Order Code	Wavelength	Laser Power Output	Laser Class	Connection Type
VLM-850-62T LPO	850 nm	Less than 0.7mW	Class 1	Lead Wire
VLM-940-62T LPO	940 nm	Less than 1mW	Class 1	Lead Wire
VLM-1050-62T LPO	1050 nm	Less than 1.5mW	Class 1	Lead Wire
VLM-850-62T LPA	850 nm	Less than 3.5mW	Class 3R	Lead Wire
VLM-940-62T LPA	940 nm	Less than 6mW	Class 3R	Lead Wire
VLM-1050-62T LPA	1050 nm	Less than 10mW	Class 3R	Lead Wire

SAFETY LABEL

LPA:



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:

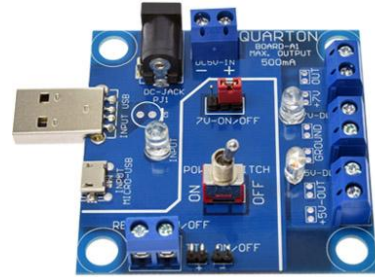
- 4 directions adjustable.
- Can be mounted onto the optical table with screws (Screws not included).
- Engraved scale for precision adjustable.



Optional Accessories

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

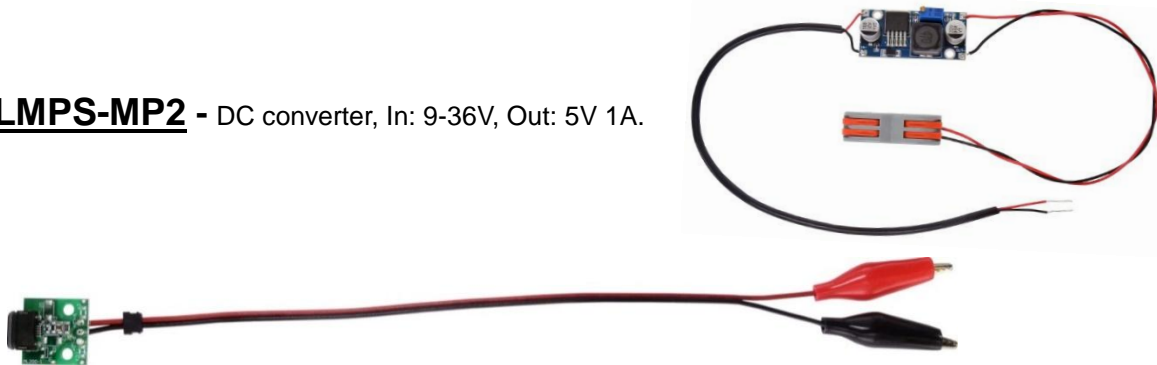
Four input : USB, micro USB, DC Power Jack(5.5 x 2.1), and terminal block. Two channel output : 7 VDC 500mA and 5 VDC 1A. Three switches-toggle switch, remote switch and TTL signal.



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 500mA.

Feature:

- Micro USB connector power input. Output 5 VDC 500mA with alligator clips.
- For all Quarton Laser Modules that require 3-6V operation Voltage.



LMPS-DC1 - Laser Module Power Supply Board, Input: DC Power Jack(5.5 x 2.1), Output: 5 VDC 500mA.

Feature:

- DC Power Jack(5.5 x 2.1) power input. Output 5 VDC 500mA with alligator clips.
- For all Quarton Laser Modules that require 3-6V operation voltage.

Optional Accessories



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.