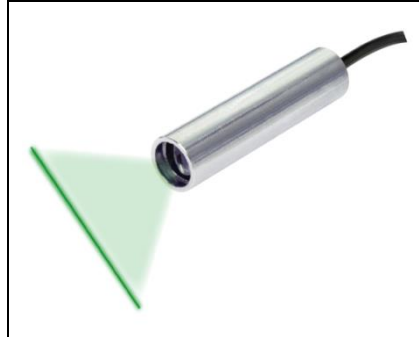


Green Line Laser Module Fan Angle 45° Uniform Line

VLM-520-56-45°Series



The newly developed glass line lens come with various fan angles and they produce high quality uniform laser line in a robust stainless housing, ideal for automation, machine vision, image processing, digital data acquisition, counting, precision 3D scanner and science & medical application. They are available at 10 cm, 20 cm, 40 cm and 90 cm focus length, red & green wavelength, Class 1M and Class 2M laser class to cover within 1 meter range task. For customized focus length, wavelength and laser power output, please contact us.

FEATURES:

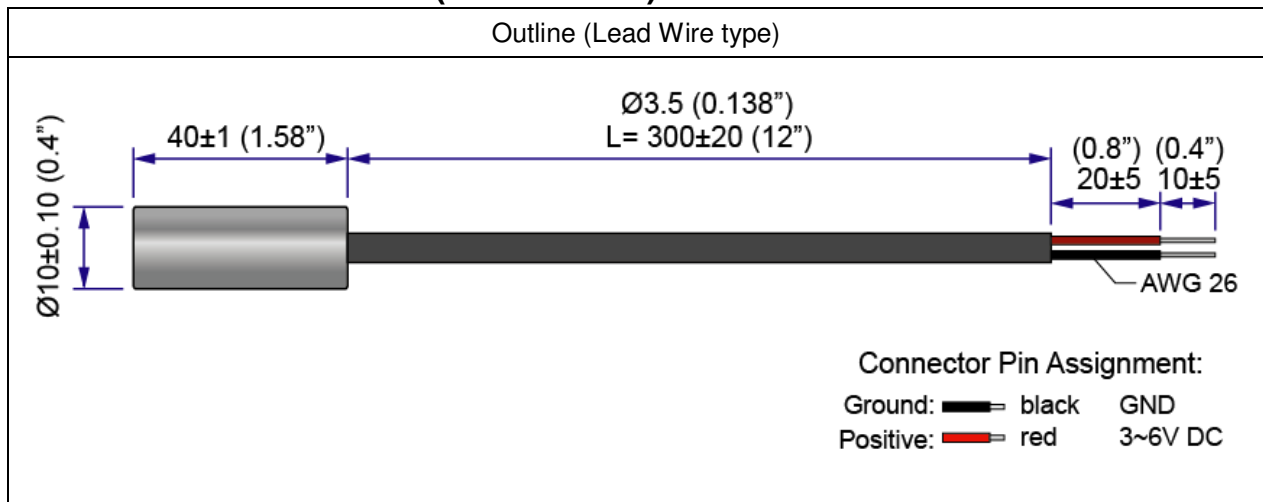
- Built with high precision glass line lens and glass laser collimating lens.
- Fan Angle : 45°
- Focus range: 10cm, 20cm, 40cm, 90cm, customized focus length are available by request.
- Customized focus within 1 meter available please direct contact us.
- Two laser power output level: LPO - Class 1M laser product
LPT - Class 2M laser product
- Dimensions : Ø10 x 40 mm (Ø0.39" x 1.575")
- Wavelength : 515~530 nm
- 3~6 VDC operation.
- Connection type : Lead wire
- Laser line demonstration : https://www.youtube.com/watch?v=3_gRtxyeP28

APPLICATIONS: ideal for

- Machine vision.
- Automation industry.
- Image processing.
- Medical & Science.
- Scanning.
- Precision 3D scanner.
- Counting.
- Measurement.

VLM-520-56-45°Series

OUTLINE DIMENSIONS (UNITS: mm)



SPECIFICATIONS

| Part Number | | VLM-520-56 LPO-D45- | | | | VLM-520-56 LPT-D45- | | | |
|-------------|---|---|-------|-------|-------|---------------------|-------|-------|-------|
| | | F10 | F20 | F40 | F90 | F10 | F20 | F40 | F90 |
| 1 | Focus length | 10 cm | 20 cm | 40 cm | 90 cm | 10 cm | 20 cm | 40 cm | 90 cm |
| 2 | Fan angle / Laser line length | 45° / Length of Laser Line as TABLE A | | | | | | | |
| 3 | Laser line width | AS TABLE B | | | | | | | |
| 4 | Recommended working range | AS TABLE B | | | | | | | |
| 5 | Dimensions | $\varnothing 10 \times 40$ mm ($\varnothing 0.39" \times 1.575"$) | | | | | | | |
| 6 | Weight | 17 ± 1 g | | | | | | | |
| 7 | Operating voltage (Vop) | 3~6 VDC | | | | | | | |
| 8 | Operating current (Iop) | Less than 80mA | | | | Less than 180mA | | | |
| 9 | Optical power* | Less than 10mW | | | | Less than 30mW | | | |
| 10 | Laser power output** | Less than 0.39mW | | | | Less than 1mW | | | |
| 11 | Laser class | Class 1M | | | | Class 2M | | | |
| 12 | Wavelength (λ_p) | 515~530nm | | | | | | | |
| 13 | Collimating lens / Line generating lens | Aspherical glass lens | | | | | | | |
| 14 | Output aperture | 8mm | | | | | | | |
| 15 | Beam shape | Line | | | | | | | |
| 16 | Laser line accuracy | 40"(± 1 mm@5M) | | | | | | | |
| 17 | Operating temp. range*** | -20°C ~+60°C | | | | | | | |
| 18 | Storage temp. range | -20°C ~+85°C | | | | | | | |
| 19 | Housing material | Stainless steel | | | | | | | |
| 20 | Potential of housing | Insulated | | | | | | | |

VLM-520-56-45°Series

| | | |
|----|----------------------------------|--|
| 21 | Electrostatic discharge (ESD) | 30KV |
| 22 | Moisture sensitivity level (MSL) | Level 1 - acc to JEDEC J-STD-020E. |
| 23 | Wire type | 2464 2-WIRE CABLE 26 AWG |
| 24 | Cable length | 330±30mm |
| 25 | Mean time to failure (MTTF) 25°C | Above 10000 hrs |
| 26 | International Protection Marking | IP67 |
| 27 | Application | Precision fine line for Automation, Machine vision and Medical |
| 28 | Suggestion work distance | 0~1.2 meters / 0~4 feet |

- * 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.

SAFETY LABEL

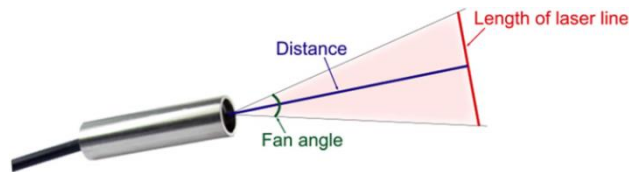
LPO:

CLASS I LASER PRODUCT

LPT:



TABLE A: Laser Line Length Table:



Length of laser line:

| Distance Fan angle | 10 cm (4 inch) | 20 cm (8 inch) | 40 cm (16 inch) | 100 cm (40 inch) |
|-----------------------|-------------------|-------------------|--------------------|---------------------|
| 5° | 0.9 cm (0.35") | 1.75 cm (0.7") | 3.5 cm (1.4") | 7.85 cm (3") |
| 10° | 1.75cm (0.6") | 3.5 cm (1.4") | 7 cm (2.8") | 17.5 cm (6") |
| 15° | 2.6 cm (1") | 5.2 cm (2") | 10.5 cm (4") | 26.3 cm (10") |
| 20° | 3.5 cm (1.4") | 7 cm (2.8") | 14 cm (5.6") | 35 cm (14") |
| 30° | 5.3 cm (2") | 10.7 cm (4") | 21 cm (8") | 53.5 cm (20") |
| 45° | 8.28 cm (3¼") | 16.6 cm (6½") | 33.1 cm (13") | 82.85 cm (32½") |
| 60° | 11.5 cm (4½") | 23 cm (9") | 46 cm (18") | 115.5 cm (45") |
| 110° | 28.6 cm (11¼") | 57.1 cm (23") | 114.2 cm (46") | 285.6 cm (112½") |

VLM-520-56-45°Series

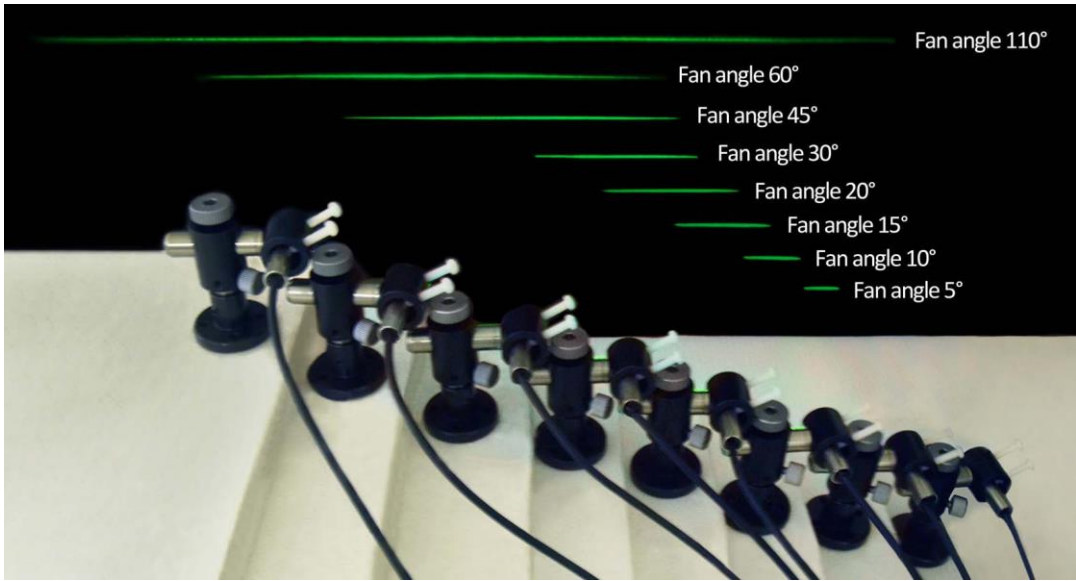


TABLE B: Recommended working range:

Focus at 10 cm:

Working range: 0 - 19cm(0-7.5")

Best at: 5.5 - 15cm(2.2"-5.9")

■ Laser Line Width <1mm
 ■ Laser Line Width <2mm

| Laser Fan Angle | Recommended Working Range(cm) | | | | |
|-----------------|-------------------------------|----|----|----|----|
| | 5 | 10 | 15 | 20 | 25 |
| 5° | 6.5 - 16 -21 | | | | |
| 10° | 8 - 15 -19 | | | | |
| 15° | 6- 8 - 15 -19 | | | | |
| 20° | 4- 7 - 16 -21.5 | | | | |
| 30° | 4- 6 - 14.5 -21 | | | | |
| 45° | 0- 5.5 - 15 -19 | | | | |
| 60° | 0- 7 - 14.5 -20 | | | | |
| 110° | 0- 7 - 16.5 -22.5 | | | | |

Focus at 20 cm:

Working range: 9 - 34cm(3.5"-13.4")

Best at: 13 - 24cm(5.1"-9.5")

■ Laser Line Width <1mm
 ■ Laser Line Width <2mm

| Laser Fan Angle | Recommended Working Range(cm) | | | | |
|-----------------|-------------------------------|----|----|----|----|
| | 10 | 15 | 20 | 25 | 30 |
| 5° | 12.5- 15 - 23 -26 | | | | |
| 10° | 10- 14 - 22 -26 | | | | |
| 15° | 10- 14.5 - 22 -26 | | | | |
| 20° | 10- 14.5 - 23 -27 | | | | |
| 30° | 10- 14 - 22 -26 | | | | |
| 45° | 9- 13 - 24 -34 | | | | |
| 60° | 11- 15 - 23.5 -32 | | | | |
| 110° | 8- 12.5 - 23 -30 | | | | |

Focus at 40 cm:

Working range: 4 - 69cm(1.6"-27.2")

Best at: 22 - 56cm(8.7"-22")

■ Laser Line Width <1mm
 ■ Laser Line Width <2mm

| Laser Fan Angle | Recommended Working Range(cm) | | | | |
|-----------------|-------------------------------|----|----|----|----|
| | 15 | 30 | 45 | 60 | 75 |
| 5° | 11- 20.5 - 57 -75 | | | | |
| 10° | 11.5- 22 - 47.5 -61.5 | | | | |
| 15° | 7- 21 - 53 -64 | | | | |
| 20° | 6- 21 - 54 -68 | | | | |
| 30° | 5- 21 - 54 -68 | | | | |
| 45° | 4- 22 - 56 -69 | | | | |
| 60° | 3- 20 - 58 -72 | | | | |
| 110° | 3- 21 - 58 -82 | | | | |

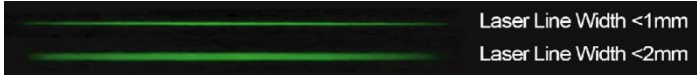
Focus at 90 cm:

Working range: 40 - 139cm(15.7"-54.7")

Best at: 55 - 120cm(21.7"-47.2")

■ Laser Line Width <1mm
 ■ Laser Line Width <2mm

| Laser Fan Angle | Recommended Working Range(cm) | | | | |
|-----------------|-------------------------------|----|----|-----|-----|
| | 40 | 65 | 90 | 115 | 140 |
| 5° | 29- 45 - 91 -109 | | | | |
| 10° | 35- 57 - 119 -146 | | | | |
| 15° | 31- 57 - 119 -140 | | | | |
| 20° | 31- 59 - 122 -142 | | | | |
| 30° | 42- 60 - 114 -144 | | | | |
| 45° | 40- 55 - 120 -139 | | | | |
| 60° | 35- 56 - 116 -145 | | | | |
| 110° | 38- 60 - 106 -134 | | | | |



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.

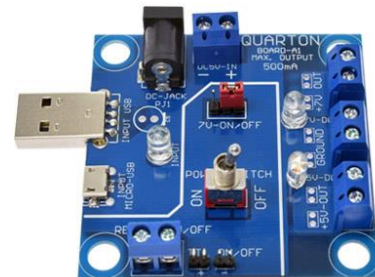
Feature:

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



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

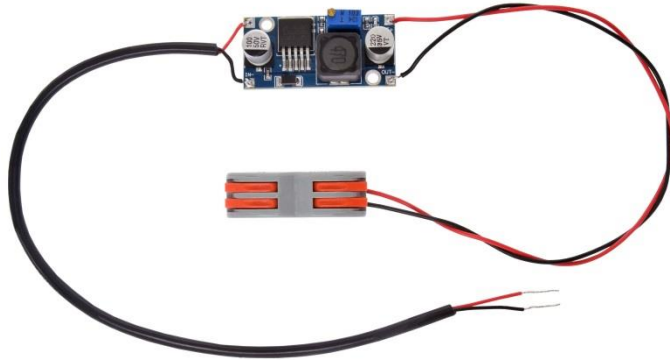
Four input : USB, micro USB, DC Power Jack(5.5 x 2.1), and terminal block. Two channel output : 7 VDC 500mA and 5 VDC 1A. Three switches-toggle switch, remote switch and TTL signal.



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.

Optional Accessories



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-USBSW - USB Cable Switch.

Feature:

- Length: 28cm.
- Color: Black.



CLM-UM3M - USB to micro USB Cable.

Feature:

- Length: 3 meters.
- Color: Black.