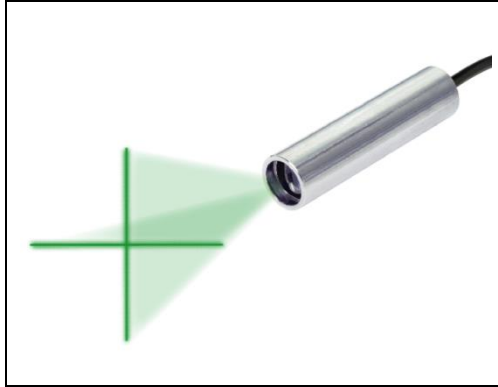


## Green Crosshair Laser Module Fan Angle 20° Uniform Line

### VLM-520-58-20°Series



The newly developed crosshairs lens come with various fan angles and they produce high quality uniform crosshairs laser lines in a robust stainless housing. These crosshairs laser modules provide target aid in alignment and position task. Ideal for machine vision, patient alignment, CNC milling, chassis alignment, quality control, textile industry and printing industry. They are available at 10cm, 20cm, 40cm and 90 cm focus length, red & green wavelength and Class 1M and Class 2M laser class to cover within 1 meter range marking task. For customized focus length, wavelength and laser power output, please contact us.

#### FEATURES:

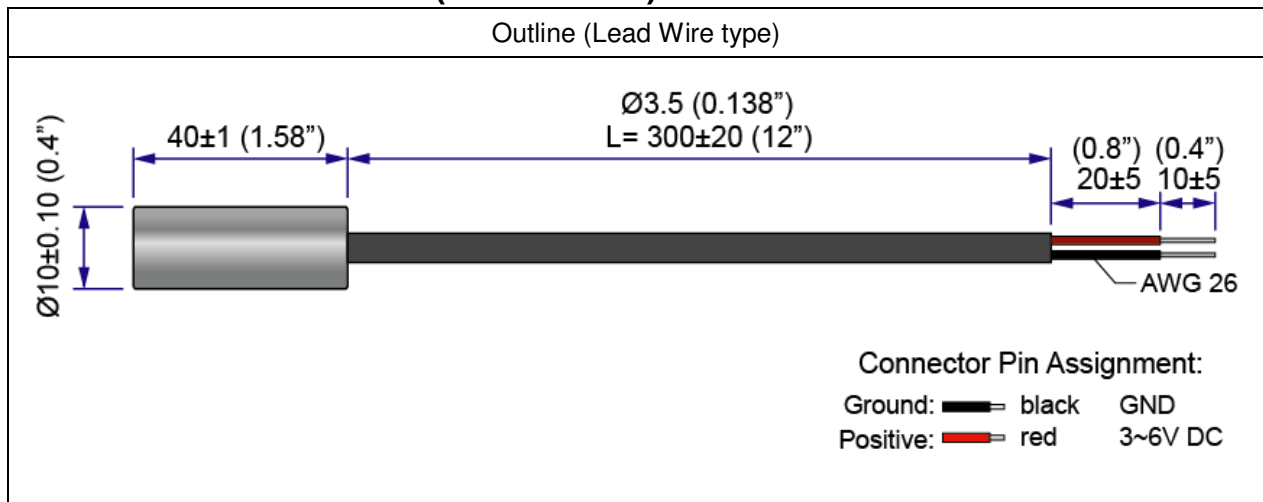
- Built with high precision glass crosshair lens and glass laser collimating lens.
- Fan Angle : 20°
- Focus range: 10cm, 20cm, 40cm, 90cm, customized focus length are available by request.
- Customized focus within 1 meter available please direct contact us.
- Two laser power output level: LPO - Class 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 crosshairs demonstration : <https://www.youtube.com/watch?v=eSyVa9-9kYM>

#### APPLICATIONS: ideal for

- Machine vision.
- Patient alignment.
- CNC milling.
- Chassis alignment.
- Quality control.
- Textile industry.
- Printing industry.

## VLM-520-58-20°Series

### OUTLINE DIMENSIONS (UNITS: mm)



### SPECIFICATIONS

| Part Number |   | VLM-520-58 LPO-D20-   |       |       |       | VLM-520-58 LPT-D20- |       |       |       |
|-------------|---|---|-------|-------|-------|---------------------|-------|-------|-------|
|             |   | 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           | 20° / Length of Laser Line as <b>TABLE A</b>                |       |       |       |                     |       |       |       |
| 3           | Laser line width                        | AS <b>TABLE B</b>   |       |       |       |                     |       |       |       |
| 4           | Recommended working range               | AS <b>TABLE B</b>   |       |       |       |                     |       |       |       |
| 5           | Dimensions                              | $\text{Ø}10 \times 40$ mm ( $\text{Ø}0.39" \times 1.575"$ ) |       |       |       |                     |       |       |       |
| 6           | Weight                                  | 17±1g   |       |       |       |                     |       |       |       |
| 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 ( $\lambda_p$ )              | 515~530nm   |       |       |       |                     |       |       |       |
| 13          | Collimating lens / Line generating lens | Aspherical glass lens                                       |       |       |       |                     |       |       |       |
| 14          | Output aperture                         | 8mm   |       |       |       |                     |       |       |       |
| 15          | Beam shape                              | Crosshairs  |       |       |       |                     |       |       |       |
| 16          | Laser line accuracy                     | 40"( $\pm 1\text{mm}@5\text{M}$ )                           |       |       |       |                     |       |       |       |
| 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-520-58-20°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 crosshairs for Machine vision,<br>CNC 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

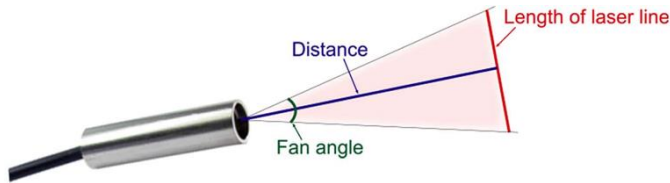
LPO:

**CLASS I LASER PRODUCT**

LPT:



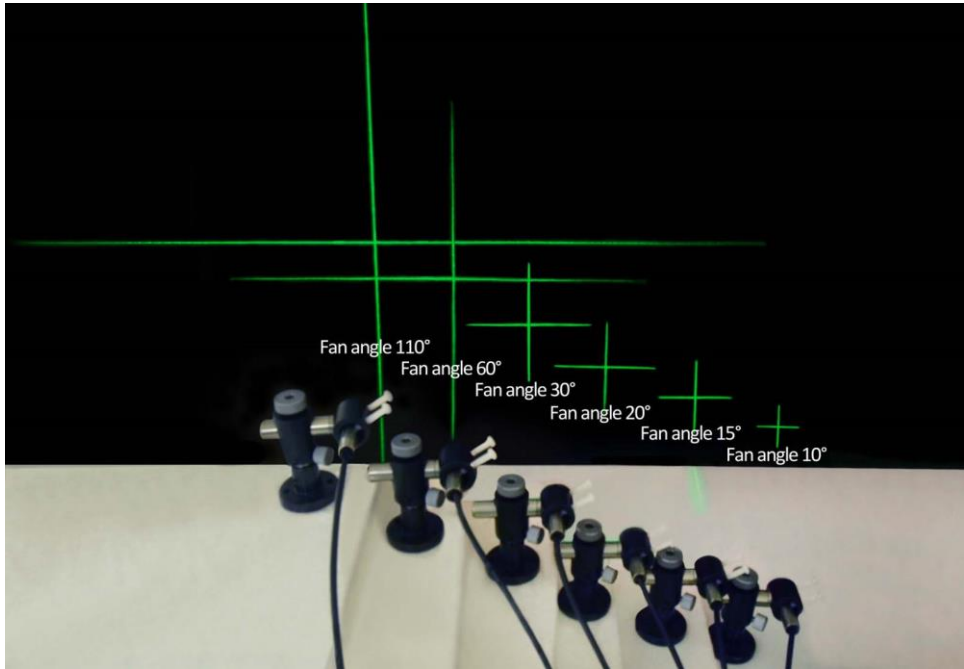
**TABLE A: Laser Line Length Table:**



**Length of laser line:**

| Distance \ Fan angle | 10 cm (4 inch) | 20 cm (8 inch) | 40 cm (16 inch) | 100 cm (40 inch) |
|----------------------|----------------|----------------|-----------------|------------------|
| 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")    |
| 60°                  | 11.5 cm (4½")  | 23 cm (9")     | 46 cm (18")     | 115.5 cm (45")   |
| 110°                 | 28.6 cm (11½") | 57.1 cm (23")  | 114.2 cm (46")  | 285.6 cm (112½") |

## VLM-520-58-20°Series



**TABLE B: Recommended working range:**

**Focus at 10 cm:**

Working range: 0 - 21cm(0- 8.3")

**Best at: 6 - 17cm(2.4"- 6.7")**

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

| Laser Fan Angle | Recommended Working Range(cm) |    |    |    |    |
|-----------------|-------------------------------|----|----|----|----|
|                 | 5                             | 10 | 15 | 20 | 25 |
| 10°             | 5- 9 - 15 -19                 |    |    |    |    |
| 15°             | 0- 4 - 15 -21.5               |    |    |    |    |
| 20°             | 0- 6 - 17 -21                 |    |    |    |    |
| 30°             | 0- 4 - 15 -21                 |    |    |    |    |
| 60°             | 0- 5.5 - 15 -19               |    |    |    |    |
| 110°            | 0- 4 - 16.5 -25               |    |    |    |    |

**Focus at 20 cm:**

Working range: 5 - 33cm(2"- 13")

**Best at: 9 - 23cm(3.5"- 9")**

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

| Laser Fan Angle | Recommended Working Range(cm) |    |    |    |    |
|-----------------|-------------------------------|----|----|----|----|
|                 | 10                            | 20 | 30 | 40 | 50 |
| 10°             | 5- 8 - 24 -33                 |    |    |    |    |
| 15°             | 5- 14 - 24 -33                |    |    |    |    |
| 20°             | 5- 9 - 23 -33                 |    |    |    |    |
| 30°             | 0- 12 - 25 -32                |    |    |    |    |
| 60°             | 0- 11 - 26 -33.5              |    |    |    |    |
| 110°            | 6.5- 12 - 22 -28              |    |    |    |    |

**Focus at 40 cm:**

Working range: 3 - 71cm(1.2"- 28")

**Best at: 13 - 53cm(5"- 21")**

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

| Laser Fan Angle | Recommended Working Range(cm) |    |    |    |    |
|-----------------|-------------------------------|----|----|----|----|
|                 | 15                            | 30 | 45 | 60 | 75 |
| 10°             | 6- 21 - 61 -81                |    |    |    |    |
| 15°             | 2- 17 - 58 -77                |    |    |    |    |
| 20°             | 3- 13 - 53 -71                |    |    |    |    |
| 30°             | 3- 18 - 58 -75.5              |    |    |    |    |
| 60°             | 2- 17 - 62 -80                |    |    |    |    |
| 110°            | 0- 12 - 55 -74                |    |    |    |    |

**Focus at 90 cm:**

Working range: 32 - 120cm(12.6"- 47.2")

**Best at: 55 - 92cm(21.7"- 36.2")**

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

| Laser Fan Angle | Recommended Working Range(cm) |    |    |     |     |
|-----------------|-------------------------------|----|----|-----|-----|
|                 | 40                            | 60 | 80 | 100 | 120 |
| 10°             | 36- 55 - 119 -125             |    |    |     |     |
| 15°             | 34- 63 - 94 -124              |    |    |     |     |
| 20°             | 32- 55 - 92 -120              |    |    |     |     |
| 30°             | 25- 66 - 108 -126.5           |    |    |     |     |
| 60°             | 22.5- 61 - 98 -120            |    |    |     |     |
| 110°            | 26- 55 - 104 -130             |    |    |     |     |



## 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](http://www.quarton.com), [www.quarton.com/contact](http://www.quarton.com/contact) or email [contact@quarton.com](mailto: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.