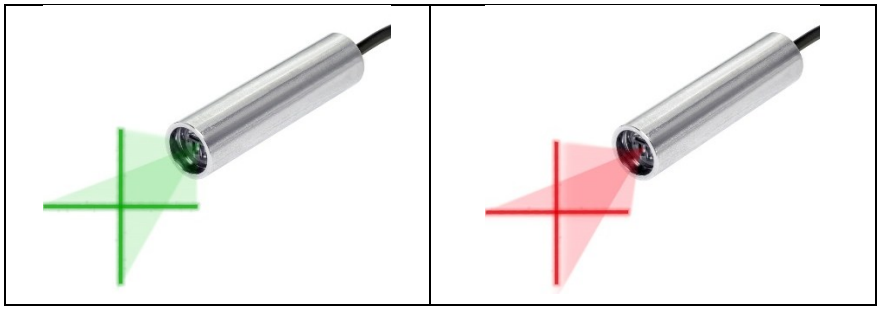
Quarton inc.

# Uniform Crosshairs Laser Module with Various Fan Angles and (58 series) without / (59 series) with TTL-modulation

## VLM-520/635-58/59 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 I 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 : 10° / 15° / 20° / 30° / 60° / 110° (15% tolerance)
- Focus range: 10cm, 20cm, 40cm, 90cm, customized focus length are available by request.
- Customized focus within 1 meter available please direct contact us.
- Without / With TTL-modulation: 58 series without modulation
- 59 series with modulation
- Laser power output level: Class I laser product
- Dimensions : Ø10 x 40 mm (Ø0.39" x 1.575")
- Wavelength : 520 (515~530 nm) / 635 (630~665 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.

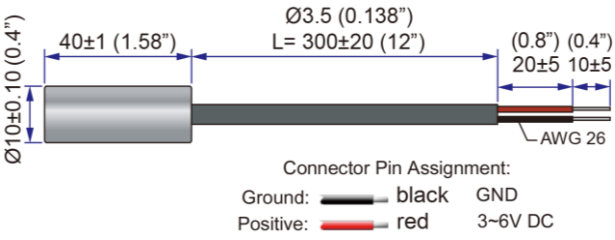
@Copyright 2024 Quarton Inc. All rights Reserved. 

# VLM-520/635-58/59 Series

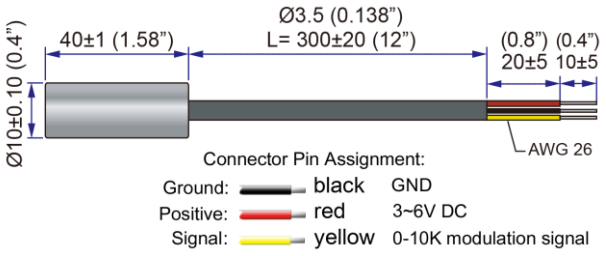
## OUTLINE DIMENSIONS (UNITS: mm)

Outline (Lead Wire type)

**VLM-520/635-58 series:**




**VLM-520/635-59 series:**




## SPECIFICATIONS

| Part Number | | **VLM-520/635-58/59 LPO-** |
|---|---|---|
| 1 | Fan angle* (D) | 10° / 15° / 20° / 30° / 60° / 110° (15% tolerance) |
| 2 | Focus length (F) | 10 cm / 20 cm / 40 cm / 90 cm |
| 3 | Laser line length | AS **TABLE A** |
| 4 | Laser line width | AS **TABLE B** |
| 5 | Recommended working range | AS **TABLE B** |
| 6 | Modulation | 58 series - without TTL modulation<br>59 series - with TTL modulation. High ON, 0-10K Hz |
| 7 | Dimensions | Ø10 x 40 mm (Ø0.39" x 1.575") |
| 8 | Weight | 18±2g |
| 9 | Operating voltage (Vop) | 3~6 VDC |
| 10 | Operating current (Iop) | 520 series - less than 80mA<br>635 series - less than 50mA |
| 11 | Optical power** | 520 series - 9~10mW<br>635 series - 4~5mW |
| 12 | Laser class | Class I |
| 13 | Wavelength (λp) | 520 series - 515~530 nm<br>635 series - 630~665 nm |
| 14 | Collimating lens /<br>Line generating lens | Aspherical glass lens |
| 15 | Output aperture | 8mm |

@Copyright 2024 Quarton Inc. All rights Reserved. https://www.quarton.com

Quarton inc.

# VLM-520/635-58/59 Series

| | | |
|---|---|---|
| 16 | Beam shape | Crosshairs |
| 17 | Laser line accuracy | ±4mm@1M |
| 18 | Operating temp. range*** | -20°C ~+60°C |
| 19 | Storage temp. range | -20°C ~+85°C |
| 20 | Housing material | Stainless steel |
| 21 | Potential of housing | Insulated |
| 22 | Electrostatic discharge (ESD) | 30KV |
| 23 | Moisture sensitivity level (MSL) | Level 1 - acc to JEDEC J-STD-020E. |
| 24 | Protection circuit | Reversed supply circuit protection, over-current protection, surge protection, Short circuit protection |
| 25 | Wire type | 2464 2-WIRE CABLE 26 AWG |
| 26 | Cable length | 330±30mm |
| 27 | Mean time to failure (MTTF) 25°C | Above 10000 hrs |
| 28 | International Protection Marking | IP67 |
| 29 | Application | Precision fine crosshairs for Machine vision, CNC, Medical |
| 30 | Suggestion work distance | 0~1.2 meters / 0~4 feet |
| | Part No. | VLM-520/635-58/59 LPO-Dxx-Fyy<br>520 = green laser<br>635 = red laser<br>58 = without TTL modulation<br>59 = with TTL modulation<br>D= Fan angle xx=10/15/20/30/60/110<br>F= Focus length yy=10/20/40/90<br><br>Example: VLM-520-58 LPO-D20-F90 |

* **The fan angle has a tolerance of 15%.**

** **Optical power is total power output measured at the aperture 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

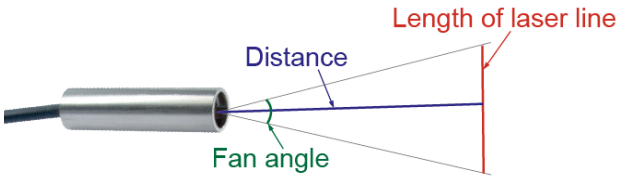
CLASS I LASER PRODUCT

@Copyright 2024 Quarton Inc. All rights Reserved. 

Quarton inc.

# VLM-520/635-58/59 Series

## 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° | 1.8cm (0.71") | 3.6 cm (1.42") | 7.2 cm (2.83") | 18 cm (7.1") |
| 15° | 2.8 cm (1.1") | 5.6 cm (2.2") | 11 cm (4.33") | 26.8 cm (10.55") |
| 20° | 3.5 cm (1.38") | 7.6 cm (2.99") | 15 cm (5.91") | 36 cm (14.17") |
| 30° | 5.6 cm (2.2") | 11.2 cm (4.41") | 22 cm (8.66") | 55 cm (21.65") |
| 60° | 11.8 cm (4.65") | 24 cm (9.45") | 48 cm (18.9") | 116 cm (45.67") |
| 110° | 30 cm (11.81") | 60 cm (23.62") | 115 cm (45.28") | 300 cm (118.11") |

## TABLE B: Recommended working range:

### Focus at 10 cm:

Working range: 5 - 19cm(2"- 7.5")

**Best at: 9 - 15cm(3.5"- 5.9")**

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: 8 - 24cm(3.2"- 9.5")**

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: 6 - 81cm(2.4"- 32")

**Best at: 21 - 61cm(8.3"- 24")**

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: 36 - 125cm(14.2"- 49.2")

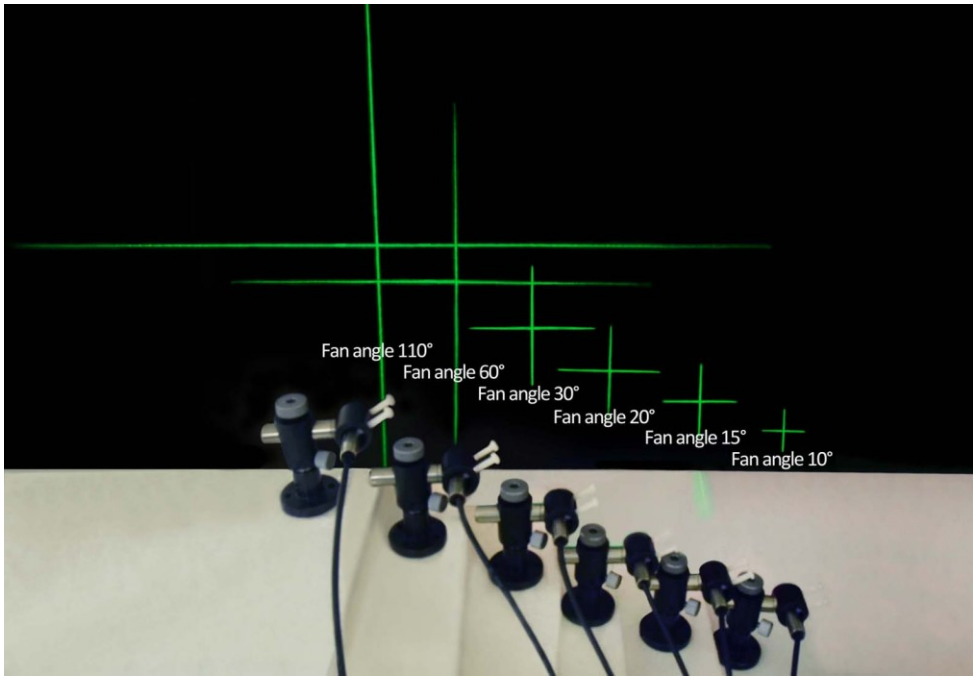
**Best at: 55 - 119cm(21.7"- 46.9")**

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 |

@Copyright 2024 Quarton Inc. All rights Reserved. https://www.quarton.com

# VLM-520/635-58/59 Series







## 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:**

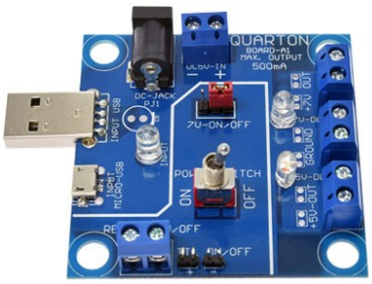
- 4 directions adjustable.
- Can be mounted onto the optical table with screws (Screws not included).
- Engraved scale for precision adjustable.

@Copyright 2024 Quarton Inc. All rights Reserved. 

Quarton inc.

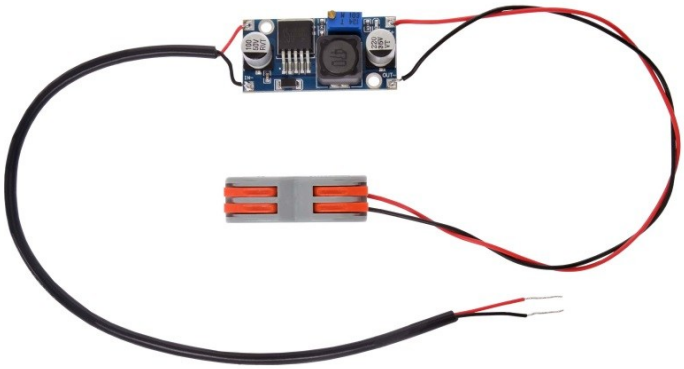
# Optional Accessories

**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.

@Copyright 2024 Quarton Inc. All rights Reserved. https://www.quarton.com

Quarton inc.

# 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-TCSW –** Type-C Cable Switch.

**Feature:**

- Length: 32cm. Color: Black.
-



**CLM-ACLIP** - Alligator clip with USB connector.

**Feature:**

- Length: 48cm. Color: Black.

@Copyright 2024 Quarton Inc. All rights Reserved. https://www.quarton.com

# Optional Accessories



**CLM-UM3M** - USB to micro USB Cable.

### Feature:

- Length: 3 meters.
- Color: Black.



**LMPS-C** - Alligator clip with Type-C connector.

### Feature:

- Length: 50cm. Color: Black.



**6V Laser Module Power Supply Kit** - 6V laser module power source, fit for all Quarton laser modules that operation voltage is 3~6 volt.

### Feature:

- Included: **CLM-BP4N3** x 1, **CLM-TCSW** x 1, **LMPS-C** x 1

@Copyright 2024 Quarton Inc. All rights Reserved. 