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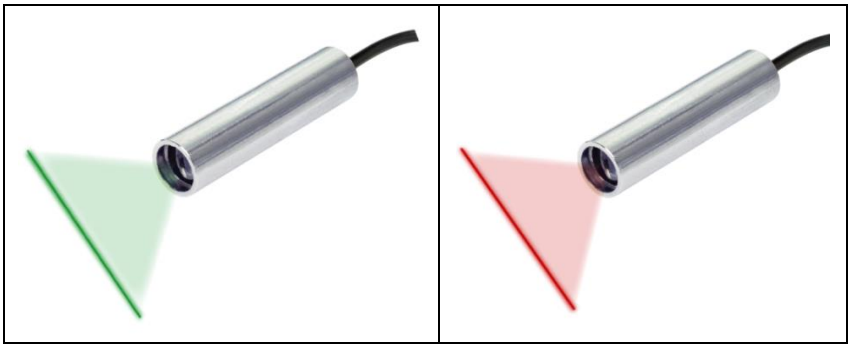
Uniform Line Laser Module with Various Fan Angles and (56 series) without / (57 series) with TTL-modulation

VLM-520/635-56/57 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 I 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.
- Available fan angle : 5° / 10° / 15° / 20° / 30° / 45° / 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: 56 series without modulation
  57 series with modulation
- Laser power output level: Class I laser product
- Dimensions : Ø10 x 40 mm (Ø0.39" x 1.575")
- Available wavelength : 520 (515~530 nm) / 635 (630~665 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.

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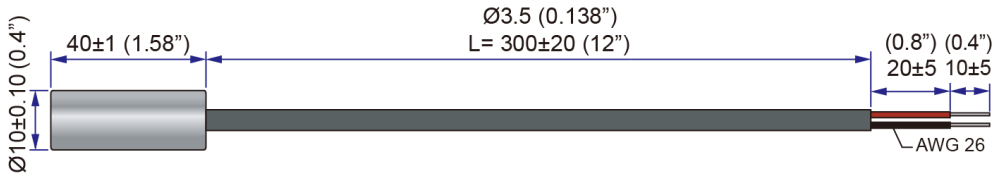
OUTLINE DIMENSIONS (UNITS: mm)

Outline (Lead Wire type)



VLM-520/635-56 series: Connector Pin Assignment:

Ground:	black	GND
Positive:	red	3~6V DC

VLM-520/635-57 series: Connector Pin Assignment:

Ground:	black	GND
Positive:	red	3~6V DC
Signal:	yellow	0-10K modulation signal

SPECIFICATIONS

Part Number		**VLM-520/635-56/57 LPO-**	**VLM-520/635-56/57 LPT-**
1	Fan angle* (D)	5° / 10° / 15° / 20° / 30° / 45° / 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	56 series - without TTL modulation 57 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 635 series - less than 50mA	520 series - less than 180mA 635 series - less than 100mA
11	Optical power**	520 series - 9~10mW 635 series - 4~5mW	520 series - 20~24mW 635 series - 8mW
12	Laser class	Class I	
13	Wavelength (λp)	520 series - 515~530 nm 635 series - 630~665 nm	
14	Collimating lens / Line generating lens	Aspherical glass lens	
15	Output aperture	8mm	

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16	Beam shape	Line
17	Laser line accuracy	40”(±1mm@5M)
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 line for Automation, Machine vision and Medical
30	Suggestion work distance	0~1.2 meters / 0~4 feet
31	Part No.	VLM-520/635-56/57 LPO/LPT-Dxx-Fyy 520 = green laser 635 = red laser 56 = without TTL modulation 57 = with TTL modulation D= Fan angle xx=5/10/15/20/30/45/60/110 F= Focus length yy=10/20/40/90 Example: VLM-520-56 LPO-D60-F40 VLM-635-57 LPT-D20-F10

* **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

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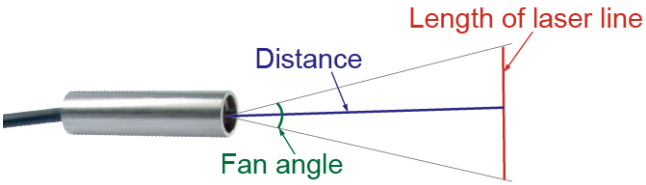
TABLE A: Laser Line Length Table: (15% tolerance)



Length of Laser Line:

Distance / Fan angle	10 cm (4 inch)	20 cm (8 inch)	40 cm (16 inch)	100 cm (40 inch)
5°	1 cm (0.39")	2 cm (0.79")	4 cm (1.57")	10 cm (3.94")
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")
45°	8.5 cm (3.35")	17 cm (6.69")	34 cm (13.39")	82 cm (32.28")
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: 6.5 - 21cm (2.6"- 8.3")

Best at: 6.5 - 16cm (2.6"- 6.3")

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: 12.5 - 26cm (4.9"- 10")

Best at: 15 - 23cm (5.9"- 9")

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: 11 - 75cm (4.3"- 29.5")

Best at: 20.5 - 57cm (8"- 22.5")

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: 29 - 109cm (11.4"- 43")

Best at: 45 - 91cm (17.7"- 35.8")

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

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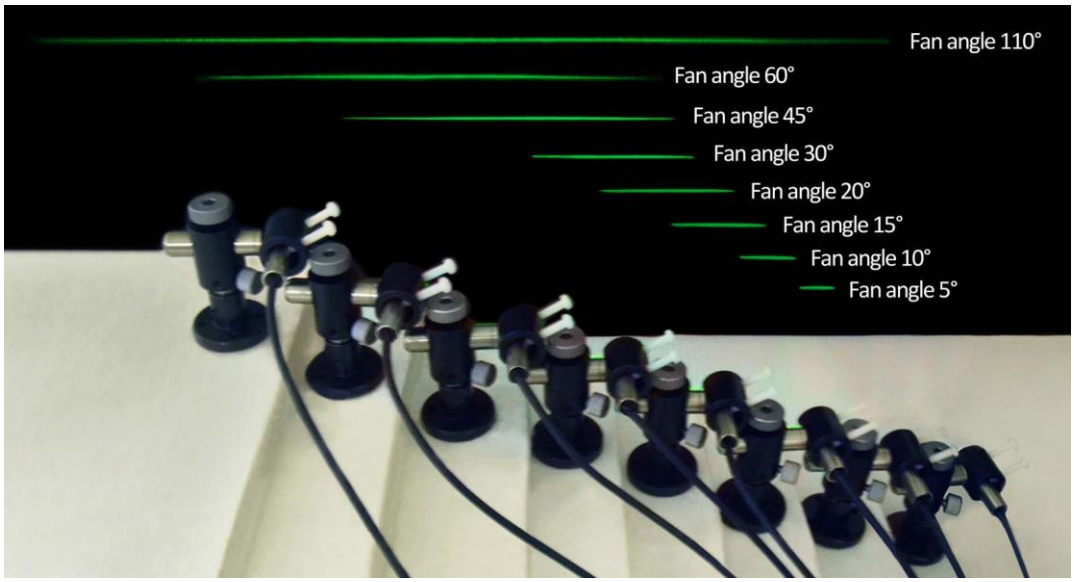

Optional Accessories

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.

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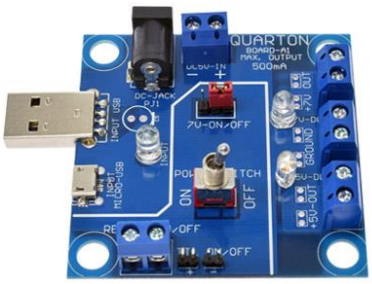
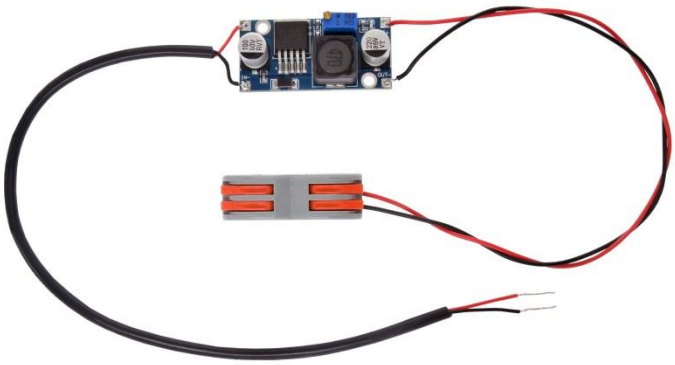
Optional Accessories



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-C - Laser Module Power Supply Board, Input: Type C, Output: 5 VDC 2A.

Feature:

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

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Optional Accessories

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.

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-ACLIP - Alligator clip with USB connector.

Feature:

- Length: 48cm.
- Color: Black.

CLM-USBSW - USB Cable Switch.

Feature:

- Length: 28cm.
- Color: Black.

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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.

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-USBSW** x 1, **CLM-ACLIP** x 1

