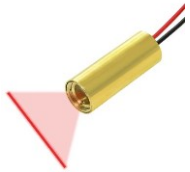
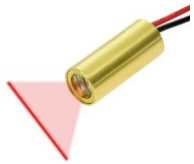
Red Line Laser Module

Specifications / Model Number	VLM-650-23 LPO	VLM-635-27 series VLM-650-27 series	VLM-650-28 LPT	VLM-635-34 series(TTL)	VLM-635-37 series VLM-650-37 series	VLM-650-41 series
						
Dimensions	Ø5 x 22.8 mm	Ø12.5 x 30 mm	Ø9 x 26 mm	Ø10 x 38 mm	(W)14 x (H)14 x (L)26 mm	Ø10 x 26 mm
Operating voltage	3~6 VDC	2.6~6 VDC	2.6~6 VDC	3~6 VDC	2.6~6 VDC	3~6 VDC
Operating current	Less than 50mA	Less than 50mA / 55mA Less than 35mA / 100mA	Less than 35mA	Less than 40mA / 80mA	Less than 50mA Less than 35mA / 100mA	
Optical power	Less than 5mW	Less than 2mW / 4~5mW Less than 2mW / 12~15mW	Less than 2mW	Less than 1mW / 5mW	4~5mW / 12~15mW	Less than 2.5mW / 20mW
Laser class	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1
Wavelength	640~655nm	630~645nm / 645~665nm	645~665nm	630~645nm	630~645nm / 645~665nm	635~665nm
Collimating lens	Glass lens	Plastic lens	Plastic lens	Glass lens	Glass lens	Plastic lens
Line lens	Glass lens	Plastic lens	Plastic lens	Glass lens	Glass lens	Plastic lens
Beam shape	Line	Line	Line	Line	Line	Line
Laser Line width	Less than 1.5mm at 2.5 meters	3 ±0.5mm at 5M 6 ±0.5mm at 10M	1.2mm at 1M	3 ±0.5mm at 5M 6 ±0.5mm at 10M	2±1mm at 5M 4±1mm at 10M	Less than 1.2mm at 40CM
Laser line straightness	4/1000(<1.6mm @400mm)	40" (±1mm @5M)	1/100	40" (± 1mm @10m)	20" (± 1mm @10m)	1/100
Emitting angle	50°±5°	More than 90°	More than 60°	More than 90°	More than 120°	60° / 90°
Operating temp. range	-20°C ~+65°C	+10°C ~+40°C	+15°C ~+30°C	-20°C ~+65°C	-20°C ~ +50°C	+15°C ~+40°C
Storage temp. range	-20°C ~+85°C	-20°C ~+65°C	-20°C ~+65°C	-20°C ~+85°C	-40°C ~ +70°C	-20°C ~+65°C
Housing material	Aluminum	Brass	Brass	Aluminum	Aluminum	Aluminum
Potential of housing	Insulated	VDD(+)	VDD(+)	Insulated	Insulated	Insulated
Electrostatic discharge (ESD)	30KV	30KV	30KV	30KV	30KV	30KV
Moisture sensitivity level (MSL)	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.
Wire type	1007-30AWG	1007-26AWG	1007-26AWG	1007-26AWG	1007-26AWG	1007-26AWG
Cable length	115±15mm	115±15mm	115±15mm	115±15mm	115±15mm	115±15mm
Mean time to failure (MTTF) 25°C	10000hrs	10000hrs	10000hrs	10000hrs	10000hrs	5000hrs
Application	Alignment tasks in limited space	General industrial alignment	Economic 3D scanner	Built in modulation control function	Precision industrial alignment	Precision 3D scanner
Suggestion work distance	0~2.5 meters / 0~8 feet	Above 2 meters	0.3~1.8 meters / 1~6 feet	2~10 meters / 6~30 feet	1~20 meters / 3~60 feet	20~60 cm / 8"~24"

VLM-635-55 series	VLM-635-56 series	VLM-635-57 series (TTL)	VLM-650-66 series	VLM-650-67 series (TTL)	VLM-POWELL series
					
Ø10 x 38 mm	Ø10 x 40 mm	Ø10 x 40 mm	M12 x 68 mm	M12 x 68 mm	Ø10 x 68 mm
3~6 VDC	3~6 VDC	3~6 VDC	10~36 VDC	10~36 VDC	3~6 VDC / 10~36 VDC
Less than 80mA / 100mA	Less than 50mA	Less than 50mA	Less than 20mA at 24V	Less than 20mA at 24V	Less than 55mA
4~5mW / 9~10mW	Less than 5mW	Less than 5mW	Less than 0.39mW / 5~7mW	Less than 0.39mW / 5~7mW	8±0.5mW
Class 1	Class 1	Class 1	Class 1	Class 1	Class 1
630~645nm	630~645nm	630~645nm	630~665nm	630~665nm	640~665nm
Glass lens	Glass lens	Glass lens	Glass lens	Glass lens	Glass lens
Glass lens	Glass lens	Glass lens	Glass lens	Glass lens	Glass lens
Line	Line	Line	Line	Line	Line
3±0.5mm at 5M 6±0.5mm at 10M	Less than 1mm	Less than 1mm	Less than 1mm	Less than 1mm	Less than 1mm
4/1000(<1.6mm @400mm)	±4mm@1M	±4mm@1M	4/1000(<1.6mm @400mm)	4/1000(<1.6mm @400mm)	4/1000(<1.6mm @400mm)
60°	5°, 10°, 15°, 20°, 30°, 45°, 60°, 110°	5°, 10°, 15°, 20°, 30°, 45°, 60°, 110°	5°, 15°, 30°, 60°, 110°	5°, 15°, 30°, 60°, 110°	45°±5° / 75°±5°
-20°C ~+65°C	-20°C ~+60°C	-20°C ~+60°C	-20°C ~+60°C	-20°C ~+60°C	-20°C ~+60°C
-20°C ~+85°C	-20°C ~+85°C	-20°C ~+85°C	-20°C ~+85°C	-20°C ~+85°C	-20°C ~+85°C
Aluminum	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Aluminum
Insulated	Insulated	Insulated	Insulated	Insulated	Insulated
30KV	30KV	30KV	30KV	30KV	30KV
Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.	Level 1 - acc to JEDEC J-STD-020E.
2464 2-WIRE CABLE 26 AWG	2464 2-WIRE CABLE 26 AWG	2464 2-WIRE CABLE 26 AWG	UL-2464/22 AWG	UL-2464/22 AWG	UL-2464/22 AWG
330±30mm	330±30mm	330±30mm	UL2464 D4.2,L=2000±30mm	UL2464 D4.2,L=2000±30mm	D4.2,L=2000±30mm
10000hrs	10000hrs	10000hrs	10000hrs	10000hrs	10000hrs
Precision industrial alignment	Precision fine line for Automation, Machine vision and Medical	Precision fine line for Automation, Machine vision and Medical with modulation function	Precision fine line for Automation, Machine vision and Medical	Precision fine line for Automation, Machine vision and Medical with modulation function	Scanning, Image processing, Medical & Science, Automatic industry, Robotic arm
1~20 meters / 3~60 feet	0~1.2 meters / 0~4 feet	0~1.2 meters / 0~4 feet	0~5 meters / 0~16 feet	0~5 meters / 0~16 feet	