
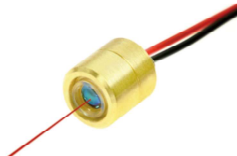






## Red Dot Laser Module

Specifications	Model Number	VLM-650-25 series	VLM-635-60 series	VLM-635-61 series (TTL)	VLM-635-63 Series	VLM-650-70 series
						
Dimensions		Ø7 x 21 mm	Ø10 x 40 mm	Ø10 x 40 mm	Ø10.6 x 12.2 mm	M12 x 68 mm
Operating voltage		2.6~6 VDC	3~6 VDC	3~6 VDC	3~6 VDC	10~36 VDC
Operating current		Less than 30mA	Less than 40mA / 80mA	Less than 40mA / 80mA	Less than 40mA	Less than 20mA at 24V
Laser power output		Less than 1mW	Less than 0.39mW / 1mW	Less than 0.39mW / 1mW	Less than 0.39mW / 1mW	Less than 0.39mW / 1mW
Laser class		Class 2	Class 1 / Class 2	Class 1 / Class 2	Class 1 / Class 2	Class 1 / Class 2
Wavelength		645~665nm	630~645nm	630~645nm	630~645 nm	645~665nm
Collimating lens		Plastic lens	Glass lens	Glass lens	Plastic lens	Glass lens
Output aperture		3mm	0.6mm	0.6mm	5mm	0.6mm
Beam shape		Ellipse	Circular	Circular	Ellipse	Circular
Spot size		Less than 1.1mm at 18~45cm	Less than 1mm at 0~50cm Less than 2mm at 50~90cm	Less than 1mm at 0~50cm Less than 2mm at 50~90cm	Ø0.1~Ø0.5 (1/e <sup>2</sup> )	Less than 1mm at 0~50cm Less than 2mm at 50~90cm
Divergence (Full Angle)			Less than 0.4 mRad	Less than 0.4 mRad		Less than 0.4 mRad
Beam alignment		Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°
Operating temp. range		+15°C ~+30°C	-20°C ~+60°C	-20°C ~+60°C	-10°C ~+50°C	-20°C ~+60°C
Storage temp. range		-20°C ~+65°C	-20°C ~+85°C	-20°C ~+85°C	-20°C ~+65°C	-20°C ~+85°C
Housing material		Steel	Stainless steel	Stainless steel	Bronze	Stainless steel
Potential of housing		VDD(+)	Insulated	Insulated	VDD(+)	Insulated
Electrostatic discharge (ESD)		20KV	30KV / Arc protection	30KV / Arc protection	30KV	30KV / Arc protection
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.
Wire type		1007-26AWG / 2509 connector	2464 2-WIRE CABLE 26 AWG	2464 3-WIRE CABLE 26 AWG	1007-26AWG	2464 2-WIRE CABLE 26 AWG
Cable length		115±15mm / 90mm	330±30mm	330±30mm	115±15mm	330±30mm
Mean time to failure (MTTF) 25°C		10000hrs	10000hrs	10000hrs	10000hrs	10000hrs
Application		Laser engrave machine pilot laser	Industrial alignment	Industrial alignment with TTL modulation function	Micro dot size	Industrial alignment
Suggestion work distance		18~45 cm / 6"~18"	0~1.2 meters / 0~4 feet	0~1.2 meters / 0~4 feet	1~25 cm / 1/2"~10"	0~1 meters / 0~3 feet

VLM-650-71 series (TTL)	VLM-635-96 LPA	CLM-635-01 LPO	CLM-635-11 LPO
			
M12 x 68 mm	Ø16.5 x 72.8 mm	Ø20 x 60 mm	20 x 20 x 60 mm
10~36 VDC	3~6 VDC	3~6 VDC	3~6 VDC
Less than 20mA at 24V	Less than 80mA	Less than 50mA	Less than 50mA
Less than 0.39mW / 1mW	0~4.25±0.25mW (adjustable)	Less than 0.39mW	Less than 0.39mW
Class 1 / Class 2	Class 3R	Class 1	Class 1
645~665nm	630~645nm	630~645nm	630~645nm
Glass lens	Glass lens	Glass lens	Glass lens
0.6mm	5mm	0.8mm	0.8mm
Circular	Ellipse	Circular	Circular
Less than 1mm at 0~50cm Less than 2mm at 50~90cm	Less than 0.2mm at 10mm Less than 8mm at 10M	Less than 1.2mm at 1M	Less than 1.2mm at 1M
Less than 0.4 mRad	Adjustable 0.4 mRad~12°	0.15 mRad	0.15 mRad
Less than 3°		Less than 1mm	Less than 1mm
-20°C ~+60°C	-10°C ~ +60°C	-20°C ~+60°C	-20°C ~+60°C
-20°C ~+85°C	-20°C ~ +85°C	-40°C ~+85°C	-40°C ~+85°C
Stainless steel	Aluminum	Stainless steel	Hard anodized aluminum
Insulated	Insulated	Insulated	Insulated
30KV / Arc protection	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.
2464 3-WIRE CABLE 26 AWG	2464 2-WIRE CABLE 26 AWG	Micro USB (5V)	Micro USB (5V)
330±30mm	330±30mm		
10000hrs	10000hrs	10000hrs	10000hrs
Industrial alignment with TTL modulation function	Laboratory or medical research, physical-optic experiments	Concentricity Laser	Concentricity Laser
0~1 meters / 0~3 feet	Above 10mm	0~1 meter / 0~3 feet	0~1 meter / 0~3 feet