

## Red Dot Laser Module

Specifications	Model Number	VLM-635-00 VLM-650-00	VLM-635-01 series VLM-650-01 series	VLM-635-01G series VLM-650-01G series	VLM-635-02 series VLM-650-02 series	VLM-635-02G series VLM-650-02G series
						
Dimensions		Ø10.52 x 17.2 mm	Ø10.4 x 18.4mm	Ø10.4 x 18.4mm	Ø10.5 x 26 mm	Ø10.5 x 26 mm
Operating voltage		2.2~2.7 VDC / 2.15~2.6 VDC	2.6~6 VDC	2.6~6 VDC	2.6~6 VDC	2.6~6 VDC
Operating current		Less than 45mA / 35mA	Less than 35mA / 50mA	Less than 35mA / 50mA	Less than 35mA / 50mA	Less than 35mA / 50mA
Laser power output		Less than 2.5mW	Less than 1mW / 3mW	Less than 1mW / 2.5mW	Less than 1mW / 3mW	Less than 1mW / 2.5mW
Laser class			Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa
Wavelength		630~645nm / 650~660nm	630~645nm / 645~665nm	630~645nm / 645~665nm	630~645nm / 645~665nm	630~645nm / 645~665nm
Collimating lens		Plastic lens	Plastic lens	Glass lens	Plastic lens	Glass lens
Output aperture		5mm	5mm	5mm	4mm	4mm
Beam shape		Ellipse	Ellipse	Ellipse	Ellipse	Ellipse
Spot size			5±1mm at 5M	4±1mm at 5M	5±1 mm at 5M Adjustment focus	4±1 mm at 5M Adjustment focus
Divergence (Half Angle)		0.5 mRad	0.5 mRad	0.4 mRad	0.5 mRad	0.4 mRad
Beam alignment			Less than 3°	Less than 3°	Less than 3°	Less than 3°
Operating temp. range		+10°C ~+40°C	+10°C ~+40°C	-20°C ~+50°C	+10°C ~+40°C	-20°C ~+50°C
Storage temp. range		-20°C ~+65°C	-20°C ~+65°C	-20°C ~+65°C	-20°C ~+65°C	-20°C ~+65°C
Housing material		Brass	Brass	Brass	Brass	Brass
Potential of housing		VDD(+)	VDD(+)	VDD(+)	VDD(+)	VDD(+)
Electrostatic discharge (ESD)			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.
Wire type		3*PIN from LD	1007-26AWG / Spring	1007-26AWG / Spring	1007-26AWG / Spring	1007-26AWG / Spring
Cable length			115±15mm / 8±1mm	115±15mm / 8±1mm	115±15mm / 6.5±1mm	115±15mm / 6.5±1mm
Mean time to failure (MTTF) 25°C		10000hrs	10000hrs	10000hrs	10000hrs	10000hrs
Application		Lab, without laser driver	General purpose	General purpose	Focus adjustable	Focus adjustable
Suggestion work distance			1~30 meters / 3~100 feet	1~30 meters / 3~100 feet	1~30 meters / 3~100 feet	1~30 meters / 3~100 feet

VLM-635-03 series VLM-650-03 series	VLM-635-04 series VLM-650-04 series	VLM-635-11 series VLM-650-11 series	VLM-635-12 series VLM-650-12 series	VLM-635-17 series	VLM-635-18 series VLM-650-18 series	VLM-650-21 series
						
Ø7 x 21 mm	Ø6.55 x 21.1 mm	Ø10.5 x 30 mm	Ø10.5 x 39 mm	Ø13 x 50 mm	Ø13 x 43.5 mm	Ø4 x 15 mm
2.6~6 VDC	2.6~6 VDC	2.6~6 VDC	2.6~6 VDC	3~6 VDC	2.6~6 VDC	3~6 VDC
Less than 35mA / 50mA	Less than 35mA / 50mA	Less than 35mA / 50mA	Less than 35mA / 50mA	Less than 60mA / 70mA / 85mA	Less than 35mA / 50mA	Less than 25mA / 30mA
Less than 1mW / 2.5mW	Less than 1mW / 2.5mW	Less than 1mW / 2.5mW	Less than 1mW / 2.5mW	0.7~0.9mW / 2~3mW / 5~6mW	2.5±1mW	0.7±0.2mW / 2±0.5mW
Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa / Class IIIb	Class IIIa	Class II / Class IIIa
630~645nm / 645~665nm	630~645nm / 645~665nm	630~645nm / 645~665nm	630~645nm / 645~665nm	630~645nm	630~645nm / 645~665nm	645~660nm
Plastic lens	Plastic lens	Glass lens	Plastic lens	Glass lens	Glass lens	Plastic lens
3mm	3mm	5mm	5mm	8mm	6mm	2.1mm
Ellipse	Ellipse	Circular	Circular	Circular	Circular	Ellipse
4±1 mm at 5M	6±1 mm at 5M	Less than 16mm at 40M	2.5±0.5 mm at 5M 10±1 mm at 20M	Less than 9 mm at 40M Less than 22 mm at 100M	Less than 16mm at 40M	7±1 mm at 5M
0.6 mRad	0.6 mRad	0.2 mRad	0.25 mRad	Less than 0.1 mRad	0.2 mRad	2.5 mRad
Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°
+15°C ~+30°C	+15°C ~+30°C	-20°C ~+50°C	+10°C ~+40°C	-10°C ~+50°C	-20°C ~+50°C	+15°C ~+30°C
-20°C ~+65°C	-20°C ~+65°C	-20°C ~+70°C	-20°C ~+65°C	-20°C ~+80°C	-40°C ~+70°C	-20°C ~+65°C
Steel	Zinc alloy	Bronze	Bronze	Aluminum	Brass	Brass
VDD(+)	VDD(+)	VDD(+)	VDD(+)	Insulated	VDD(+)	VDD(+)
20KV	20KV	30KV	30KV	30KV	30KV	20KV
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.	Level 1 - acc to JEDEC J-STD-020E.
1007-26AWG / 2509 connector	1007-26AWG / Spring	1007-26AWG / Spring	1007-26AWG / Spring	1007-26AWG	1007-26AWG	1007-26AWG
115±15mm / 90mm	115±15mm / 4±1mm	115±15mm / 8±1mm	115±15mm / 4.2±1mm	115±15mm	115±15mm	115±15mm
5000hrs	5000hrs	10000hrs	5000hrs / 10000hrs	10000hrs	5000hrs / 10000hrs	5000hrs
Economic type	Economic type	Long range application	Long range application	Long range application	Long range application	Small size
1~10 meters / 3~40 feet	1~10 meters / 3~40 feet	10~100 meters / 30~300 feet	10~100 meters / 30~300 feet	10~500 meters / 40~2000 feet	10~200 meters / 30~600 feet	1~10 meters / 3~40 feet

VLM-650-22 series	VLM-635-25 series	VLM-635-31 Series (TTL)	VLM-635-32 Series (TTL)	VLM-635-60 series	VLM-635-63 Series	VLM-635-91 LPB
						
Ø4 x 15 mm	Ø7 x 21 mm	Ø8 x 27 mm	Ø8.5 x 30.5 mm	Ø10 x 40 mm	Ø10.6 x 12.2 mm	Ø16 x 25 mm
3~6 VDC	2.6~6 VDC	3~6 VDC	3~6 VDC	3~6 VDC	3~6 VDC	4~6 VDC
Less than 25mA / 30mA	Less than 30mA	Less than 40mA / 60mA	Less than 40mA / 60mA	Less than 40mA / 60mA	Less than 40mA	Less than 500mA
0.7±0.2mW / 3±0.5mW	Less than 1mW	Less than 1mW / 4mW	Less than 1mW / 4mW	Less than 0.39mW / 1mW	Less than 0.39mW / 1mW	150mW
Class II / Class IIIa	Class II	Class II / Class IIIa	Class II / Class IIIa	Class II / Class IIIa	Class I / Class II	Class IIIb
645~660nm	630~645nm	630~645nm	630~645nm	630~645nm	630~645 nm	635nm
Glass lens	Plastic lens	Glass lens	Glass lens	Glass lens	Plastic lens	Glass lens
2.1mm	3mm	5mm	5mm	0.6mm	5mm	2.5mm
Ellipse	Ellipse	Ellipse	Ellipse	Circular	Ellipse	Ellipse
10±1 mm at 5M	Less than 1.1mm at 18~45cm	5±1 mm at 10M	5±1 mm at 10M	Less than 1mm at 0~50cm Less than 2mm at 50~90cm	Ø0.1~Ø0.5 (1/e <sup>2</sup> )	Less than 15mm at 10M
2.5 mRad		Less than 0.4mRad	Less than 0.4mRad	Less than 0.4 mRad		
Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°	Less than 3°
-10°C ~+50°C	+15°C ~+30°C	-20°C ~ +60°C	-20°C ~ +60°C	-20°C ~+60°C	-10°C ~+50°C	-20°C ~+60°C
-20°C ~+65°C	-20°C ~+65°C	-40°C ~ +85°C	-40°C ~ +85°C	-20°C ~+85°C	-20°C ~+65°C	-20°C ~+85°C
Brass	Steel	Aluminum	Steel	Stainless steel	Bronze	Bronze
VDD(+)	VDD(+)	Insulated	Insulated	Insulated	VDD(+)	VDD(+)
20KV	20KV	30KV	30KV	30KV / Arc protection	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.	Level 1 - acc to JEDEC J-STD-020E.
1007-26AWG	1007-26AWG / 2509 connector	1007-26AWG	1007-26AWG	2464 2-WIRE CABLE 26 AWG	1007-26AWG	1007-26AWG
115±15mm	115±15mm / 90mm	115±15mm	115±15mm	330±30mm	115±15mm	115±15mm
5000hrs	10000hrs	10000hrs	10000hrs	10000hrs	10000hrs	10000hrs
Small size	Laser engrave machine pilot laser	Modulation	Modulation	Industrial alignment	Micro dot size	High power
1~10 meters / 3~40 feet	18~45 cm / 6"~18"	1~10 meters / 3~40 feet	1~10 meters / 3~40 feet	0~1.2 meters / 0~4 feet	1~25 cm / 1/2"~10"	1~30 meters / 3~100 feet

CLM-635-01 LPO	CLM-635-02 LPT	CLM-635-11 LPO	CLM-635-12 LPT
			
Ø20 x 60 mm	Ø20 x 60 mm	20 x 20 x 60 mm	20 x 20 x 60 mm
3~6 VDC	3~6 VDC	3~6 VDC	3~6 VDC
Less than 50mA	Less than 50mA	Less than 50mA	Less than 50mA
Less than 0.39mW	Less than 1mW	Less than 0.39mW	Less than 1mW
Class I	Class II	Class I	Class II
630~645nm	630~645nm	630~645nm	630~645nm
Glass lens	Glass lens	Glass lens	Glass lens
0.8mm	3mm	0.8mm	3mm
Circular	Circular	Circular	Circular
Less than 1.2mm at 1M	Less than 9mm at 20M	Less than 1.2mm at 1M	Less than 9mm at 20M
0.15 mRad	0.15 mRad	0.15 mRad	0.15 mRad
Less than 1mm	Less than 1mm	Less than 1mm	Less than 1mm
-20°C ~+60°C	-20°C ~+60°C	-20°C ~+60°C	-20°C ~+60°C
-40°C ~+85°C	-40°C ~+85°C	-40°C ~+85°C	-40°C ~+85°C
Stainless steel	Stainless steel	Hard anodized aluminum	Hard anodized aluminum
Insulated	Insulated	Insulated	Insulated
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.
Micro USB (5V)	Micro USB (5V)	Micro USB (5V)	Micro USB (5V)
10000hrs	10000hrs	10000hrs	10000hrs
Concentricity Laser	Concentricity Laser	Concentricity Laser	Concentricity Laser
0~1 meter / 0~3 feet	1~30 meters / 3~100 feet	0~1 meter / 0~3 feet	1~30 meters / 3~100 feet