CW Solid State Lasers

Verdi G SLM-Series

High Performance Single-Frequency 532 nm Laser

Applications such as holography, interferometry, and spectroscopy require single longitudinal mode (SLM) lasers with narrow linewidths and long coherence lengths. The Verdi G SLM-Series provides up to 5 W of SLM 532 nm laser light in a simple, CDRH-compliant turnkey system.

Based on Coherent's unique Optically Pumped Semiconductor Laser (OPSL) technology, the Verdi G SLM-Series features SLM operation for the most demanding of applications. This, combined with stable beam parameters across output power, a diffraction-limited beam, low-noise, and high stability, provides unparalleled laser performance in a convenient package.

The Verdi G SLM-Series is the perfect match for customers in need of the highest performing 532 nm CW laser technology for commercial and scientific applications.

FEATURES

- Single longitudinal mode (<5 MHz linewidth)
- Extremely low noise
- Superior mode quality
- Power-invariant beam properties
- PermAlign™ solder-bonded optics technology
- AAA™ ultra-long life pump diodes

APPLICATIONS

- Holography
- Interferometry
- Spectroscopy

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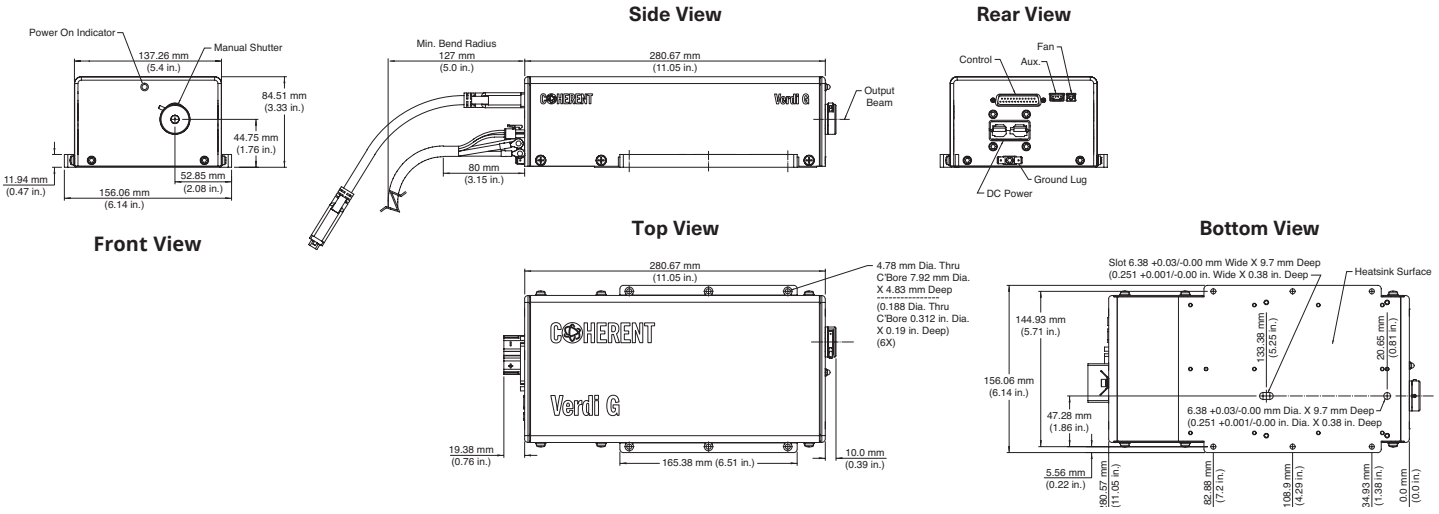
Optical Output A	Verdi G2	Verdi G5
Wavelength (nm)	532 ±2	
Pulse Format	CW	
Linewidth (FWHM) (MHz)	<5	
Spectral Purity (%)	>99	
Output Power (W)	2	5
Power Tunability[2]	10% to 100% full rated power	
Spatial Mode	TEM00	
Beam Quality	<1.1	
Beam Circularity[3]	1.0 ±0.1	
Beam Waist Diameter (mm) (FW, 1/e²)	2.3 ±0.3	
Beam Divergence (mrad) (FW, 1/e2)	<0.5	
Beam Waist Location[4] (m)	±0.5	
Beam Pointing Stability[5] (µrad/°C)	<5	
Horizontal Beam Position Tolerance[6] (mm)	±<1.0	
Vertical Beam Position Tolerance[6] (mm)	±<1.0	
Polarization Ratio	Linear, >100:1	
Polarization Direction	Vertical, ±5°	
Noise[7] (%, rms) (10 Hz to 100 MHz)	<0.03	<0.02
Power Stability[8] (%) (pk-pk)	±<1	
Warm-up Time (minutes)	30	
CDRH Compliant	Yes	
Utility Requirements		
Operating Voltage (VAC)	100 to 240	
Frequency (Hz)	50 to 60	
Power Consumption (W)	500	
Cooling Requirements	Laser head must be mounted on a suitable heatsink, e.g., Genesis CX Water-Cooled Riser[9]	
Environmental Conditions		
Ambient Temperature (°C) Operating Non-Operating	 10 to 40, non-condensing -10 to 60	
Relative Humidity[10] (%)	5 to 95	
Mechanical Conditions		
CE Marking	IEC 61010-1/EN 61010-1	
Dimensions (L x W x H) Laser Head[11] Benchtop Controller Cables (laser head to controller)	 281 x 156 x 85 mm (11.06 x 6.14 x 3.35 in.) 361 x 229 x 160 mm (14.22 x 9.01 x 6.29 in.) 3 m (10 ft.)	

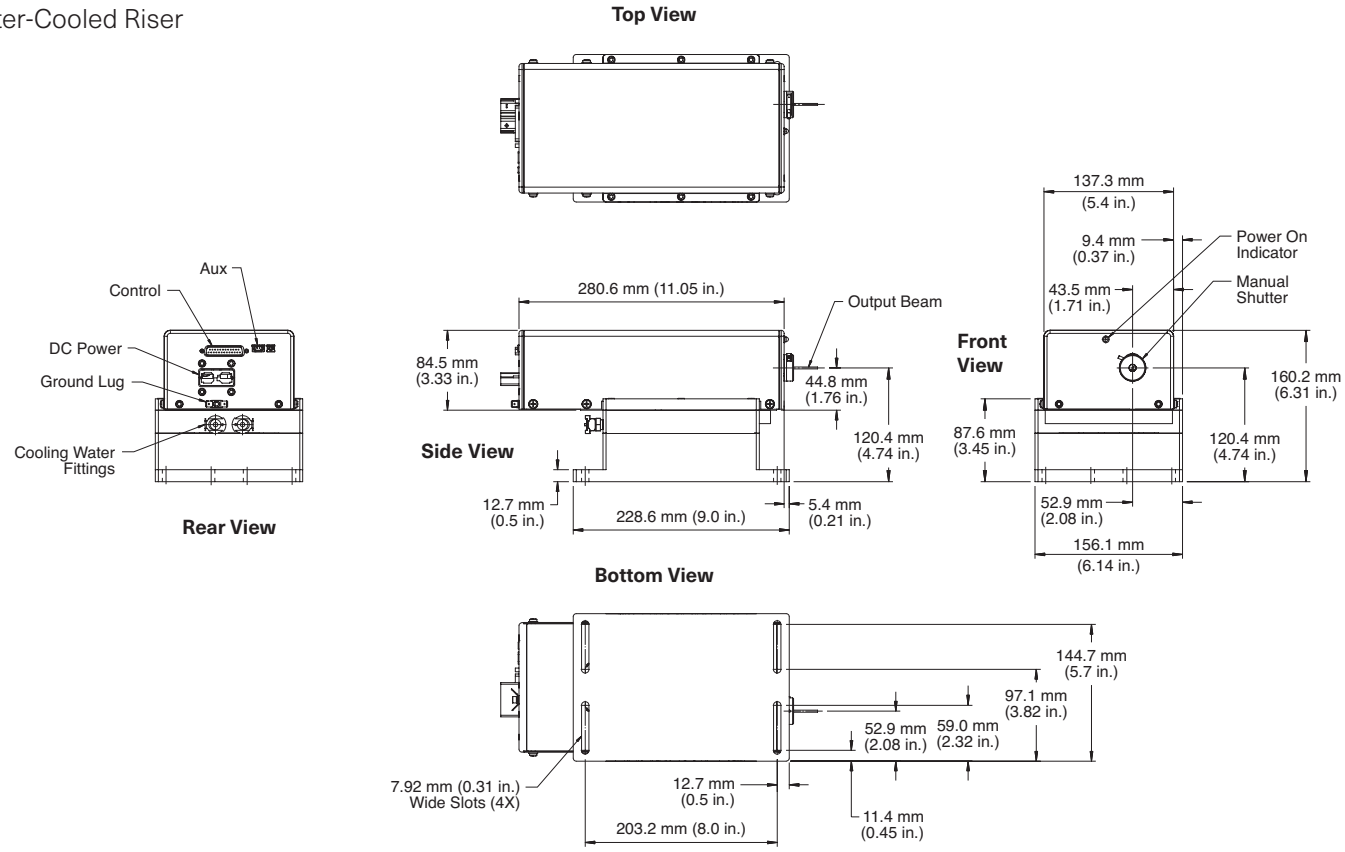
Notes:
1. Optical parameters measured at the output plane of the laser head, unless noted all parameters valid at the nominal output power and for the lifetime of the unit.
2. Allow 20 minutes for laser to stabilize between power changes.
3. Circularity defined as vertical diameter divided by horizontal diameter.
4. Negative value corresponds to a location inside head.
5. After 2-hour warm-up.
6. Measured at the output window.
7. Noise specification applies at full rated power. Noise varies roughly inversely proportionally to the output power
8. Measured over 8 hrs.
9. Refer to Operator's Manual for detailed requirements if supplying own heatsink
10. Non-condensing.
11. Back connector not included in laser head length dimension.

Mechanical Specifications

Laser Head



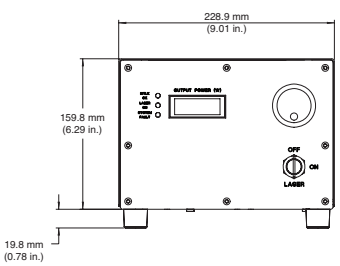
Verdi G SLM-Series Water-Cooled Riser



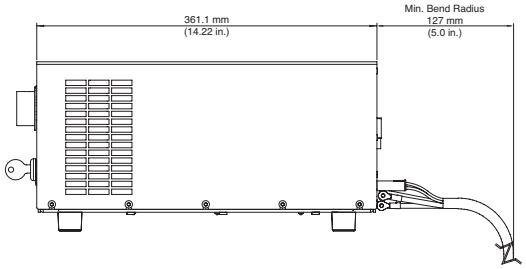
Mechanical Specifications

Power Supply

Front View



Side View



CE **ISO 9001 Registered**

U.S. Patent No. 5,991,318
U.S. Patent No. 6,167,068
U.S. Patent No. 6,285,702
U.S. Patent No. 6,438,153
U.S. Patent No. 6,683,901
U.S. Patent No. 7,180,928

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