CW Solid State Lasers

Verdi G STM-Series

High Performance 532 nm CW Laser

The Verdi G is a high performance CW laser providing up to 8 W at 532 nm, ideal for demanding applications ranging from semiconductor inspection to Ti:Sapphire laser pumping.

Based on the unique Coherent Optically Pumped Semiconductor Laser (OPSL) technology, the Verdi G produces a diffraction limited, power-invariant beam with extremely low noise and high stability.

High reliability and robustness is ensured by the use of Coherent's ultra-long life AAA™ pump diodes, patented PermAlign™ technology, and rigorous HALT/HASS protocols.

FEATURES

- Up to 8 W at 532 nm
- Extremely low noise
- Superior mode quality
- Power-invariant beam properties
- PermAlign™ solder-bonded optics technology
- AAA™ ultra-long life pump diodes
- OEM and benchtop configuration options

APPLICATIONS

- Ti:Sapphire pumping
- Semiconductor inspection
- DNA sequencing
- Particle monitoring

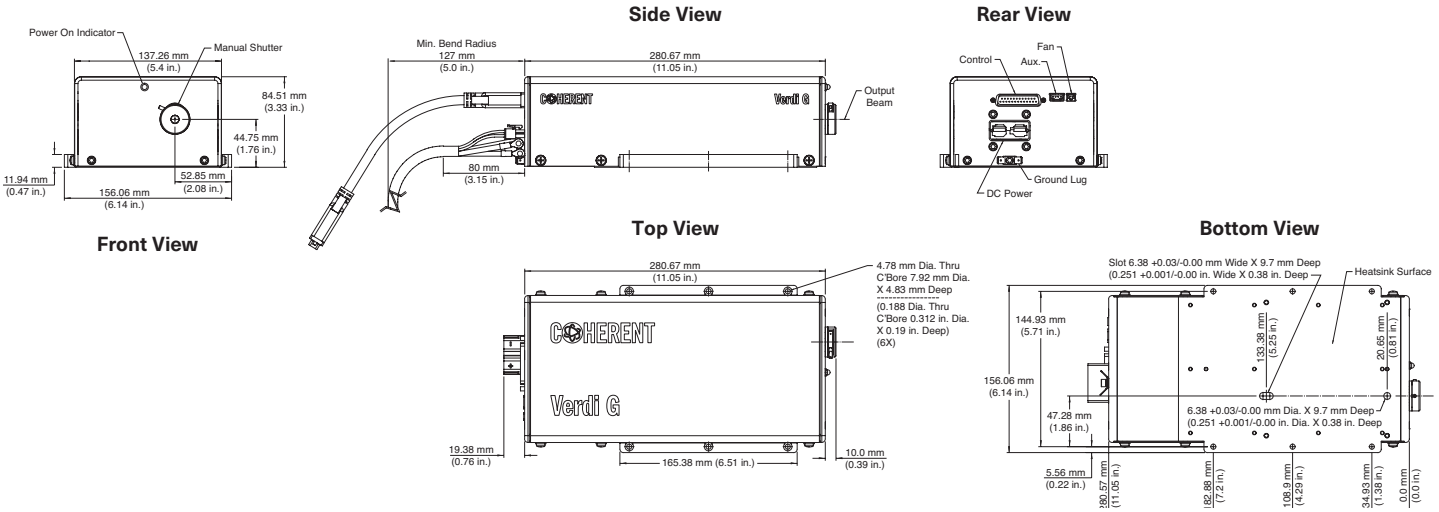
COHERENT

Specifications[1]	Verdi G2	Verdi G5/G7/G8
Wavelength (nm)	532 ±2	
Pulse Format	CW	
Linewidth (FWHM) (GHz)	<30	
Spectral Purity (%)	>99	
Output Power (W)	2	5, 7, 8
Power Tunability	10% to 100% full rated power	
Spatial Mode	TEM_{00}	
Beam Quality	<1.1	
Beam Circularity[2]	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[3] (m)	±0.5	
Beam Pointing Stability[4] (µrad/°C)	<5	
Horizontal Beam Position Tolerance[5] (mm)	±<1.0	
Vertical Beam Position Tolerance[5] (mm)	±<1.0	
Polarization Ratio	Linear, >100:1	
Polarization Direction	Vertical, ±5°	
Noise[6] (%, rms) (10 Hz to 100 MHz)	<0.03	<0.02
Power Stability[6] (%) (pk-pk)	±<1	
Warm-up Time (minutes)	10	
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 or Air-Cooled Riser	
Environmental Conditions		
Ambient Temperature (°C) Operating Non-Operating	 10 to 40, non-condensing -10 to 60	
Relative Humidity[7] (%)	5 to 95	
Mechanical Conditions		
CE Marking	IEC 61010-1/EN 61010-1	
Dimensions (L x W x H) Laser Head[8] Benchtop Power Supply 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.)	
Weight Laser Head (including cables) Benchtop Power Supply	 7.1 kg (15.6 lbs) 6.0 kg (13.2 lbs.)	

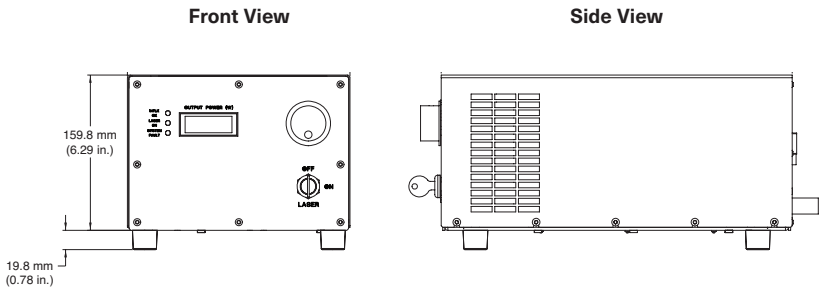
Notes:
1. Optical parameters measured at the output plane of the laser head, unless noted all parameters valid at the nominal output power and for the lifetime of the unit.
2. Circularity defined as vertical diameter divided by horizontal diameter.
3. Negative value corresponds to a location inside head.
4. After 2-hour warm-up.
5. Measured at the output window. Positions are relative to the base and side of the laser as shown in the drawing.
6. Noise specification applies at full rated power. Noise varies roughly inversely proportionally to the output power.
7. Measured over 8 hrs.
8. Non-condensing.
9. Back connector not included in laser head length dimension.

Mechanical Specifications

Verdi G2/G5/G7/G8
Laser Head

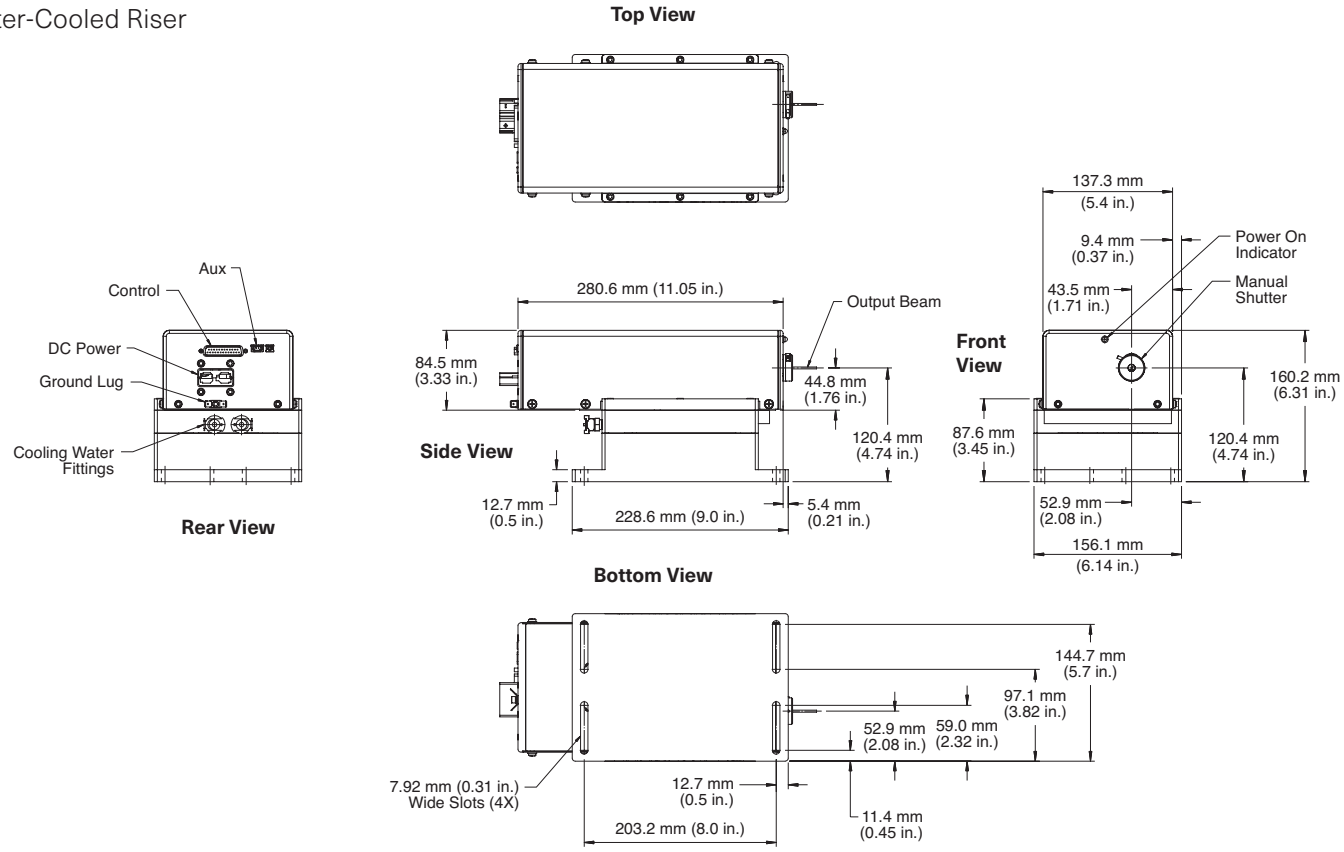


Verdi G2/G5/G7/G8
Benchtop Power Supply



Mechanical Specifications

Verdi G2/G5/G7/G8
Water-Cooled Riser



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

For more information
www.coherent.com