



High Power CW 532 nm DPSS Lasers Sprout-G Series



Features

- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser alignment
- Long lifetime pump diode pack fiber-coupled to laser head
- Low noise option <math><0.02\%</math> rms with Noise Elimination Technology
- Excellent long-term power stability <math><0.5\%</math> rms over 24 hours
- Closed-loop, purpose-built TEC chiller integrated in power supply
- 10, 12, 15 and 18 W versions

Applications

- Pumping Ti:Sapphire lasers:
ultrafast & continuous-wave
- Pumping dye lasers
- Flow visualization, PIV
- Flow cytometry
- Spectroscopy

Patented

Sprout™ is a compact, diode-pumped solid-state (DPSS) laser providing high-power, continuous-wave (CW) power at 532nm in a near- perfect TEM₀₀ mode with extremely low optical noise and excellent long-term stability. Sprout™ is truly a next-generation laser designed and manufactured using many years of experience to provide a sealed, turn-key source of collimated green light with high spectral purity.

A number of key technologies enable Sprout™ to guarantee this performance. Seal™ technology keeps all dirt, dust and moisture out of the laser head to provide years of uninterrupted usage without need for cleaning or maintenance. LockT™ technology locks all laser head optics permanently in perfect alignment. Finally, for those applications requiring near-zero optical noise, Noise Elimination Technology (NET™) is the solution.

The laser head is a monolithic 3-dimensional design for ruggedness and compactness to minimize the space consumed in your lab or instrument. The fiber-coupled pump diode package, contained in the power supply, has a typical mean time to failure (MTTF) of more than 50,000 hours to minimize cost-of-ownership. The power supply also contains an integrated thermo-electrically-cooled (TEC) chiller. The chiller is designed specifically for this application to provide increased reliability and reduced overall system footprint. Additional features include automatic laser power stabilization and USB, RS-232 and Ethernet interfaces for external monitoring, control and remote service.

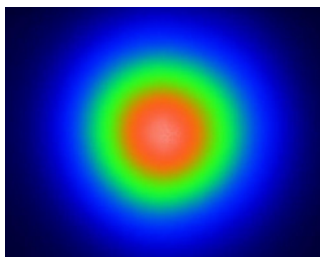
Sprout™ is a state-of-the-art laser designed for today's applications. It combines superb performance and tremendous value for today's market.



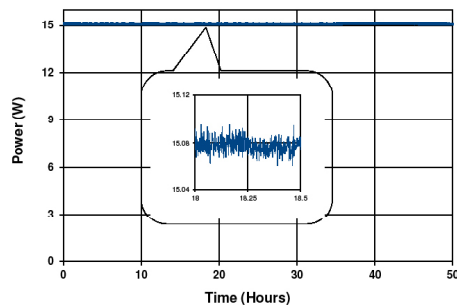
Laser Output Characteristics ^{1,8}	G-10W	G-12W	G-15W	G-18W
Average Output Power	> 10 W	> 12 W	> 15 W	> 18 W
Wavelength	532 nm			
Spectral Purity ²	> 99.9 %			
Spatial Mode	TEM ₀₀			
Beam Quality (M ²)	1.0 - 1.1			
Beam Ellipticity	< 1.0 : 1.1			
Beam Diameter ³	2.3 mm ± 10%			
Beam Divergence ⁴	< 0.5 mrad			
Pointing Stability ⁵	< 2 μrad/°C			
Power Stability ⁶	< ± 0.25 % rms			
Noise ⁷	Standard version: < 0.1 % rms Low noise (NET) version: < 0.02 % rms			
Polarization	> 100:1 vertical Horizontal polarization option available			
Power Requirements				
Operating Voltage	100-240 VAC, 50 Hz / 60 Hz			
Power Consumption	800 W max, 500 W typical			
Cooling Requirements				
Laser Head	Closed-loop chiller in Power Supply - Cooler			
Power Supply (in Power Supply - Cooler)	Air-cooled			
Environmental Specifications				
Operating Temperature	64-90°F (18-32°C)			
Relative Humidity	8-85%, non-condensing			
Laser Head - Physical				
Dimensions (Height x Width x Length)	2.7 x 5.3 x 8.9 inches (69 x 135 x 225 mm)			
Weight	approx. 7.0 lbs (3.2 kg)			
Cable Length	10 ft (3 m)			
Power Supply-Cooler - Physical				
Dimensions (Height x Width x Depth)	13.6 x 15.7 x 18.9 inches (345 x 398 x 480 mm)			
Weight	approx. 70 lbs (32 kg)			

Notes:

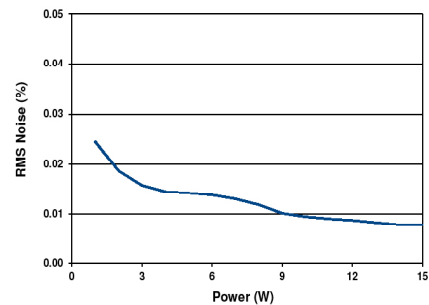
1. All performance specifications are guaranteed at specified power
2. Output power at 532 nm compared to output power at 1064 nm
3. 1/e², measured at the output port of the laser head
4. Full angle (1/e²), measured at the output port of the laser head
5. Measured at far-field x and y positions after a 30 minute warm-up and over a 20°C to 30°C temperature range
6. Measured over a 24 hour period after a 15 minute warm-up
7. Measured from 10 Hz to 10 MHz
8. Lighthouse Photonics is continually improving the performance of its products. Specifications subject to change without notice.



Typical Far-field beam profile

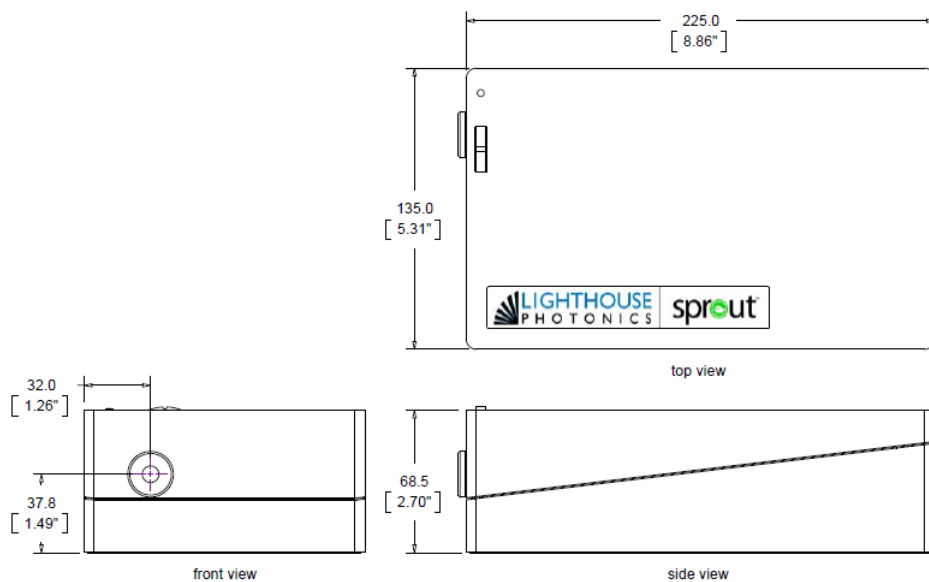


Power stability <0.2% rms over >24 hours



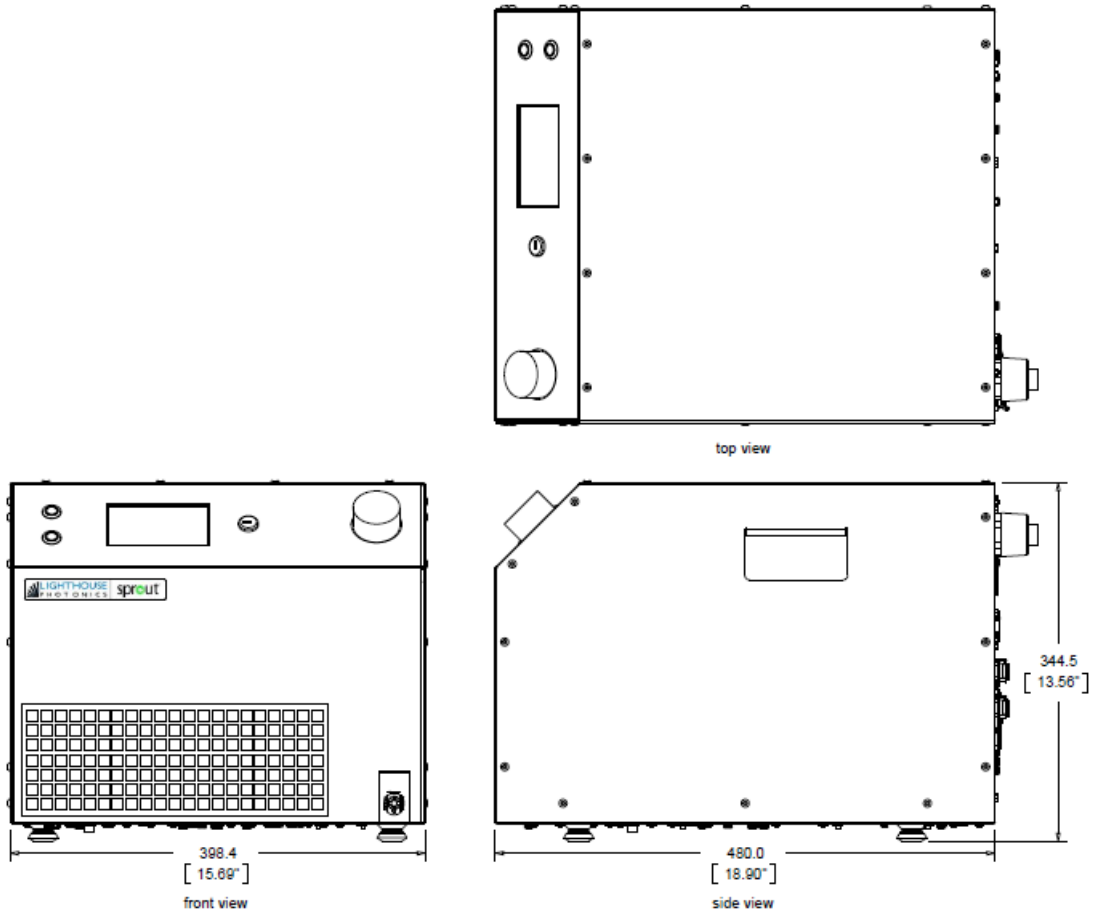
Optical noise <0.02% rms for NET™ version

Laser Head Dimensions





Power Supply - Cooler Dimensions



For more information go to: www.lighthousephotonics.com

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