



High Power CW 532 nm DPSS Lasers Sprout-H Series



Features

- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser head alignment
- Long lifetime pump diode pack integrated inside 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
- Disconnectable, 3 meter long control cable
- 5, 6, 7, 8, 10 and 12 W versions

Applications

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

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 pump diode package, integrated inside the laser head, has a typical mean time to failure (MTTF) of more than 50,000 hours to minimize cost-of-ownership. Locating the pump diode in the laser head rather than the power supply eliminates the fiber optic delivery cable.

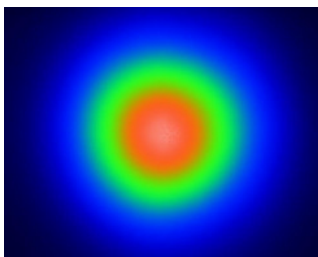
A 3 meter long, flexible, disconnectable control cable connects the laser head to the power supply. The power supply also contains an integrated TEC-based chiller purpose-built for this application to provide increased reliability and reduced overall system footprint. Additional features include automatic laser power control and both USB and RS-232 interfaces for external monitoring, control and remote service.

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

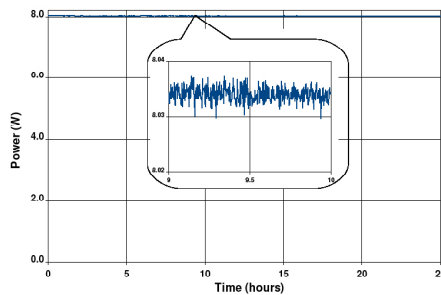
Laser Output Characteristics ^{1,8}	H-5W	H-6W	H-7W	H-8W	H-10W	H-12W
Average Output Power	> 5 W	> 6 W	> 7 W	> 8 W	> 10 W	> 12 W
Wavelength	532 nm					
Spectral Purity ²	> 99.9 %					
Spatial Mode	TEM ₀₀					
Beam Quality (M ²)	1.0 - 1.1					
Beam Ellipticity	< 1.0 : 1.1					
Beam Diameter ³	2.3 mm ± 10%					
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	600 W max, 350 W typical					
Cooling Requirements						
Laser Head	Closed-loop TEC chiller built into separate compartment in power supply chassis					
Power Supply	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 9.4 inches (69 x 135 x 240 mm)					
Weight	9.2 lbs (4.2 kg)					
Cable Length	10 ft (3 m) 16 ft (5 m) option available for 5W, 6W and 7W versions					
Power Supply-Cooler - Physical						
Dimensions (Height x Width x Depth)	13.6 x 12.7 x 18.9 inches (345 x 323 x 480 mm)					
Weight	approx. 55 lbs (25 kg)					

Notes:

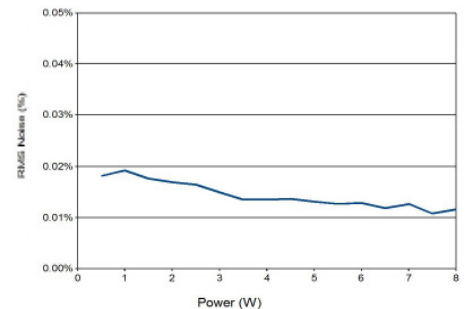
- All performance specifications are guaranteed at specified power
- Output power at 532 nm compared to output power at 1064 nm
- 1/e², measured at the output port of the laser head
- Full angle (1/e²), measured at the output port of the laser head
- Measured at far-field x and y positions after a 30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



Typical Far-field beam profile



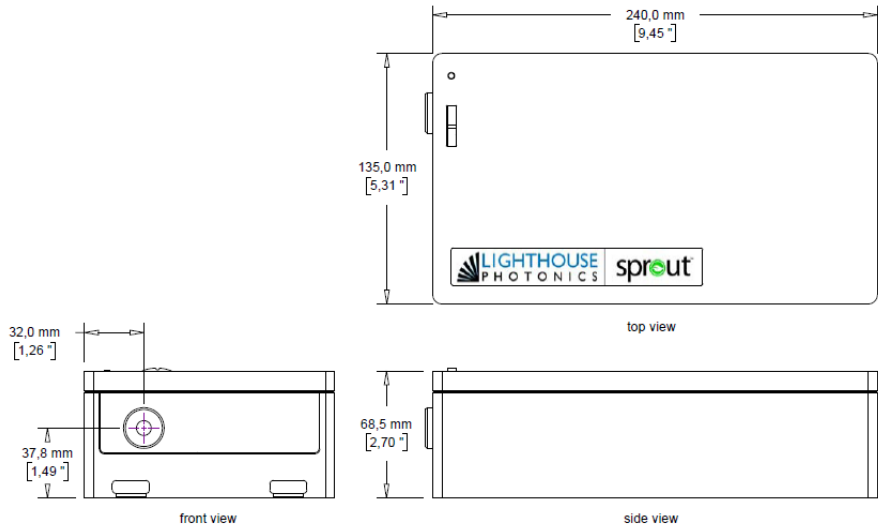
Power stability <0.2% rms over >24 hours



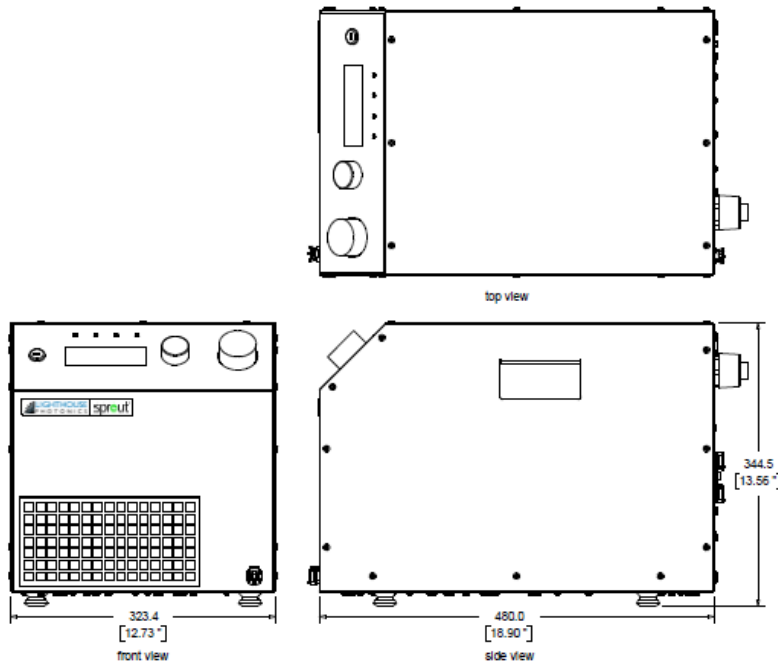
Optical noise <0.02% rms for NET™ version



Laser Head Dimensions



Power Supply-Cooler Dimensions



For more information go to: www.lighthousephotonics.com

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