



High Power CW 532 nm DPSS Lasers



Features

- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser alignment
- Long lifetime diode pack fiber-coupled to laser head
- Low noise <0.03% rms with Noise Elimination Technology
- Excellent long-term power stability <0.5% rms over 24 hours
- Closed-loop, purpose-built TEC chiller integrated in power supply
- 5, 6, 8 and 10 W versions

Applications

- Pumping Ti:Sapphire lasers:
ultrafast & continuous-wave
- Pumping dye lasers
- Spectroscopy
- Flow cytometry
- Solar cell processing
- Ophthalmology
- Medical diagnostics
- Film subtitling

Patent Pending

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 cavity optics permanently in perfect alignment. Finally, for those applications requiring near-zero optical noise, Noise Elimination Technology (NET™) is the solution.

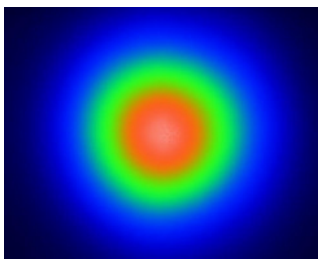
The laser head is a monolithic 3-dimensional design for ruggedness and compactness to minimize the space consumed in your lab or instrument. The fiber-coupled pump diode package, contained in the power supply, has an expected lifetime of more than 20,000 hours to minimize cost-of-ownership. The power 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 control and both USB and RS-232 interfaces for external monitoring and control.

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

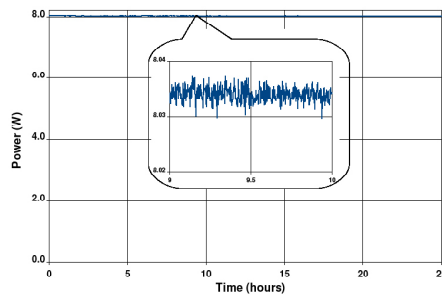
Laser Output Characteristics ^{1,8}	Sprout-5	Sprout-6	Sprout-8	Sprout-10
Average Output Power	> 5 W	> 6 W	> 8 W	> 10 W
Wavelength	532 nm			
Spectral Purity ²	> 99.9 %			
Spatial Mode	TEM ₀₀			
Beam Quality (M ²)	1.0 - 1.1			
Beam Ellipticity	< 1.0 : 1.1			
Beam Diameter ³	2.3 mm ± 10%			
Beam Divergence ⁴	< 0.5 mrad			
Pointing Stability ⁵	< 2 μrad/°C			
Power Stability ⁶	< ± 0.25 % rms			
Noise ⁷	Standard version: < 0.2 % rms Low noise (NET) version: < 0.03 % rms			
Polarization	> 100:1 vertical			
Power Requirements				
Operating Voltage	100-240 VAC, 50 Hz / 60 Hz			
Power Consumption	500 W max, 300 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 10.1 inches (69 x 135 x 256 mm)			
Weight	7.0 lbs (3.2 kg) approx.			
Cable Length	10 ft (3 m)			
Power Supply-Cooler - Physical				
Dimensions (Height x Width x Depth)	13.0 x 12.7 x 18.2 inches (330 x 323 x 463 mm)			
Weight	55 lbs (25 kg) approx.			

Notes:

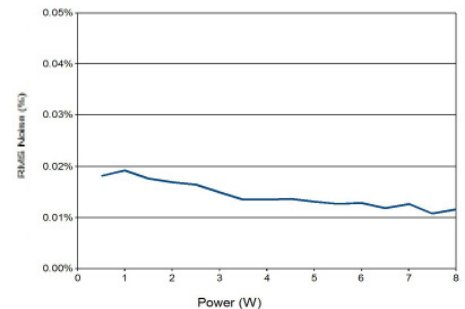
- All performance specifications are guaranteed at specified power
- Output power at 532 nm compared to output power at 1064 nm
- 1/e², measured at the output port of the laser head
- Full angle (1/e²), measured at the output port of the laser head
- Measured at far-field x and y positions after a 30 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



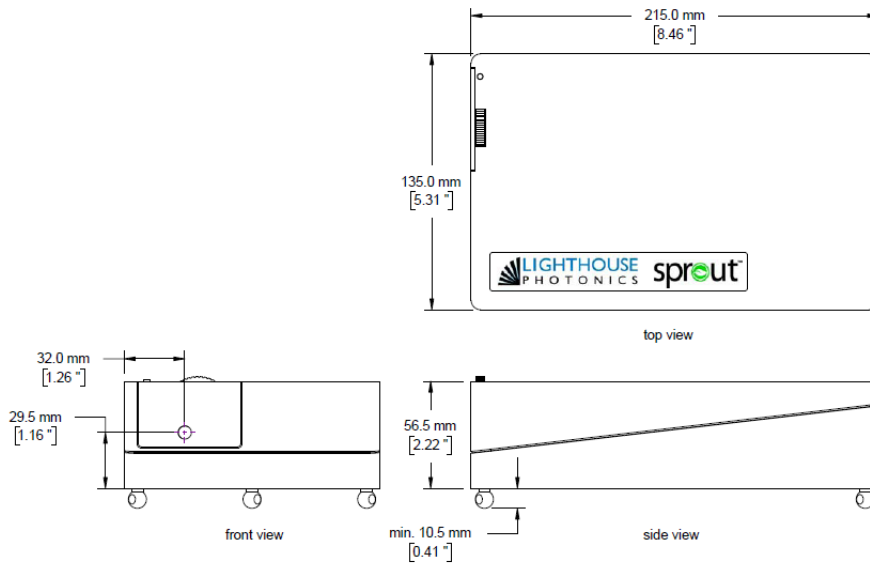
Power stability <math>< 0.2\%</math> rms over >24 hours for Sprout-8



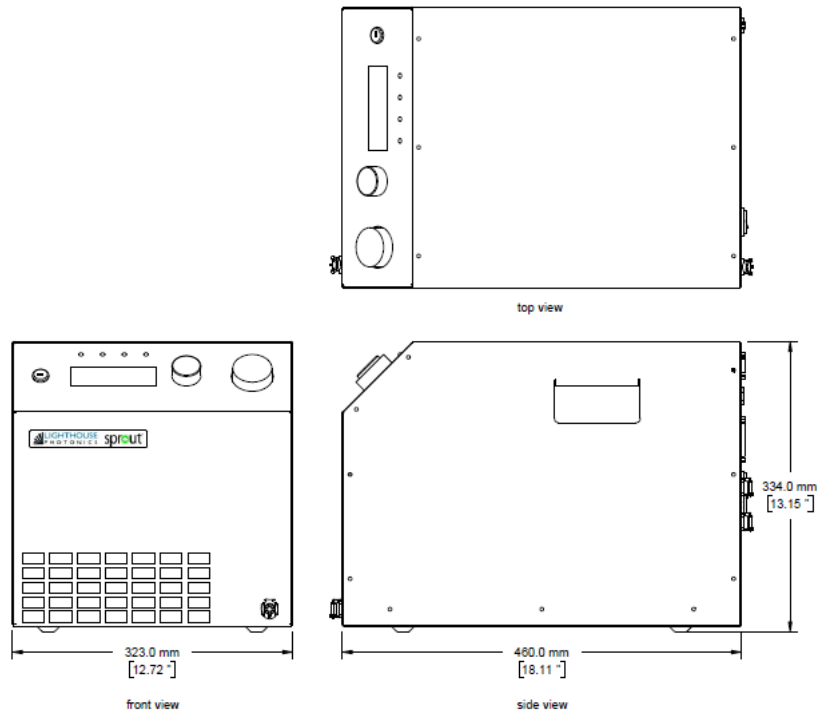
Optical noise <math>< 0.02\%</math> rms for NET™ version of Sprout-8



Laser Head Dimensions



Power Supply - Cooler Dimensions



For more information go to: www.lighthousephotonics.com

Lighthouse Photonics Inc.
528 E Weddell Drive, Suite 8
Sunnyvale, CA 94089 USA
phone: 408-752-0740
efax: 408-773-6240
e-mail: info@lighthousephotonics.com



Copyright © 2010 Lighthouse Photonics Inc. All rights reserved.
Sprout, Seal, LockT and NET are trademarks of Lighthouse Photonics Inc.



No. 2010-07-02