



High Power CW 532 nm DPSS Lasers Sprout-D 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 <0.02% rms with Noise Elimination Technology
- Excellent long-term power stability <0.5% rms over 24 hours
- Bench-top, compact power supply with touch-screen control
- 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
- 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 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.

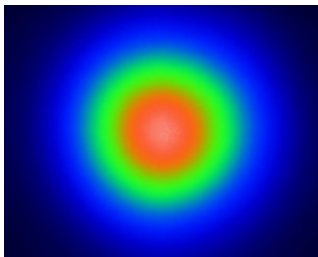
A 3 meter long, flexible, disconnectable control cable connects the laser head to a compact power supply. The power supply can sit next to the laser head or on an overhead shelf. Additional system features include automatic laser power control and both USB and RS-232 interfaces for external monitoring, 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.

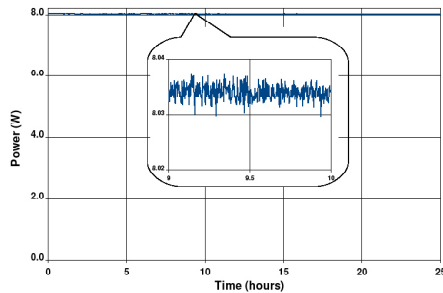
Laser Output Characteristics ^{1,9}	D-5W	D-6W	D-7W	D-8W	D-10W	D-12W
Average Output Power	> 5 W	> 6 W	> 7 W	> 8 W	> 10 W	> 12 W
Wavelength	532 nm					
Spectral Purity ²	> 99.9 %					
Spatial Mode	TEM ₀₀					
Beam Quality (M ²)	1.0 - 1.1					
Beam Ellipticity	< 1.0 : 1.1					
Beam Diameter ³	2.3 mm ± 10%					
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	300 W max, 200 W typical					
Cooling Requirements						
Laser Head ⁸	200 W heat removal capacity, water temperature 23°C ± 1°C					
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 - Physical						
Dimensions (Height x Width x Depth)	4.7 x 13.9 x 14.1 inches (119 x 353 x 360 mm)					
Weight	20.0 lbs (9.1 kg)					

Notes:

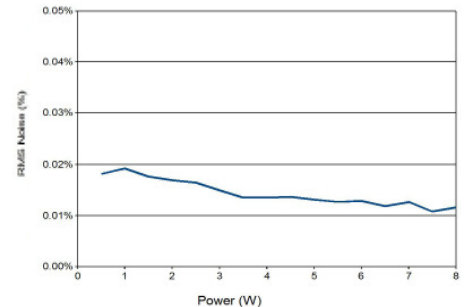
1. All performance specifications are guaranteed at specified power
2. Output power at 532 nm compared to output power at 1064 nm
3. 1/e², measured at the output port of the laser head
4. Full angle (1/e²), measured at the output port of the laser head
5. Measured at far-field x and y positions after 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. Assuming an environmental temperature for laser head of 25°C or less
9. Lighthouse Photonics is continually improving the performance of its products. Specifications subject to change without notice.



Typical Far-field beam profile



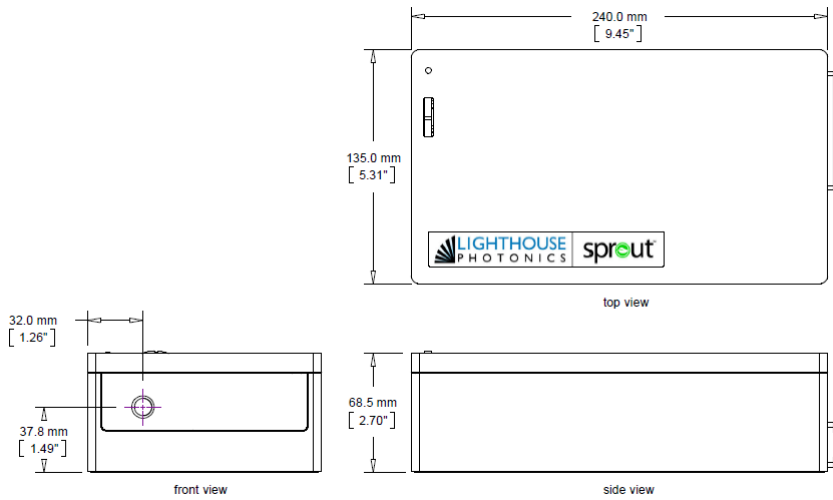
Power stability <0.2% rms over >24 hours



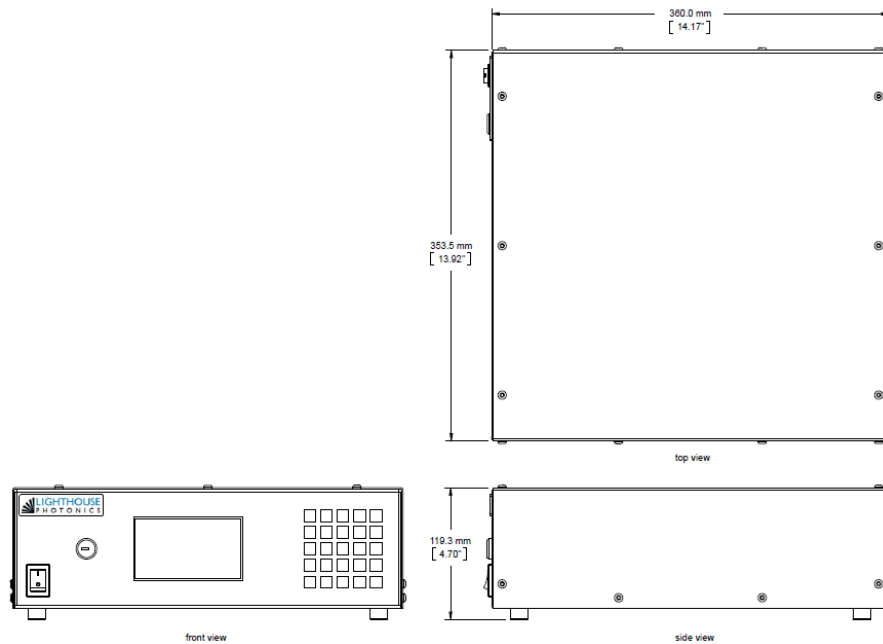
Optical noise <0.02% rms for NET™ version



Laser Head Dimensions



Power Supply Dimensions



For more information go to: www.lighthousephotonics.com

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