High Power CW 532 nm DPSS Lasers
Sprout-D Series

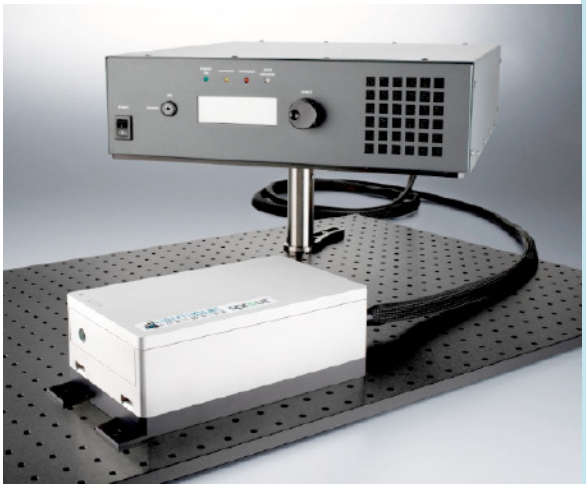
Features
- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser head alignment
- Long lifetime pump diode pack integrated inside laser head
- Low noise option <0.03% rms with Noise Elimination Technology
- Excellent long-term power stability <0.5% rms over 24 hours
- Rack-mountable or shelf-mountable power supply
- Disconnectable, 3 meter long control cable
- 5, 6, 7, 8 and 10 W versions

Applications
- Pumping Ti:Sapphire lasers: ultrafast & continuous-wave
- Pumping dye lasers
- Spectroscopy
- Flow cytometry
- Solar cell processing
- 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 TEM_{00} 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 either be mounted on an overhead shelf or into a 19” rack. Additional system features include automatic laser power control and both USB and RS-232 interfaces for external monitoring, control and remote service.

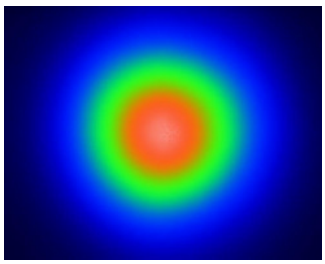
Sprout™ is a state-of-the-art laser designed for today’s integrated solutions. It combines superb performance and tremendous value for today’s market.

LIGHTHOUSE PHOTONICS

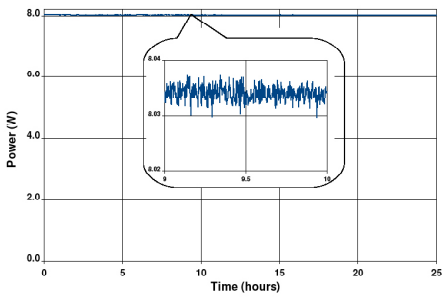
sprout™

Laser Output Characteristics[1,9]	D-5W	D-6W	D-7W	D-8W	D-10W
Average Output Power	> 5 W	> 6 W	> 7 W	> 8 W	> 10 W
Wavelength	532 nm				
Spectral Purity[2]	> 99.9 %				
Spatial Mode	TEMoo				
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 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]	100 W heat removal capacity				
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				
Power Supply - Physical					
Dimensions (Height x Width x Depth)	4.8 x 17.2 x 18.7 inches (122 x 438 x 475 mm)				
Weight	27.5 lbs (12.5 kg)				

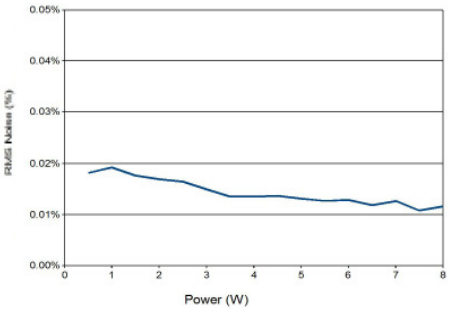
Notes:
1. All performance specifications are guaranteed at specified power
2. Output power at 532 nm compared to output power at 1064 nm
3. $1/e^2$, measured at the output port of the laser head
4. Full angle ($1/e^2$), measured at the output port of the laser head
5. Measured at far-field x and y positions 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

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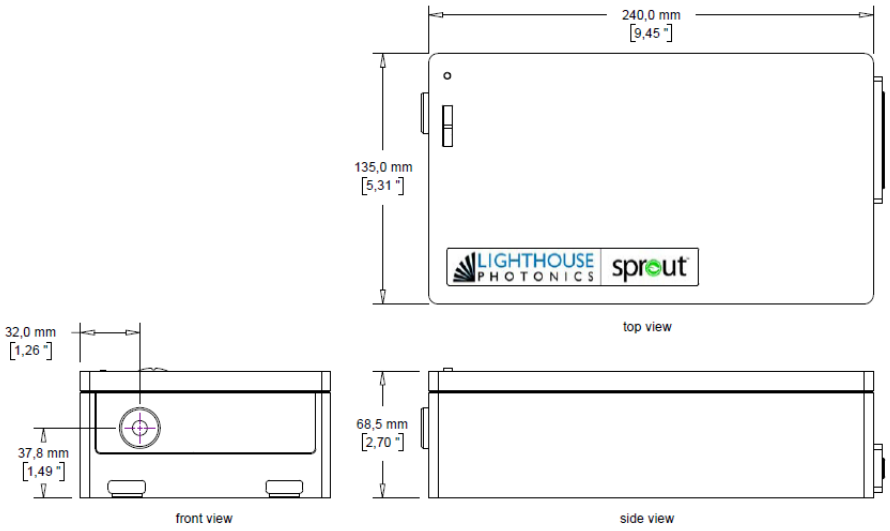
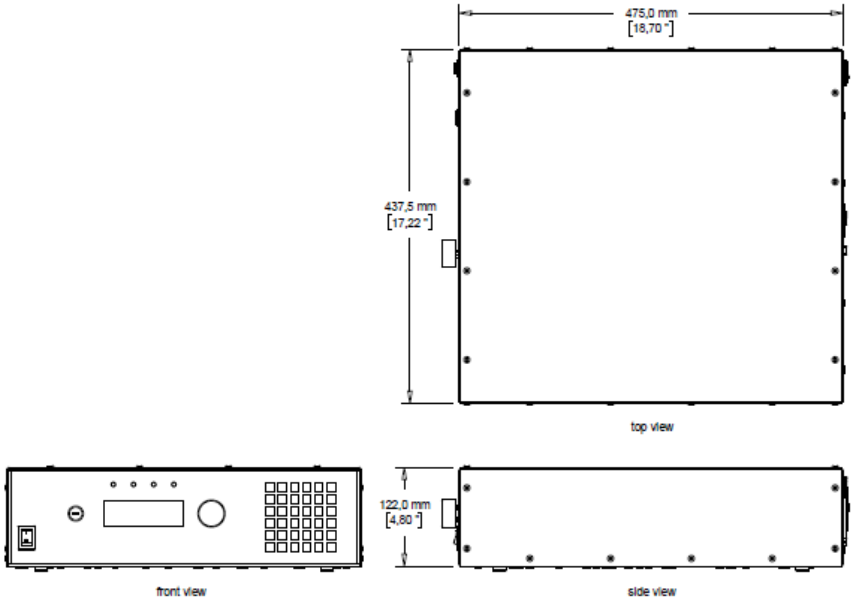
Laser Head Dimensions



Power Supply Dimensions



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