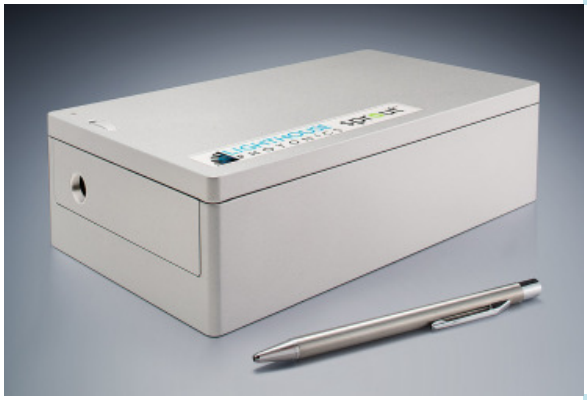
High Power CW 532 nm DPSS Lasers
Sprout-H Series



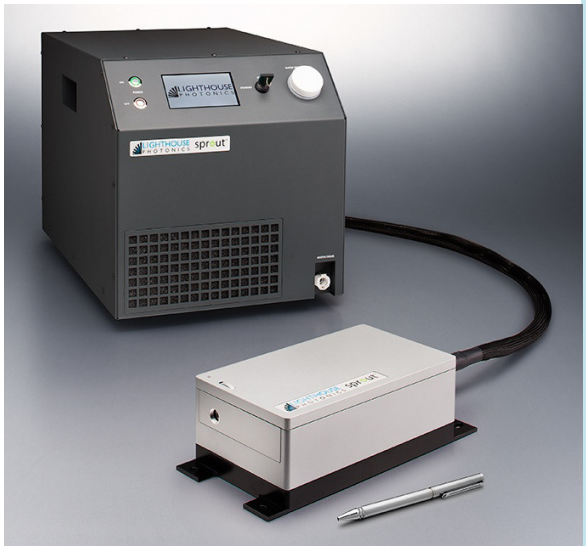
Features
- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser head alignment
- Long lifetime pump diode pack integrated inside laser head
- Low noise option <0.02% rms with Noise Elimination Technology
- Excellent long-term power stability <0.5% rms over 24 hours
- Closed-loop, purpose-built TEC chiller integrated in power supply
- Disconnectable, 3 meter long control cable
- 5, 6, 8, 10, 12, 15, 18 and 20 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 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 the power supply. The power supply, with touch-screen control, 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 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 integrated solutions. It combines superb performance and tremendous value for today's market.

LIGHTHOUSE PHOTONICS

sprout™

Laser Output Characteristics[1,8]	H-5W	H-6W	H-8W	H-10W	H-12W	H-15W	H-18W	H-20W
Average Output Power	> 5 W	> 6 W	> 8 W	> 10 W	> 12 W	> 15 W	> 18 W	> 20 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: < 0.1 % 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	5W-12W versions: 600 W max, 350 W typical 15W-20W versions: 1000 W max, 600 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)	5W-12W versions: 2.7 x 5.3 x 9.4 inches (69 x 135 x 240 mm) 15W-20W versions: 2.7 x 5.3 x 16.8 inches (69 x 135 x 425 mm)							
Weight	5W-12W versions: 9.2 lbs (4.2 kg) 15W-20W versions: 16.7 lbs (7.6 kg)							
Cable Length	10 ft (3 m) 16 ft (5 m) option available for 5W-12W versions							
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	5W-12W versions: approx. 70 lbs (32 kg), including cable 15W-20W versions: approx. 77 lbs (35 kg), including cable							

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. Lighthouse Photonics is continually improving the performance of its products. Specifications subject to change without notice.

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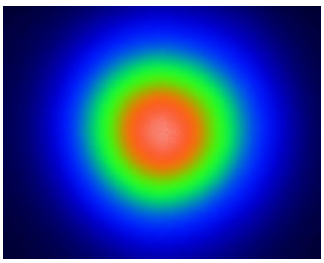
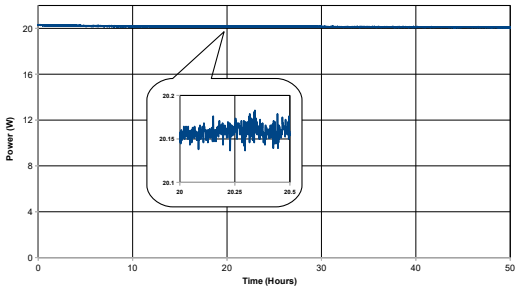
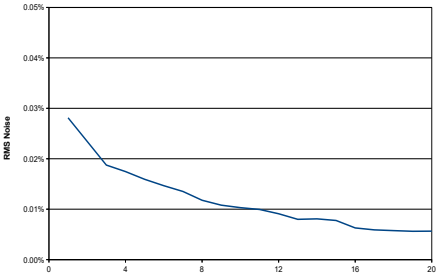


Typical Far-field beam profile



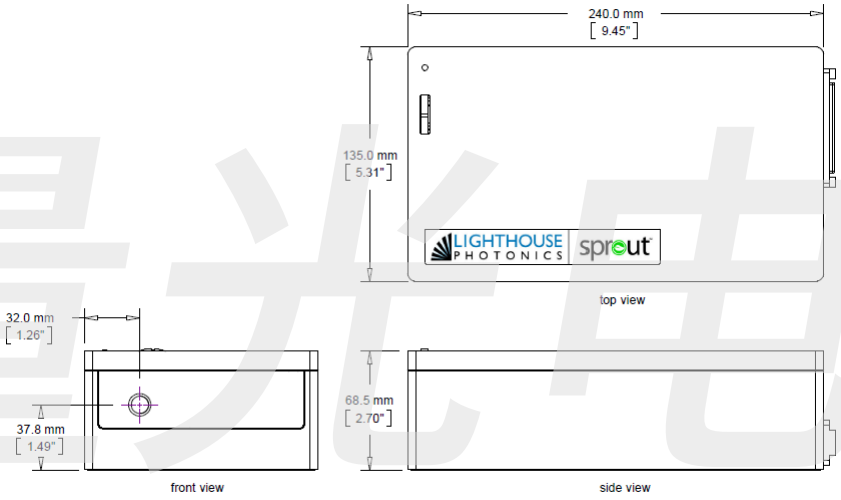
Power stability <0.1% rms
over >24 hours



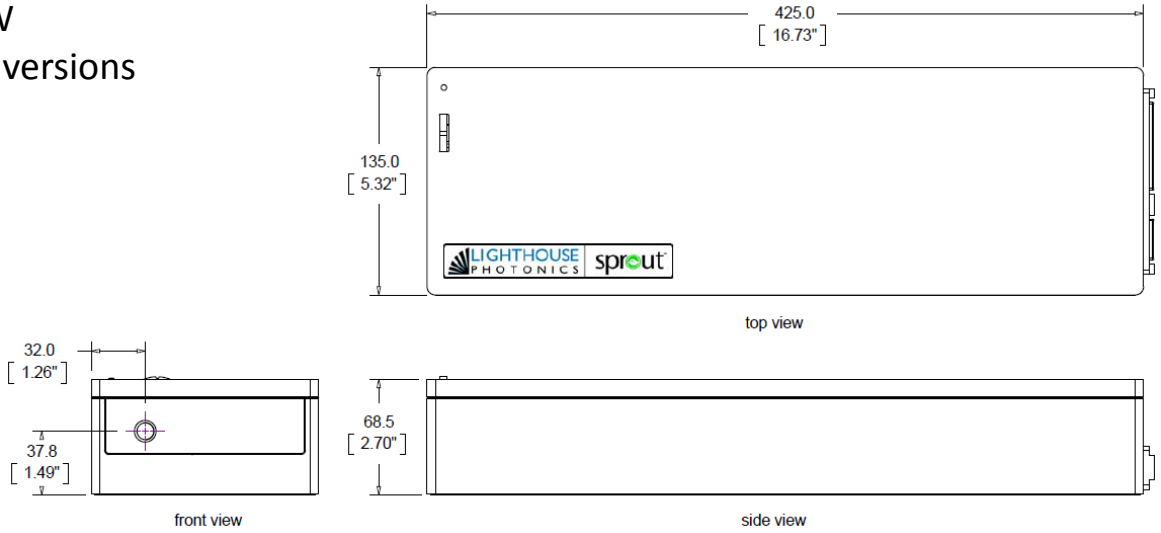
Optical noise <0.02% rms
for NET™ version

Laser Head Dimensions

5W, 6W, 8W, 10W,
and 12W versions



15W, 18W
and 20W versions



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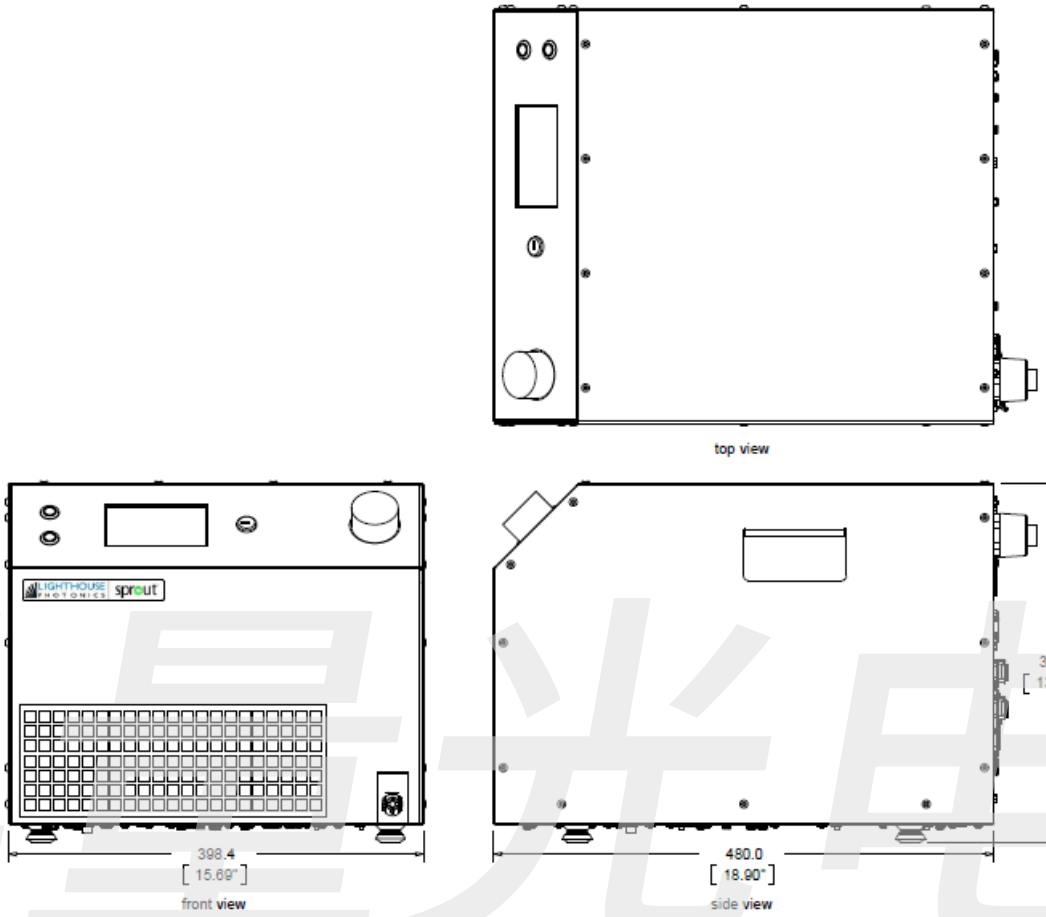
Power Supply - Cooler Dimensions



For more information go to: **www.lighthousephotonics.com**

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