



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 USB/RS-232 interface for external monitoring and control.

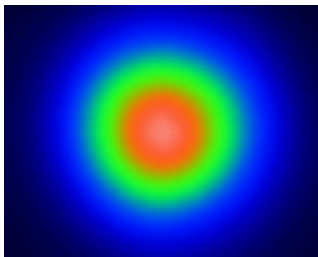
Sprout™ is a state-of-the-art laser designed for today's applications. It combines superb performance and tremendous value for today's market.



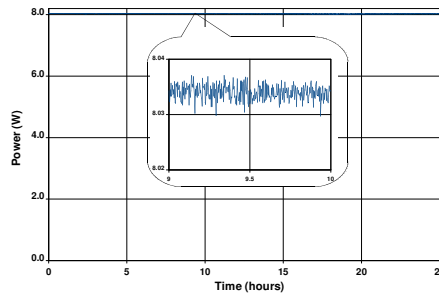
| Laser Output Characteristics ^{1,8} | Sprout-5 | Sprout-6 | Sprout-8 | Sprout-10 |
|---|--|----------|----------|-----------|
| Average Output Power | > 5 W | > 6 W | > 8 W | > 10 W |
| Wavelength | 532 nm | | | |
| Spectral Purity ² | > 99.9 % | | | |
| Spatial Mode | TEM ₀₀ | | | |
| Beam Quality (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:

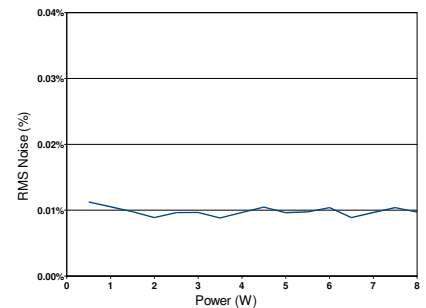
1. All performance specifications are guaranteed at specified power
2. Output power at 532 nm compared to output power at 1064 nm
3. 1/e², measured at the output port of the laser head
4. Full angle (1/e²), measured at the output port of the laser head
5. Measured at far-field x and y positions after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



Typical Far-field beam profile



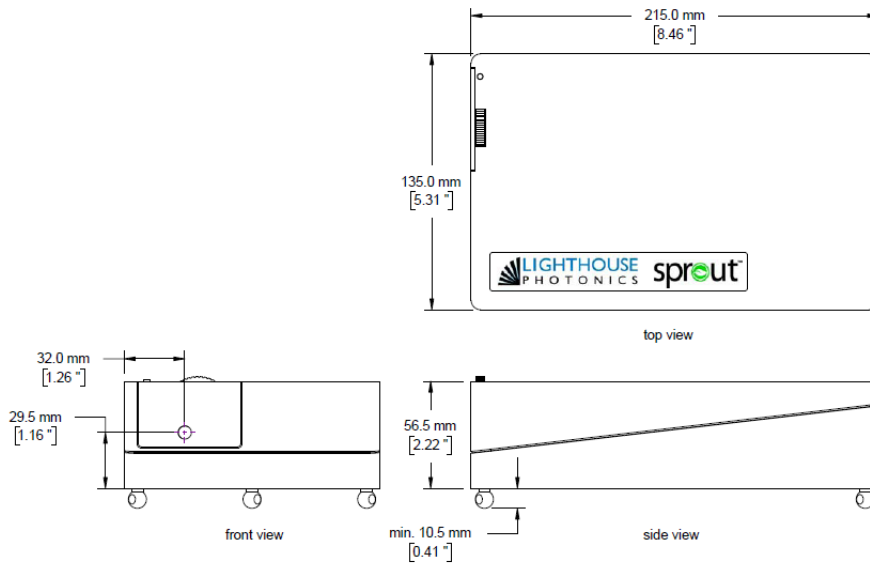
Power stability <0.2% rms over >24 hours for Sprout-8



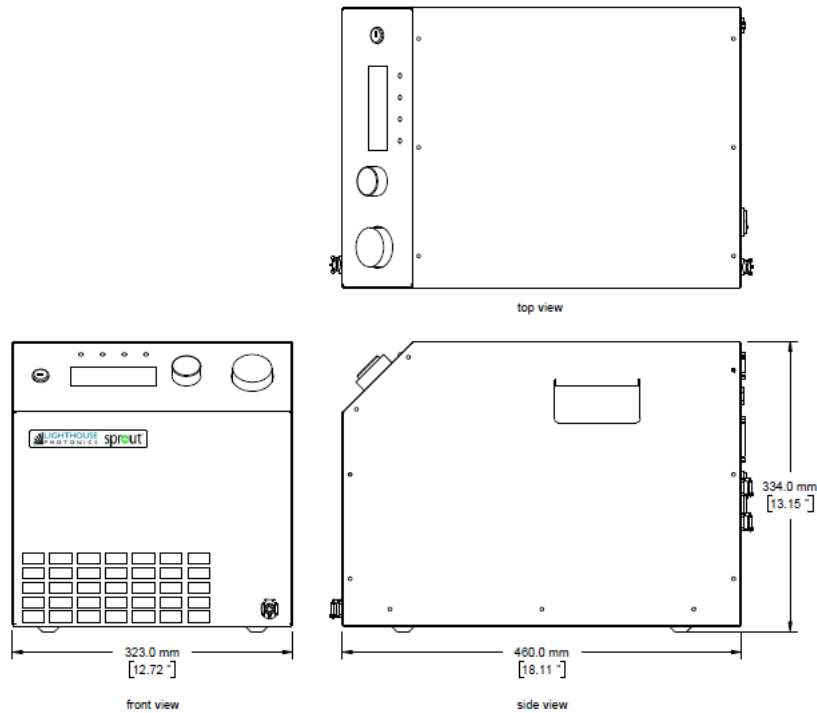
Optical noise 0.01% rms for NET™ version of Sprout-8



Laser Head Dimensions



Power Supply - Cooler Dimensions



For more information go to: www.lighthousephotonics.com

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