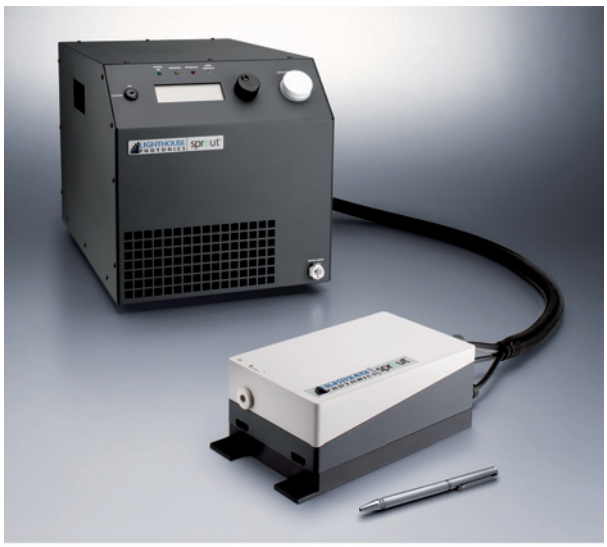
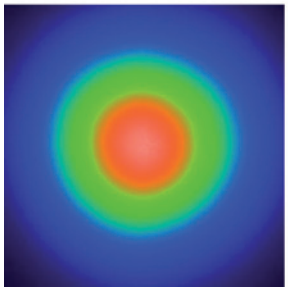
NETGATE·METRIC

A True Hero of Science

The High-Power DPSS Laser – Sprout™





Available in 5 W, 6 W, 8 W, 10 W, 12 W, 15 W and 18 W

The latest in laser technology at an outstanding price/performance ratio

Compact, hermetically sealed and alignment-free laser head

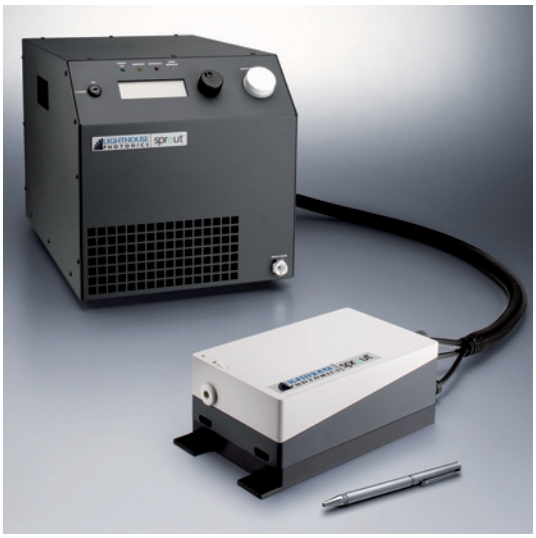
Extreme low noise <0.03% RMS with Noise Elimination Technology (NET™)

World-class long-term power stability < 0.5% over 24 hours

Special integrated chiller which also allows the cooling of Ti:sapphire lasers

High power CW 532 nm DPSS lasers with extremely low optical noise

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.

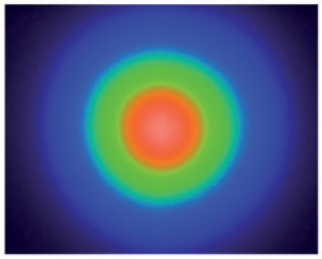


A number of key technologies enable Sprout™ to guarantee this performance. Seal™ technology keeps all dirt, dust and moisture out of the laser head to provide years of uninter-rupted usage without need for cleaning or maintenance. LockT™ technology locks all cavity optics permanently in perfect alignment. Finally, for those applications requiring near-zero optical noise, Noise Elimination Technology (NET™) is the solution.

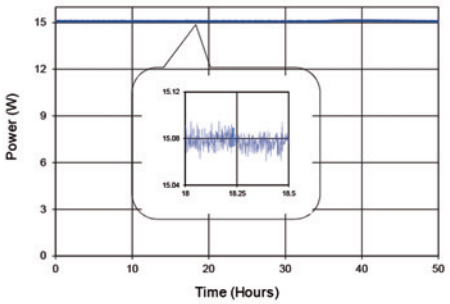
The laser head is a monolithic 3-dimensional design for ruggedness and compactness to minimize the space consumed in your lab or instrument. The fiber-coupled pump diode package, contained in the power supply, has an expected lifetime of more than 50,000 hours to minimize cost-of-ownership. The power 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 stabilization 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 applications. It combines superb performance and tremendous value for today's market.

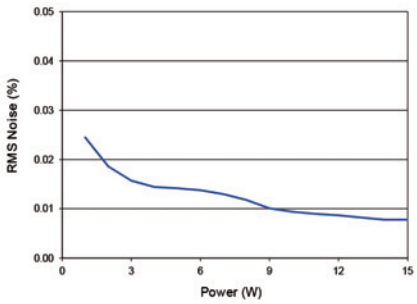
Patent Pending



Typical Far-field beam profile



Power stability <0.2% rms over >24 hours



Optical noice <0.02% rms for NET™ version

Applications

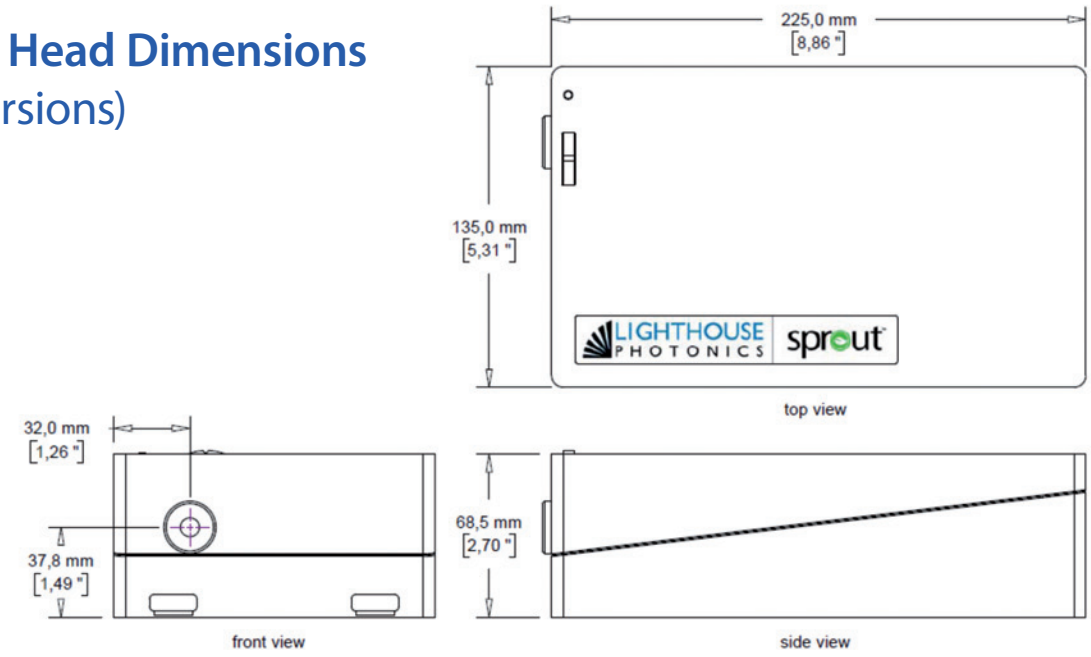
- Pumping Ti:Sapphire lasers: ultrafast and continuous-wave
- Pumping dye lasers
- Spectroscopy
- Flow cytometry
- Solar cell processing
- Film subtitling

Sprout combines superb performance and tremendous value for today's market

Features

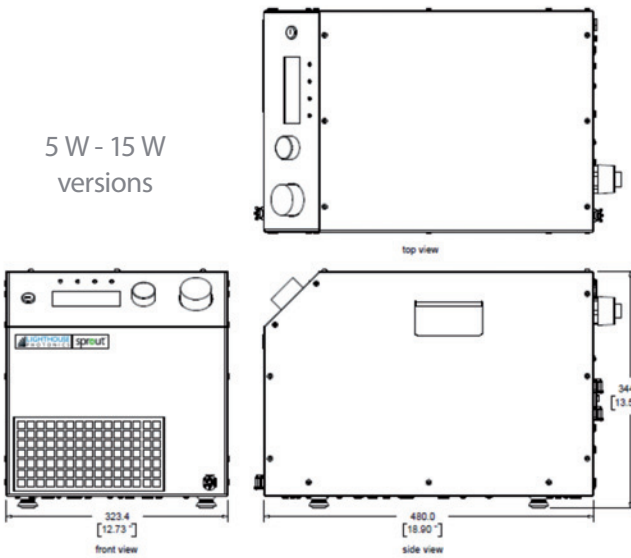
- Compact laser head with Seal™ enclosure for long lifetime
- LockT™ optics mounting for permanent laser alignment
- Long lifetime diode pack fiber-coupled to laser head
- Low noise <0.03% rms with Noise Elimination Technology
- Excellent long-term power stability <0.5% rms over 24 hours
- Closed-loop, purpose-built TEC chiller integrated in power supply
- 5, 6, 8, 10, 12, 15 and 18 W versions

Laser Head Dimensions
(all versions)

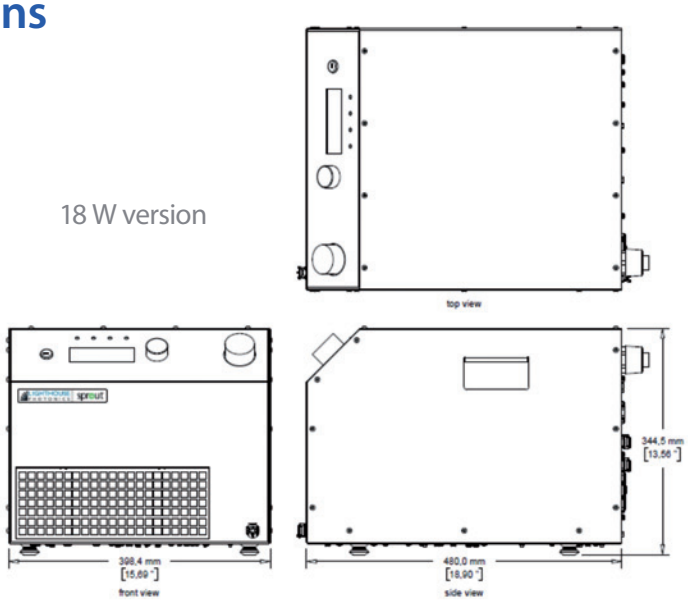


Power Supply - Cooler Dimensions

5 W - 15 W versions



18 W version



sprout™

Specifications

Laser Output Characteristics[1,8]

Average Output Power	5 W, 6 W, 8 W, 10 W, 12 W, 15 W, 18 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 (horizontal polarization option available)

Power Requirements

Operating Voltage	100-240 VAC, 50 Hz / 60 Hz
Power Consumption	5 W - 15 W versions: 600 W max, 350 W typical
	18 W version: 800 W max, 500 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 8.9 inches (69 x 135 x 225 mm)
Weight	approx. 7.0 lbs (3.2 kg)
Cable Length	10 ft (3 m)

Power Supply-Cooler - Physical

Dimensions (Height x Width x Length)	5 W - 15 W versions: 13.6 x 12.7 x 18.9 inches (345 x 323 x 480 mm)
	18 W version: 13.6 x 15.7 x 18.9 inches (345 x 398 x 480 mm)
Weight	5 W - 15 W versions: approx. 55 lbs (25 kg)
	18 W version: approx. 70 lbs (32 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. Lighthouse Photonics is continually improving the performance of its products. Specifications subject to change without notice.

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