

Millennia[®] Pro 15 W

Diode-Pumped Solid State CW Laser at 532 nm



The Millennia Pro 15 Advantage

- 15 W of stabilized CW output power at 532 nm
- Ultrastable EternAlign™ monitoring technology optics
- Proven ProLite series pump diodes
- Ultra low noise performance of <0.04% rms
- Power stability better than 1%
- Outstanding beam quality with $M^2 < 1.1$
- Pointing stability better than $2 \mu\text{rad}/^\circ\text{C}$
- Compact footprint for easy integration
- Two year (unlimited hours) warranty for scientific applications

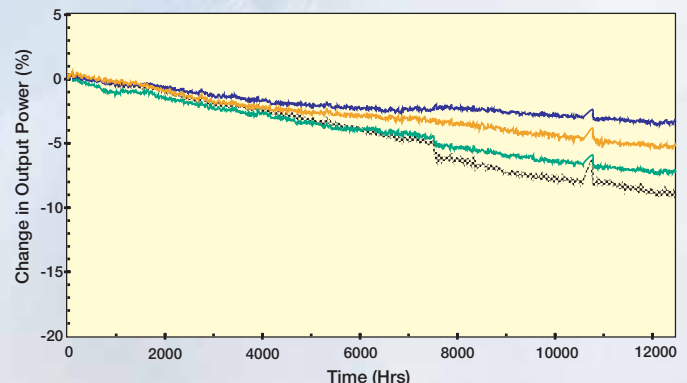
For more than ten years, the Spectra-Physics Millennia[®] product family has set the standard for high power visible CW diode-pumped solid state (DPSS) lasers, delivering unparalleled performance and reliability. As a result, the Millennia family has the largest installed base, with more than three thousand units in service today.

The new Spectra-Physics Millennia Pro 15 delivers an output power of 15 W at 532 nm. It enables an extended wavelength tuning range and more power when pumping Ti:Sapphire oscillators such as the Spectra-Physics Tsunami[®]. As a result, it is an ideal solution for scientific and OEM applications that require high power, excellent beam quality and ultra-low noise specifications.

The Millennia Pro 15 provides excellent output beam quality (TEM_{00} , $M^2 < 1.1$), as well as extremely low optical noise of less than 0.04% rms, and a power stability better than 1%. The Millennia Pro 15 uses Spectra-Physics' ProLite[®] pump diodes, which are the most reliable diode lasers available today. It has been designed as a higher power form, fit and function replacement for other Millennia Pro lasers, delivering the same outstanding reliability users know and expect from the Millennia series. The Millennia Pro 15 is CE certified and CDRH compliant.

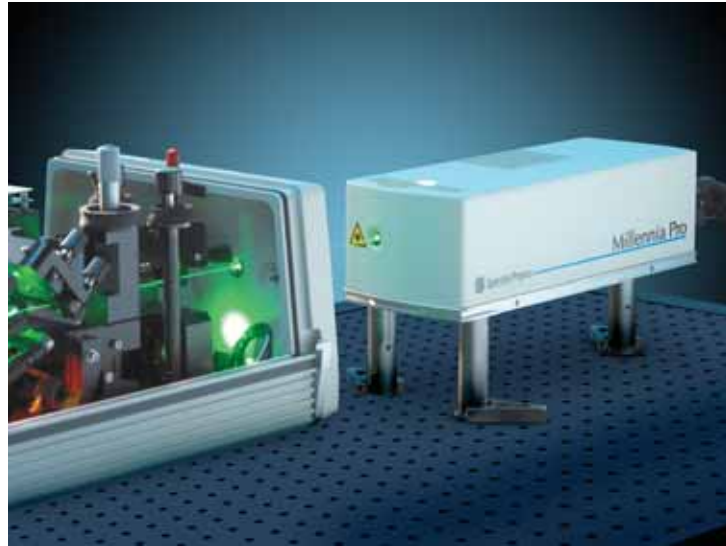
Backed with the knowledge and expertise of our worldwide local support, Millennia sets the standard for reliability, longevity and it is supported by the best warranty in the industry.

Life Test of ProLite Pump Diode at 50 A



Millennia Pro incorporate the ProLite series diodes that typically operate at 42 A to achieve 15 W of output power. The end of diode life is defined as a power decrease of 20% at constant current from start of life test.

Millennia Pro – Enabling Your Pump Applications



Millennia Pro Powers the Mai Tai



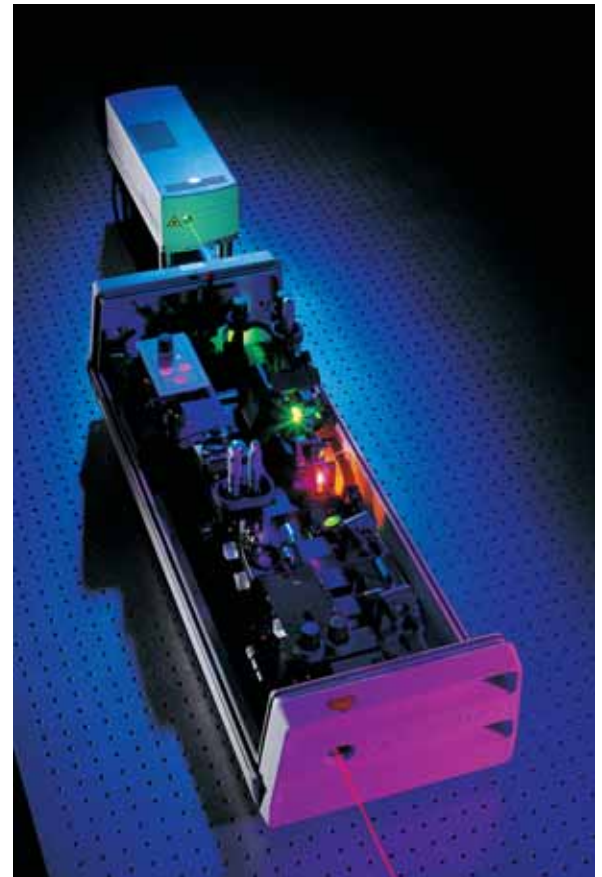
The Millennia Pro is the light engine that powers the Spectra-Physics Mai Tai® oscillator. This automated, easy-to-use femtosecond Ti:Sapphire laser is the leading source for multiphoton imaging applications.

Millennia Pro Pumps the Matisse



The Millennia Pro 15 can be used to pump ring Ti:Sapphire or dye CW lasers such as the Spectra-Physics Matisse™ series, which delivers high average power over a wide tuning and unprecedented spectral resolution. With a spectral linewidth of less than 50 kHz, Matisse applications include atomic cooling and high-resolution spectroscopy.

Millennia Pro Pumps the Tsunami



The Millennia Pro 15 is the ideal pump source for Ti:sapphire lasers, such as the Spectra-Physics Tsunami, enabling the widest wavelength tuning range and highest output powers. The Tsunami is used in time-resolved spectroscopy and other ultrafast applications.

Specifications

Output Characteristics^{1,2}

Power	>15 W
Wavelength	532 nm
Spatial Mode ³	TEM ₀₀
Beam Quality (M ²)	<1.1
Beam Diameter (1/e ²) ⁴	2.3 mm ±10%
Beam Divergence ⁴	<0.5 mrad
Polarization ⁵	>100:1 vertical
Power Stability ⁶	±1%
Beam Pointing Stability ⁷	≤2 μrad/°C
Noise ⁸	<0.04% rms
Boresight Tolerance	Nearfield ±0.25 mm Farfield <3 mrad

Power Requirements

Operating Voltage	90–130 VAC / 180–260 VAC
Power	1100 W max / 500 mW typical
Frequency	50 Hz / 60 Hz

Environmental Specifications

Operating Temperature	18–35°C (64–95°F)
Relative Humidity	8–85%, non-condensing

Cooling Requirements

Laser Head	Closed-loop chiller
Power Supply	Air-cooled

Laser Head Physical Characteristics

Size	4.1 x 5.3 x 14 in (10.4 x 13.5 x 35 cm)
Weight	22 lbs (10 kg)
Umbilical Length	13.1 ft (4 m)
Cable Length	8 ft (2.4 m)

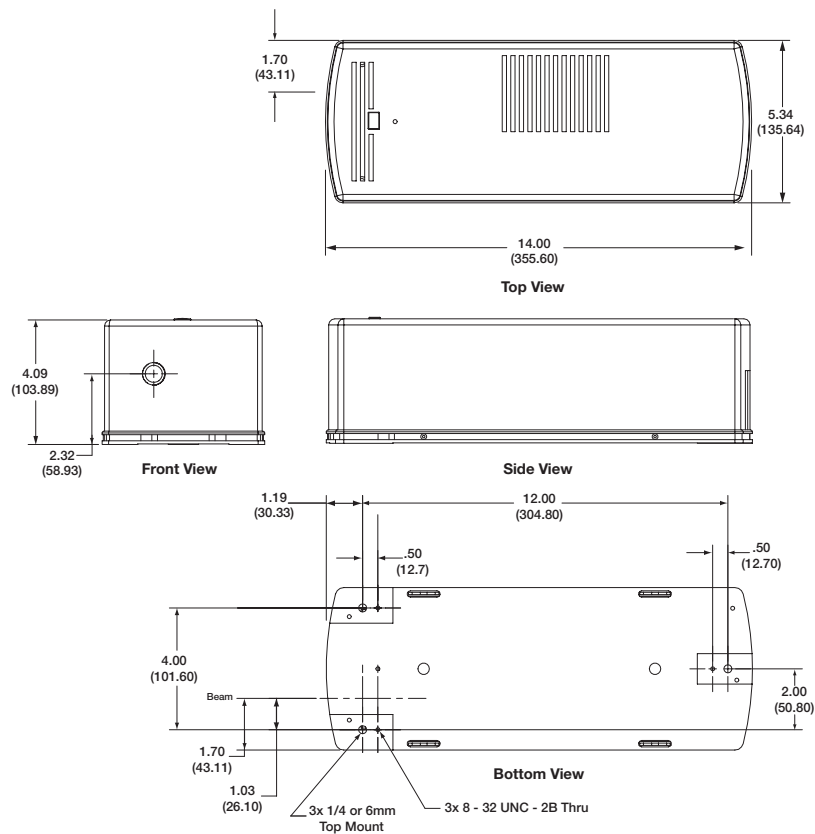
Power Supply Physical Characteristics

Size	6.9 x 19 x 17.9 in (17.5 x 48.3 x 45.5 cm)
Weight	58 lb (26.4 kg)

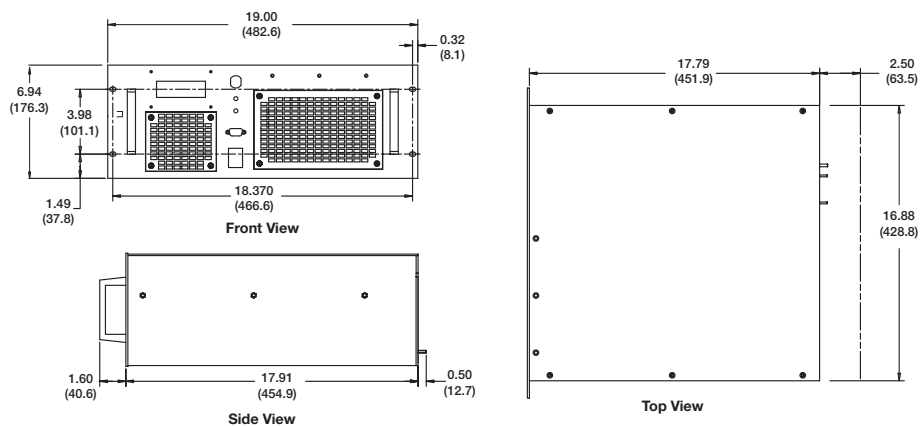
Notes

1. All performance characteristics guaranteed at specified output power
2. Due to our continuous product improvement program, specifications are subject to change without notice
3. Beam ellipticity <10%
4. Measured at exit port (at 1/e² point)
5. Vertical polarization standard; horizontal polarization option available
6. Measured over 2-hour period, after a 15 minute warm-up
7. Measured at farfield x and y position, after a 30 minute warm-up
8. Measured over a 10 Hz to 0.1 GHz bandwidth at the specified output power

Millennia Pro 15 W Laser Head



Power Supply



Dimensions in inches (cm)



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