

SWL-7500

SINGLE WAVELENGTH EXTERNAL CAVITY DIODE LASER

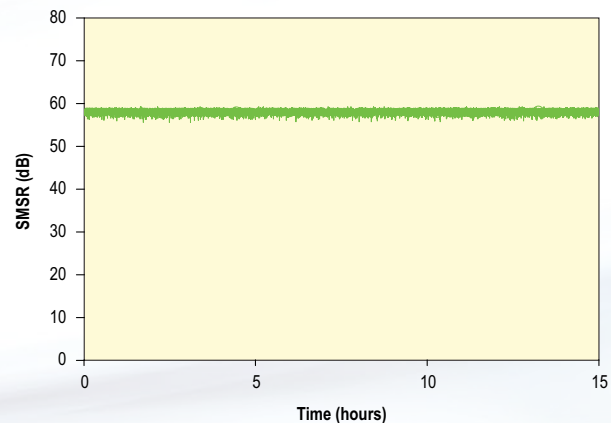
The SWL-7500 Advantage

- Cavity stabilized single longitudinal mode
- Exceptional wavelength and power stability
- All solid-state with a tiny footprint
- Up to 100 MHz diode current modulation
- Rugged, OEM-ready
- Patented technology

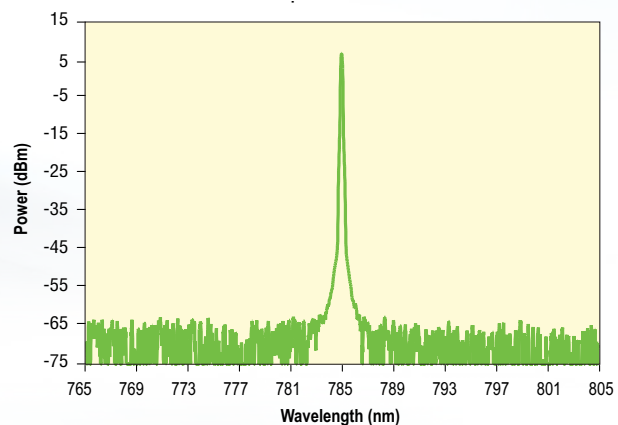
The SWL-7500 series lasers offer extremely narrow linewidth in an OEM-ready platform designed for stability, longevity and single longitudinal mode performance at a fixed wavelength. With a footprint that is smaller than a business card, the laser will fit in most instrument architectures with room to spare. We have carefully designed the SWL-7500 for long-term power stability and minimal frequency drift ideal for imaging, metrology, and spectroscopic measurements. An SMA port on the laser head allows direct to diode current modulation up to 100 MHz. Options include free-space, optically isolated, and fiber-coupled outputs. High coupling efficiency into the fiber guarantees there is power to spare with exceptional mode quality. Each fiber-coupled unit also features an integral optical isolator which provides >35 dB of isolation to guarantee continuous single-mode performance. The SWL-7500 laser is paired with a compact, low-noise controller with RS-232 and USB interfacing and an easy to use GUI.



SWL-7500 Long-term side mode suppression ratio measurement¹



Amplified Stimulated Emission (ASE) spectrum of the SWL-7513 laser¹



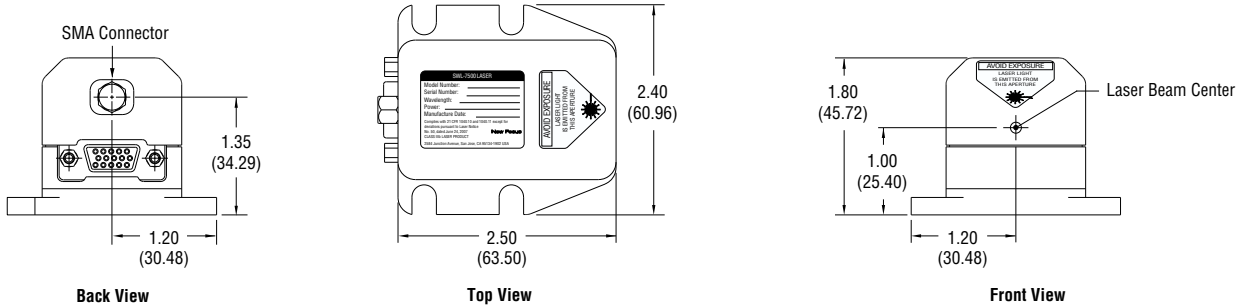
1. Typically measured performance; not a guaranteed or warranted specification.

Applications

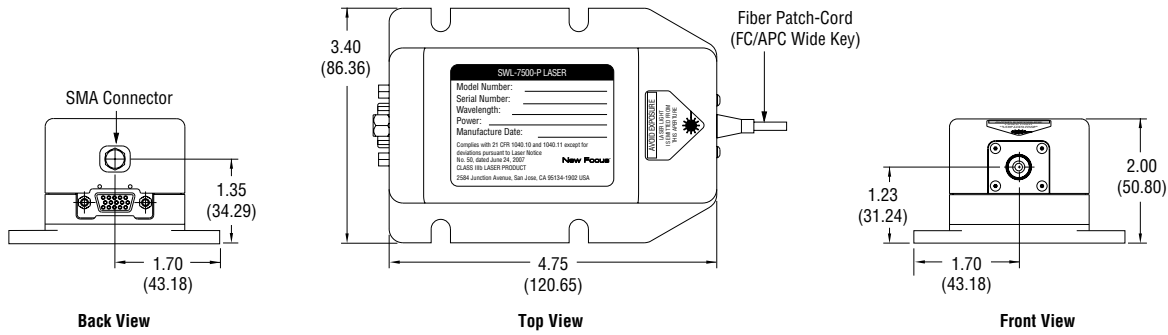
- Raman imaging and spectroscopy
- Interferometry
- Terahertz generation
- Data encryption
- LIDAR

SWL-7500

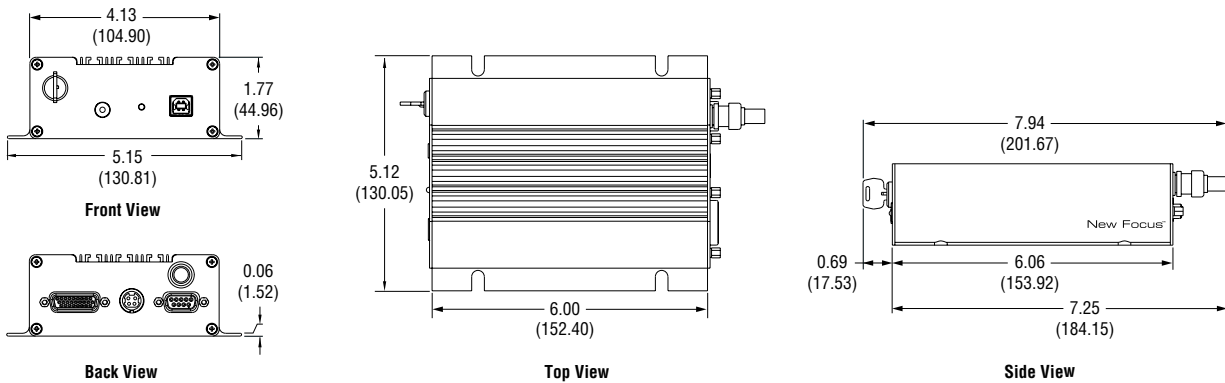
SWL-7500 Dimensions, Laser Head, Free-Space Without Isolator



SWL-7500 Dimensions, Laser Head, Fiber-Coupled



Controller Dimensions



Dimensions in inch (mm)

SWL-7500

Specifications¹

	Wavelength ²	Free-Space Output Power	Fiber-Coupled Output Power
SWL-7504	632.5–635 nm	8 mW @ 633 nm	4 mW @ 633 nm
SWL-7505	650–660 nm	20 mW @ 660 nm	5 mW @ 660 nm
SWL-7509	682–692 nm	8 mW @ 687 nm	3 mW @ 687 nm
SWL-7513	765–785 nm	70 mW @ 780 nm, 785 nm	35 mW @ 780 nm, 785 nm
SWL-7517	847–852 nm	50 mW @ 852 nm	15 mW @ 852 nm
SWL-7521	1060–1065 nm	70 mW @ 1064 nm	20 mW @ 1064 nm
SWL-7528	1535–1550 nm	30 mW @ 1550 nm	15 mW @ 1550 nm
SWL-7530	1600–1617 nm	30 mW @ 1600 nm	15 mW @ 1600 nm

Specifications¹

	Value
ASE (at maximum power)	>-65 dBc (typical)
Side Mode Suppression Ratio	<-50 dBc (typical)
Linewidth	<200 kHz (50 ms integration time)
Wavelength Stability	±1.5 pm (over 8 hour ΔT 10°C)
Power Stability	<2% (over 8 hour ΔT 10°C)
Current Modulation Bandwidth	50 kHz–100 MHz (directly to diode) ³
Longitudinal Mode	Single
Transverse Mode	TEM ₀₀
Beam Pointing Stability	<50 μ rad ($\pm 2^\circ$ C)
Beam Size, typical	1–2 mm
Beam Ellipticity, typical	1:1–2:1
Polarization ⁴	Vertical
Optical Output ⁵	Free-space, optically-isolated, fiber-coupled
User Interface	RS232, USB
Power Supply Requirement	100–240 VAC (50–60 Hz), power consumption <30 W
Environment Temperature, operating	10–40°C
Environment Temperature, storage	0–50°C
Environment Humidity	Non-condensing

1. Due to our continuous product improvement program, specifications are subject to change without notice.
2. Single non-tunable wavelength. Specify to 0.01 nm in vacuum. Contact us for all available wavelengths.
3. Current modulation directly to diode through laser head SMA port.
4. Free space (without isolator) output is vertical linearly polarized with respect to laser head base. Output with optical isolator is 45 degrees with respect to laser head base.
5. Optically-isolated option includes an 35 dB optical isolator with approximately 75% power transmission. Fiber-coupled option includes isolator and Panda-type PM fiber with FC/APC connector for laser output. Wide-type alignment key aligned with the slow axis of the PM fiber. This configuration is applicable to the input configuration for the Vamp™ tapered amplifier products. Dual stage isolation and other fiber types and connectors available upon request.



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