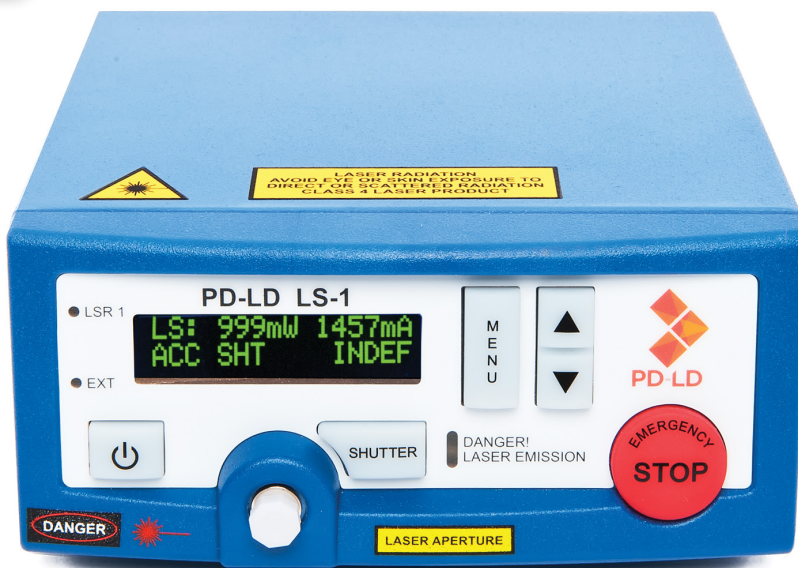




Wavelength Stabilized Instruments

LS Series

LS-1 VBG® STABILIZED SINGLE LASER SOURCE



Key Performance Features

- High Power Lasers, Up to 1 Watt
- Narrow Line Width, < 0.1 nm
- Excellent Wavelength Stability, +/- 0.005 nm
- Excellent Power Stability, +/- 0.5 %
- Built-in Optical Switch and Shutter
- Fully Programmable through USB Interface

Applications

- Raman Spectroscopy
- Bioinstrumentation
- Cytometry
- Metrology
- Confocal Microscopy
- Interferometry

Standard
Wavelengths
(nm)

647 nm

785 nm

830 nm

1064 nm

Optical Characteristics

Standard Wavelengths (nm)	647	785	830	1064	Multimode laser
Center λ tolerance [nm]	+/- 0.5				
Wavelength stability [nm]	+/- 0.005 over 8 hours				
Linewidth [nm]	Typ. 0.08; max. 0.10				
Linewidth [cm ⁻¹]	Typ. 1.3; max. 2.4				
ASE suppression [dB]	>40				

Power Characteristics

Output from fiber [mW]	>200	>600	>600	>800	Multimode laser
Adjustability % full power	10-100				
ACC Adjustment Resolution	1mA				
APC Adjustment Resolution	5mW				
Output power stability %	+/- 0.5 over 8 hours				
Noise RMS %	< 0.25				
Noise P - P %	< 1				
Digital modulation	10 kHz*				
Analog modulation	10 Hz**				
Power consumption [W]	30				
Warm up time [min]	1				

* Modulation is only available in ACC mode

** 10Hz in ACC mode only, APC mode is 0.5Hz

General and Environmental Characteristics

CDRH classification	Class IV
Operating temperature C	10-40
Storage temperature C	-10-60
Humidity noncondensing %	< 95
Interfaces	USB 2.0, BNC

Output Fiber Characteristics

Fiber type	105 μ m core; 0.22 NA (Other available)
Connector type	FC/PC standard (Other available)

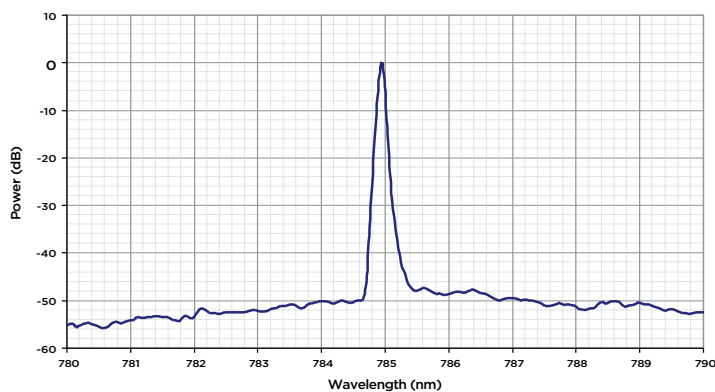
Electrical Characteristics

Line Voltage	100-240 VAC 50/60Hz
Analog Input	0-5V
Modulation Input	5V Logic Level
Shutter Input	5V Logic Level

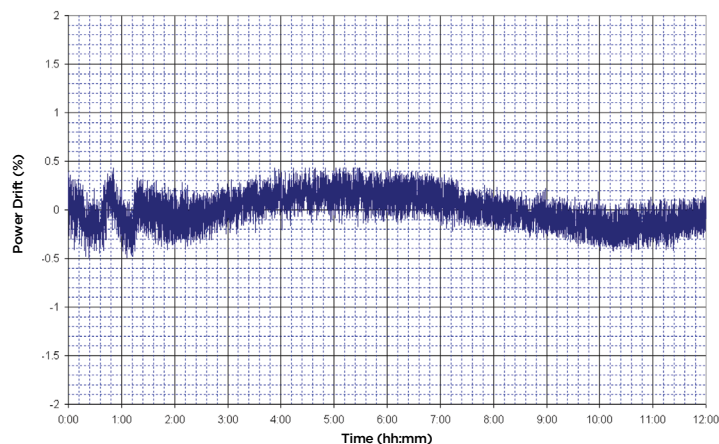
Optical Shutter Characteristics

Switching time [ms]	< 10
Crosstalk [dB]	< -55

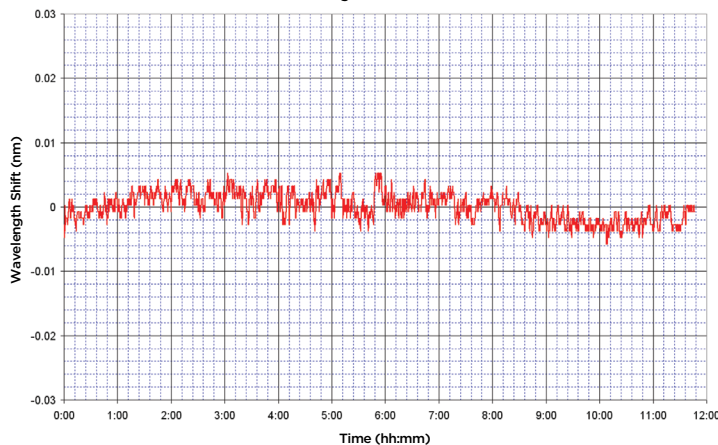
LS-1 Spectrum



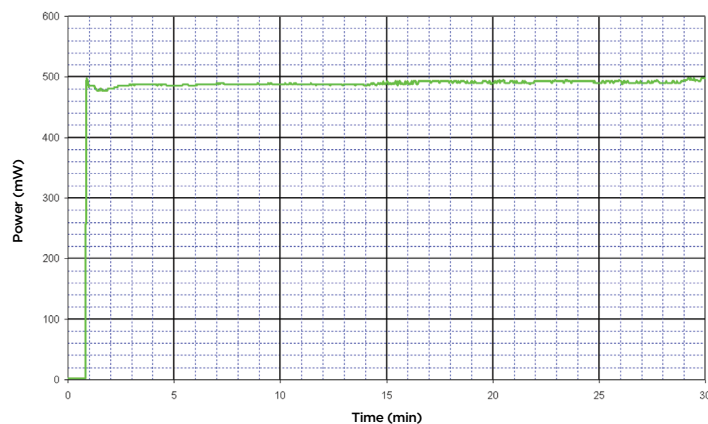
Power Stability Over 12 Hours



Wavelength Drift Over 12 Hours



Power Stabilization from Cold Start



Specifications Subject to Change



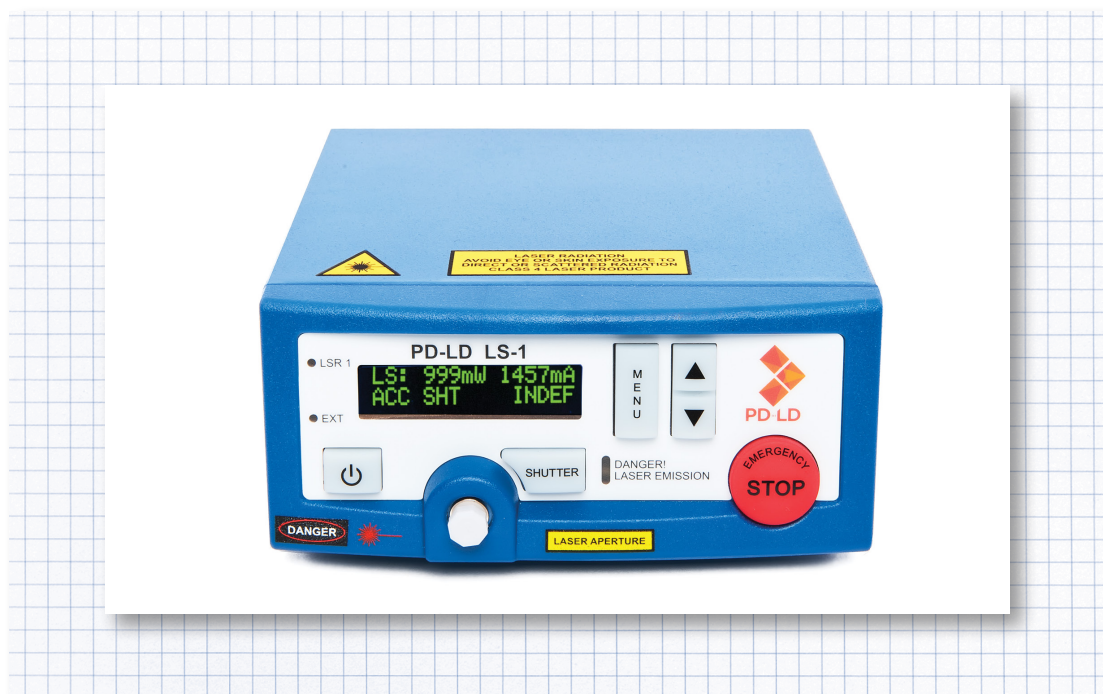
Wavelength Stabilized Instruments

LS Series

LS-1 VBG®-STABILIZED SINGLE LASER SOURCE

Weight = ~1200 grams

Dimensions (mm) = 84 (h) x 174 (w) x 190 (d) Display size (mm) = 58 (w) x 12 (h)



LS-1 VBG®-Stabilized Single Laser Source

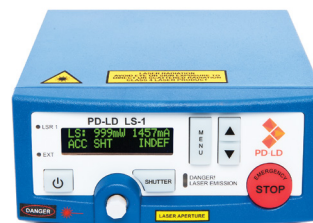
PD-LD's LS-1 VBG®-stabilized single-laser source is based on a fiber-coupled high-power laser diode that is spectrally narrowed and wavelength-stabilized by use of the VBG® technology. Standard wavelengths—647, 785, 830 and 1064 nm—are available and custom wavelengths may be produced upon request.

The product contains a unique high-power fiber-optic switch with internal beam dump, which permits rapid on-and-off switching of the laser source, while ensuring that no laser emission emerges from the output port in between the measurements.

The source features compact, rugged construction, a user-centric design, and ease of integration with existing laboratory equipment. It is easy to operate either from the front panel or remotely via the USB interface. External modulation, shutter control and analog power control are available.

LS Series

LS-1 VBG®-STABILIZED SINGLE LASER SOURCE



Ordering Information

LS-N- $\lambda_1\lambda_1$ -F CC

LS = Laser Source

N = Number of Lasers
1 = 1 Laser

$\lambda_1\lambda_1$ = Laser 1 Wavelength
64 = 647 nm
78 = 785 nm
83 = 830 nm
10 = 1064 nm

CC = Connector Type

FC = FC/PC

FA = FC/APC

SM = SMA

F = Fiber Size

1 = 105 μ m core, 0.22 NA

