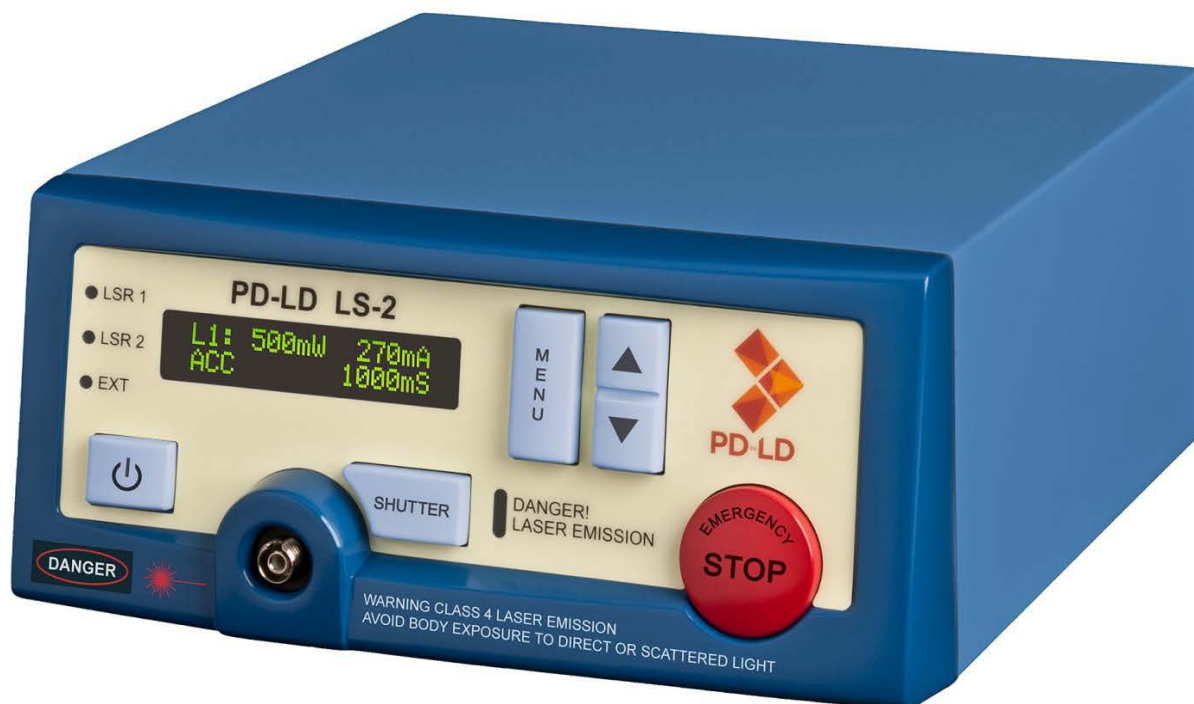


LS-2 VBG®-Stabilized Dual Laser Source

2012 PRISM AWARD WINNER !!!

SCIENTIFIC LASERS



Key Performance features

- High power lasers, up to 1 watt
- Narrow line width, < 0.1 nm
- SERDS option available
- Excellent wavelength stability, +/- 0.005 nm
- Excellent power stability, +/- 0.5 %
- Easy laser modulation
- built-in optical switch and shutter
- Front panel display

Applications:

- Raman spectroscopy
- Bioinstrumentation
- Cytometry
- Other uses where high power, narrow bandwidth, and stable power output are required
- Fully programmable through USB interface

**Standard
Wavelengths (nm)**

647

785

830

1064

Specifications Subject to Change

11/23/2011

LS-2 VBG®-Stabilized Dual Laser Source

Optical Characteristics					Comments
Standard Wavelengths (nm)	647	785	830	1064	Multimode lasers
SERDS pairs available	yes	yes	yes		
SERDS pair [$\lambda_1 - \lambda_2$] [nm]	0.5 – 1.0				Custom adjustable
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					Comments
Output from fiber [mw]	>500	>600	>600	>800	Multimode lasers
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* (1)				
Analog modulation	10 Hz* (2)				
Power consumption [W]	30				
Warm up time [min]	1				

(1) *1. Modulation is only available in ACC mode

(2) *2. 10Hz in ACC mode only, APC mode is 0.5Hz

Specifications Subject to Change

11/23/2011

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Product Information

PD-LD's VBG®-stabilized dual-laser source is based on fiber-coupled high-power laser diodes that are spectrally narrowed and wavelength-stabilized by use of VBG® technology. Combinations of any two lasers with standard wavelengths of 647, 785, 830 and 1064 nm are available, and other wavelengths may be produced upon request.

PD-LD also offers a unique SERDS module option, comprised of 2 laser sources with closely spaced wavelengths, ranging from 0.1 to about 1 nm apart. These modules are intended for Shifted Excitation Raman Difference Spectroscopy (SERDS), a method which greatly reduces the fluorescence interference in Raman spectroscopy measurements.

The LS-2 module contains a unique high-power fiber-optic switch with internal beam dump, which permits rapid switching between laser sources, while ensuring that no laser emission emerges from the output port in between the measurements.

The source 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.

Ordering Information (Part Numeration)

LS	-	N	S	-	$\lambda_1\lambda_1$	$\lambda_2\lambda_2$	-	F	CC
Laser Source		Number of Lasers	Separation of Lasers		Laser 1 Wavelength	Laser 2 Wavelength if applicable		Fiber Size	Connector Type
		1=1 Laser	S= SERDS Spacing		64=647nm	53=532nm		1=105 um core, 0.22N A	FC=FC/PC
		2=2 Lasers	A= Any Two Lasers		78=785nm	78=785nm			FA=FC/APC
					83=830nm	83=830nm			SM=SMA
					10=1064nm	10=1064nm			

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General and Environmental Characteristics

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

Mechanical Characteristics

Mechanical Characteristics		Comments
Dimensions [mm]	84 x 174 x 190	[height x width x depth]
Weight [g]	~1500	
Display size [mm]	58 x 12	[width x height]

Output Fiber Characteristics

Output Fiber Characteristics		Comments
Fiber type	105 um core; 0.22 NA	Other available
Connector type	FC/PC standard	Other available

Electrical Characteristics

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

Optical Shutter Characteristics

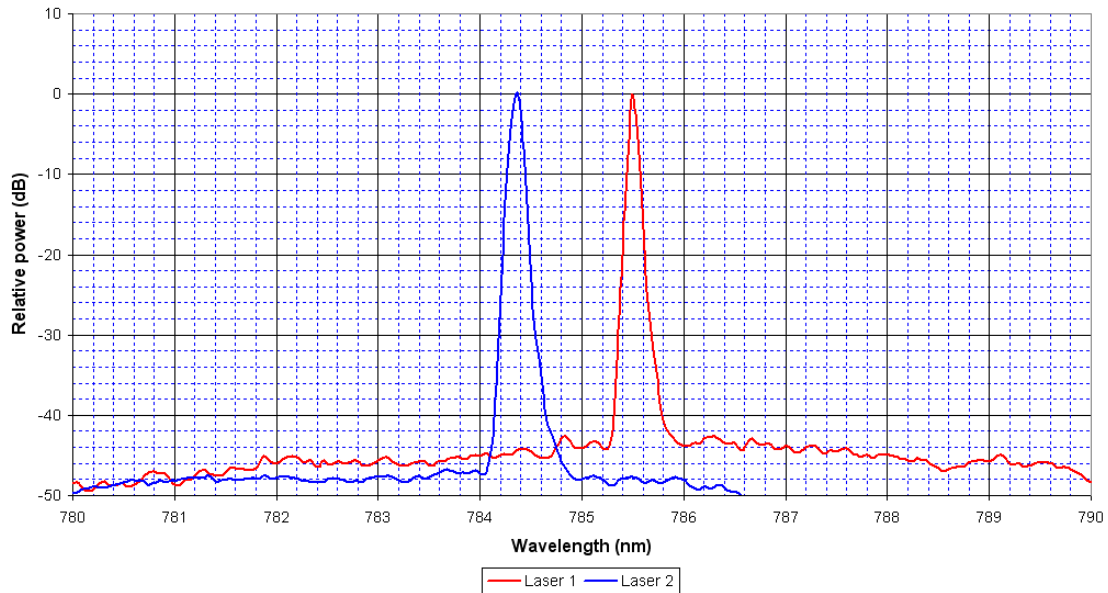
Optical Shutter Characteristics		Comments
Switching time [ms]	< 10	
Crosstalk [dB]	< - 55	

Specifications Subject to Change

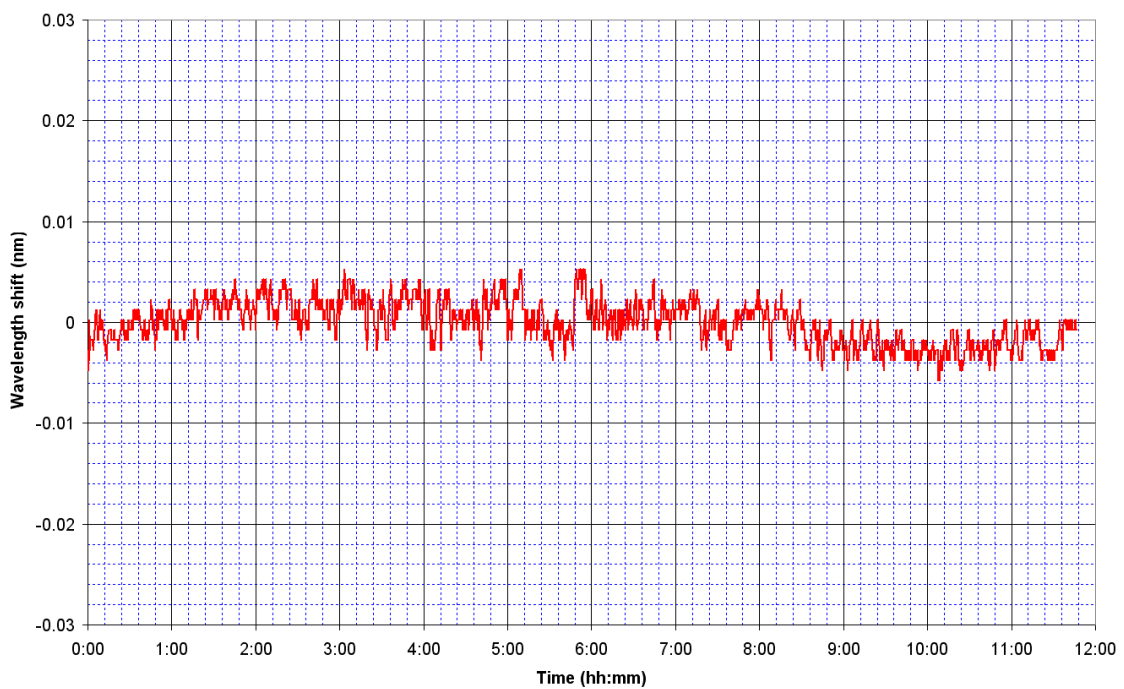
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LS-2 VBG[®]-Stabilized Dual Laser Source

Example of a SERDS laser pair: center wavelength separation 1 nm



Wavelength drift over 12 hours

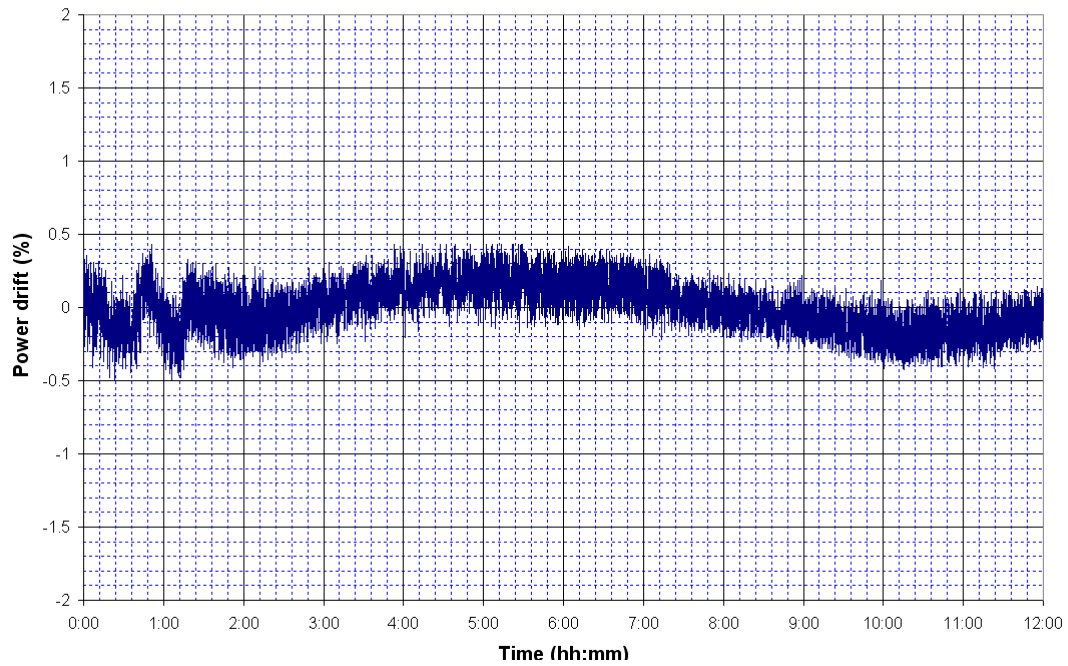


Specifications Subject to Change

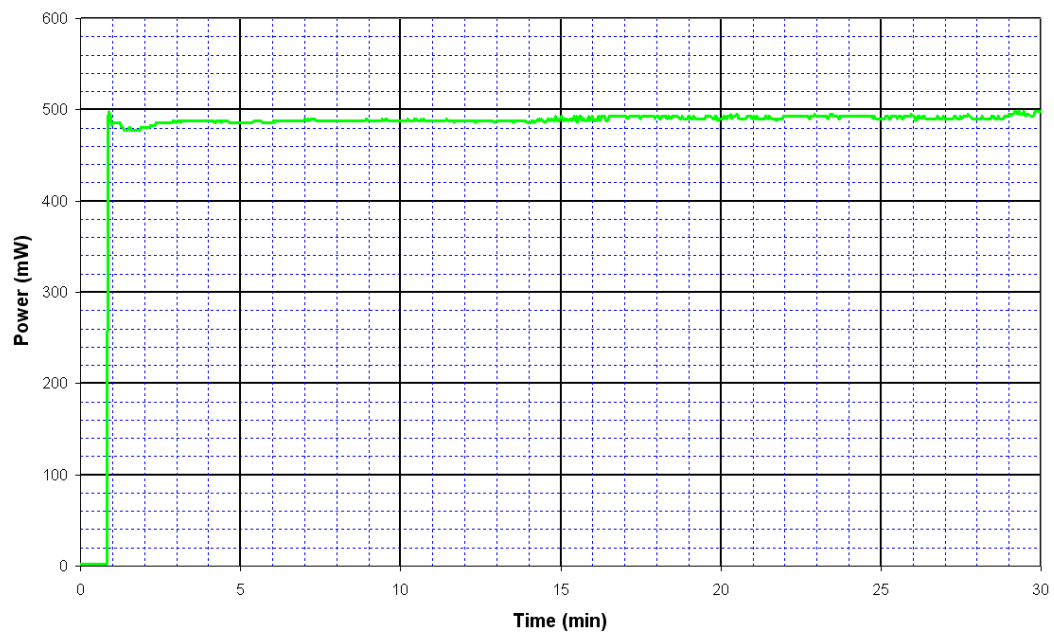
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LS-2 VBG[®]-Stabilized Dual Laser Source

Power stability over 12 hours



Power stabilization from cold start



Specifications Subject to Change

11/23/2011

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