

RO-USB Series Collimated Single Frequency Laser Modules



Single Frequency
Collimated Output Beam

Ondax's RO Series Single Frequency Collimated Laser Module integrates our SureLock™ wavelength-stabilized lasers with TEC cooling and precision current control circuitry into a compact, cylindrical package with USB interface. Designed for easy mounting and integration, this rugged self-contained module is ideal for incorporation into precision instrumentation or for laboratory applications. The built-in temperature controller maintains the laser diode temperature within $\pm 0.01^\circ\text{C}$, resulting in excellent power stability that varies less than 1% over the long term.

The RO Module is available in wavelengths from 633nm to 826nm to suit any application.

Specifications:

Parameter	Symbol/Unit												
Center Wavelength ¹	L_p , nm	633	638	640	643	658	685	690	780.25	785	808	826	
Center Wavelength Tolerance	L_p , nm	± 0.25	± 1	± 1	± 1	± 1	± 1	± 1	± 0.2	± 1	± 1	± 1	
Output Power	P_o , mW	40 70	30 120*	30	120*	30	40	40	75	75 100	110	150	
Beam Size	mm	0.6 x 0.9	2.2 x 1 0.6 x 0.9	2.2 x 1	0.6 x 0.9	0.7 x 1.1	0.9 x 1.4	0.9 x 1.5	0.8 x 1.5	0.9 x 1.7	0.9 x 1.7	0.9 x 1.7	
Linewidth, typical (MHz)	$\Delta\lambda$	150	300 20pm	300	20pm	300	300	100	50	50	50	50	

* 120mW 638 and 643 lasers are single mode but narrowband, not single frequency.

Operating Specifications

Optical	Min	Typ	Max	Unit
Spatial Mode	Single Mode			
Polarization	100:1			
Beam Divergence	1		3	mrad
Pointing Stability			± 25	μrad
Noise (RMS, 0-20 MHz)			0.25	%
Power Stability (1 hr)			0.10	%
Electrical	Min	Typ	Max	Unit
Operating Current			3	A
Operating Voltage			3.3	VDC
Modulation Input (TTL)	0			VDC
Modulation Speed			3	kHz
Environmental	Min	Typ	Max	Unit
Storage Temperature ³	0			$^\circ\text{C}$
Operating Temperature ³	10	25	40	$^\circ\text{C}$
Operation Humidity	Non-condensing			
Dimensions (D x L)			25.4 x 76.2	mm

Features:

- Single frequency performance
- Precision cooling and current control via USB interface
- Wavelength stability 0.015nm/ $^\circ\text{C}$
- Noise <0.3% RMS
- Compact, cylindrical package
- Collimated output beam
- Power supply
- Custom wavelengths available
- NoiseBlock™ narrow-band ASE suppression filters and beamsplitters available in matching wavelengths to further reduce linewidth and ASE noise

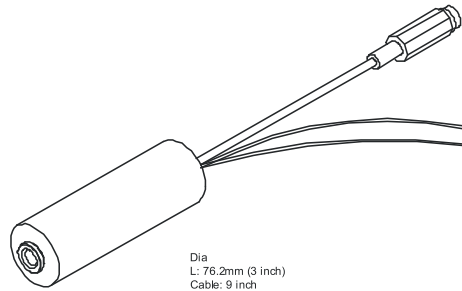
Applications:

- HeNe Replacement
- Raman Spectroscopy
- Metrology
- Bio-instrumentation
- Graphic Arts
- Sensing

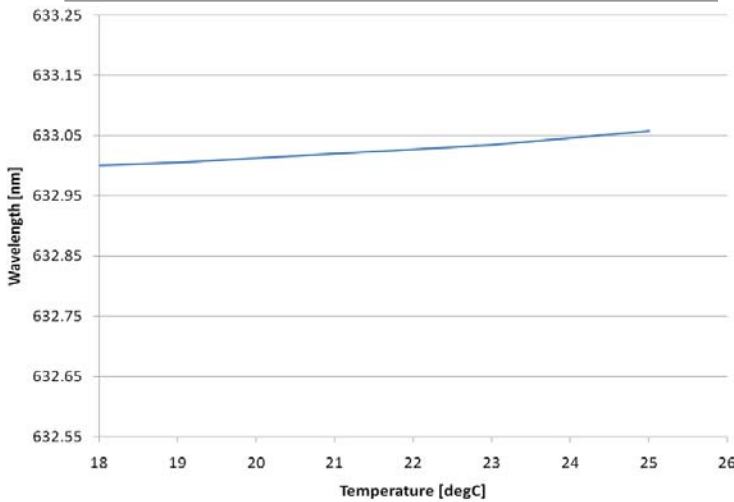
SureLock™

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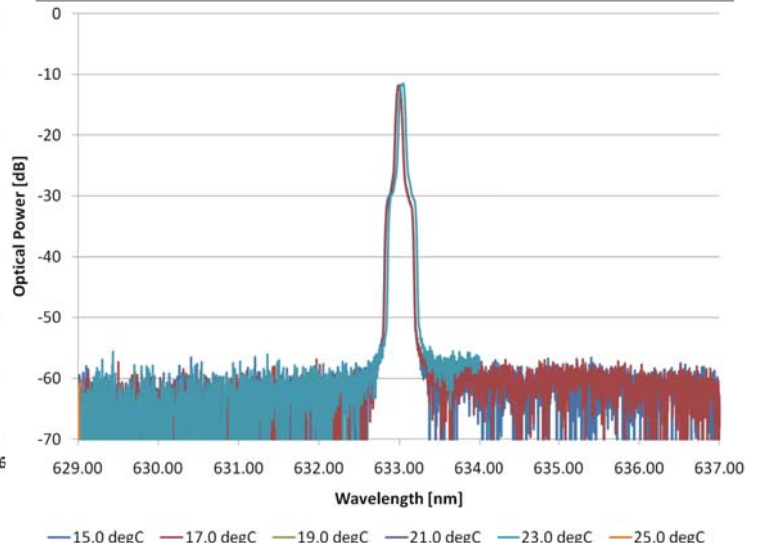
Laser



Typical Wavelength Stability

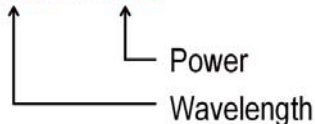


Optical Spectrum



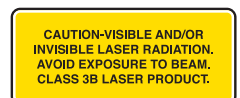
Model Numbers

RO-USB- $\lambda\lambda\lambda$ -PLR-XX



Electrical Connections

Power (+ Red, - Black), TTL (White), GND (Black)



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For more information about Ondax products and the name of a local representative or distributor, visit www.ondax.com, email sales@ondax.com, or call (626) 357-9600. Specifications subject to change without notice. Each purchased laser is provided with test data and manual. Please refer to this data before using the laser.

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