

# 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	633	638	640	643	658	685	690	780.25	785	808	826
Center Wavelength <sup>1</sup>	$L_p$ /nm	633	638	640	643	658	685	690	780.25	785	808	826
Center Wavelength Tolerance	$L_p$ /nm	$\pm 0.25$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 0.2$	$\pm 1$	$\pm 1$	$\pm 1$
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			$\pm 25$	$\mu\text{rad}$
Noise (RMS, 0-20 MHz)	0.25		0.5	%
Power Stability (1 hr)	0.10		0.5	%
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 <sup>3</sup>	0			$^\circ\text{C}$
Operating Temperature <sup>3</sup>	10	25	40	$^\circ\text{C}$
Operation Humidity	Non-condensing			
Dimensions (D x L)	25.4 x 76.2			mm

## Features:

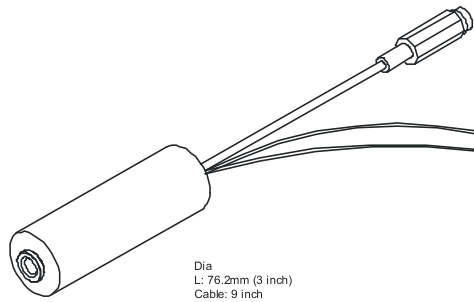
- Single frequency performance
- Precision cooling and current control via USB interface
- Wavelength stability 0.015nm/ $^\circ\text{C}$
- Noise <0.3% RMS
- Compact, cylindrical package
- Collimated output beam
- Power supply
- Custom wavelengths available
- NoiseBlock™ narrow-band ASE suppression filters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

## Applications:

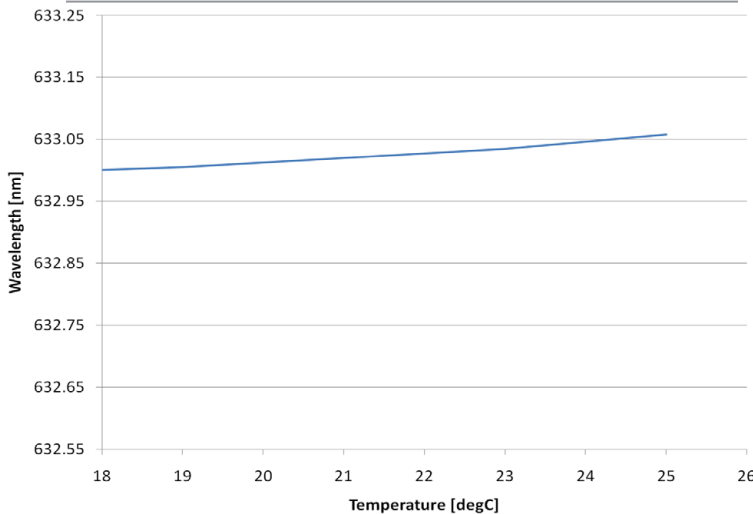
- HeNe Replacement
- Raman Spectroscopy
- Metrology
- Bio-instrumentation
- Graphic Arts
- Sensing

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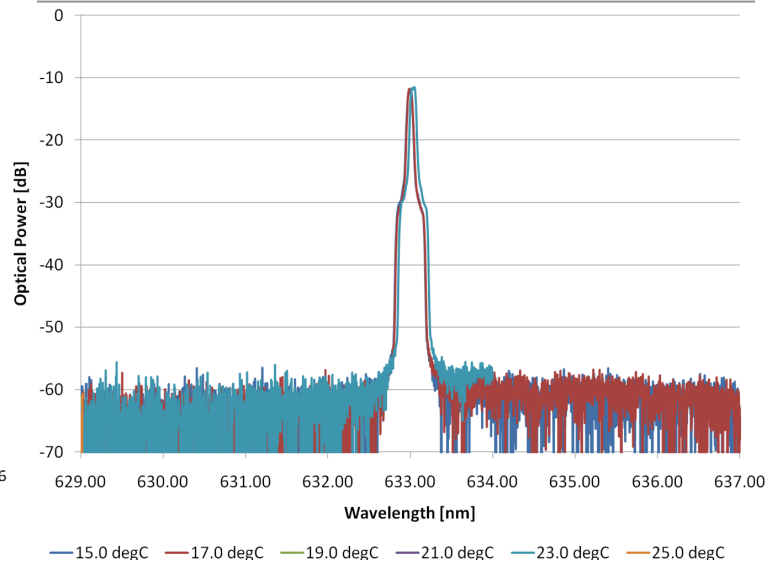
## Laser



### Typical Wavelength Stability

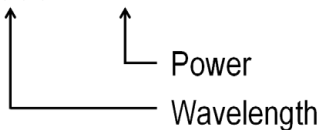


### Optical Spectrum



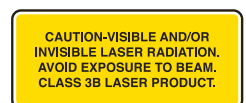
### Model Numbers

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](http://www.ondax.com), email [sales@ondax.com](mailto: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.