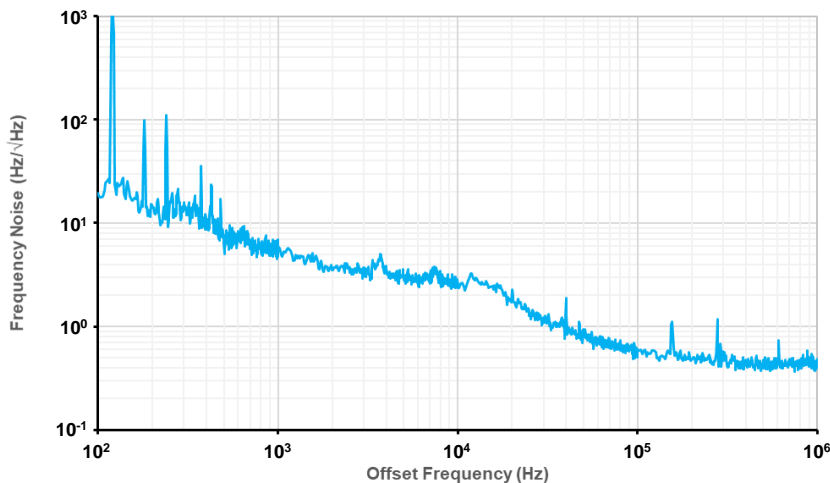


HI-Q™ Laser offers ultra-narrow Lorentzian linewidth and low phase/frequency noise in a compact form factor.



This HI-Q™ laser houses a proprietary driver/controller and the OEwaves laser source which is based on a high quality factor (Q) Whispering Gallery Mode (WGM) micro-resonator. The laser is available at a variety of C band wavelengths (1530 – 1565 nm).

The unique technology of the OEwaves HI-Q™ laser leverages the self-injection locking capability of a suitable commercially available laser diode via resonant optical feedback from a high-Q WGM micro-resonator. Its monolithically integrated approach along with micro-scale mass and volume make the laser virtually insensitive to environmental vibrations.



## FEATURES

- Ultra-Narrow Instantaneous Laser Linewidth
- Ultra-Low Phase/Frequency Noise
- 1530 – 1565 nm
- Wide Thermal Tuning Range
- Low Vibration Sensitivity
- Low Residual Amplitude Modulation
- Wavelength Stability
- Compact Package
- Integrated Driver/Controller
- USB or RS-232 Control Interface

## APPLICATIONS

- Interferometric Optical Sensing
- LIDAR
- B-OTDR Temperature and Strain
- Gas Sensing
- Optical Metrology and Spectroscopy
- Acoustic Sensing
- Oil and Gas Exploration
- Coherent Communication
- Test and Measurement

# HI-Q™ 1.5 MICRON LASER SERIES

## SPECIFICATIONS

	OE4023 Tunable	OE4026 Ultra-Narrow	OE4028 Hertz	OE4030 Sub-Hertz
Spectral Linewidth (Lorentzian, instantaneous)	≤ 300 Hz	≤ 80 Hz	≤ 3 Hz	< 1 Hz
Frequency Noise				
▪ 1 kHz Offset	100 Hz / √Hz	50 Hz / √Hz	30 Hz / √Hz	10 Hz / √Hz
▪ 10 kHz Offset	30 Hz / √Hz	20 Hz / √Hz	10 Hz / √Hz	5 Hz / √Hz
▪ 1 MHz Offset	10 Hz / √Hz	5 Hz / √Hz	1 Hz / √Hz	<1 Hz / √Hz
Thermal Tuning Range	50 GHz	10 GHz	10 GHz	10 GHz
Thermal Tuning Rate	200 MHz / s	100 MHz / s	100 MHz / s	100 MHz / s
Extended Tuning Range With Mode Hops (Option)	0.8 nm 1.6 nm	N/A N/A	N/A N/A	N/A N/A
Extended Power (Option)	18 – 22 mW	18 – 22 mW	N/A	N/A
Wavelength	1530 – 1565 nm (Single Frequency, CW; Vacuum)			
Output Power	10 mW			
Short Term Stability	10 <sup>-10</sup> @ 1 s (At Constant Case Temperature)			
Frequency Stability	100 MHz / day			
Signal to Noise Ratio	55 – 60 dB			
Side-Mode Suppression Ratio	50 dB			
Relative Intensity Noise	- 150 dBc / Hz @ 10 MHz			
Operating Temperature	+20°C to +40°C			
Storage Temperature	-10°C to +50°C			
Monitor / Control Interface	USB (Standard) or RS-232 (Option)			
Package	2.3" x 6" x 1" (Including Driver Electronics)			
Fiber Pigtail	PM-FC / APC (PANDA Fiber, Slow Axis)			
Polarization Extinction Ratio	20 dB			
Frequency Modulation (Option)	DC-10 kHz or DC-100 kHz (5 – 15 MHz/V; > ±200 MHz Range)			

**Laser Safety:** This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR) 1040 and is classified as a FDA/CDRH Class 3b laser product.

**Note:** These specifications are subject to change without notice. This product line is covered by one or more of the following U.S. patents: 6,871,025; 6,879,752; 7,248,763; 7,991,025; 7,869,472. Other patents pending.  
ECCN: EAR99



RIDE THE WAVE OF INNOVATION

+1.626.351.4200  
sales@oewaves.com  
www.oewaves.com

465 N. Halstead Street, Suite 140 Pasadena, CA 91107

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