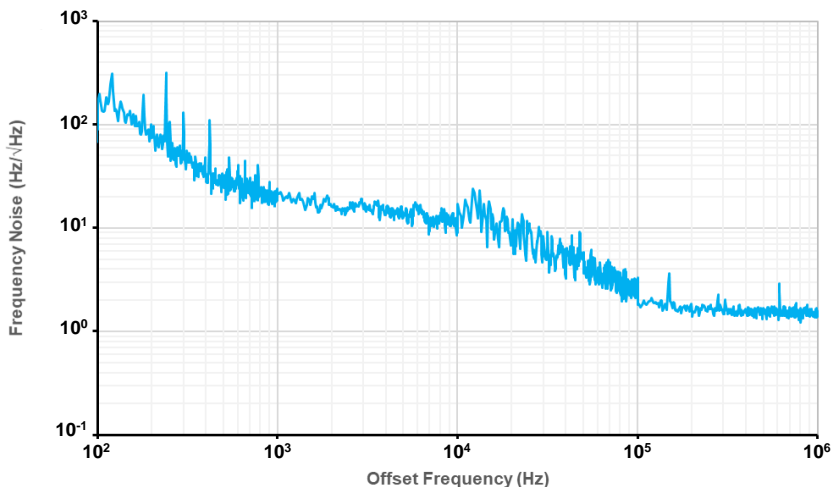


HI-Q[®] Laser offers ultra-narrow Lorentzian linewidth of **less than 10Hz** and low phase/frequency noise in a compact form factor.



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 1064 nm. Other nearby wavelengths available by custom order.

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
- 1064 nm (Nearby wavelengths by custom order)
- 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 MICRON LASER SPECIFICATIONS

ULTRA-NARROW

OE4126

Wavelength	1064 nm Nearby wavelengths by custom order	Single Frequency, CW; Vacuum
Spectral Linewidth	< 10 Hz	Lorentzian; Instantaneous
Output Power	5 – 10 mW	
Frequency Noise	35 Hz / $\sqrt{\text{Hz}}$ 12 Hz / $\sqrt{\text{Hz}}$ 5 Hz / $\sqrt{\text{Hz}}$	1 kHz Offset 10 kHz Offset 1 MHz Offset
Short Term Stability	$2 \times 10^{-9}@ 1 \text{ s}$	At Constant Case Temperature
Thermal Tuning Range	10 GHz	Mode Hop Free
Thermal Tuning Rate	200 MHz / s	Mode Hop Free
Side-Mode Suppression Ratio	50 dB	
Relative Intensity Noise	- 140 dBc / Hz	At 10 MHz
Vibration / Acceleration Sensitivity	$5 \times 10^{-11} / \text{g}$	
Operating Temperature	+20°C to +40°C	Case Temperature
Monitor / Control Interface	USB	
Package	2.3" x 6" x 1"	Including Driver Electronics
Fiber Pigtail	PM-FC/APC	PANDA fiber
Polarization Extinction Ratio	20 dB	

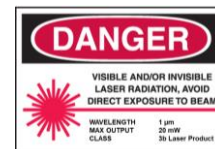
OPTIONS

Frequency Modulation	DC – 100 kHz 10-25 MHz/V $\pm 200 - 500 \text{ MHz}$	Bandwidth Tuning Sensitivity (typical) Tuning Range (typical)
Monitor / Control Interface	RS-232	USB not available

Tech Notes: Instantaneous Linewidth* is computed from the noise floor of the power spectral density of frequency noise (PSDFN).

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



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