

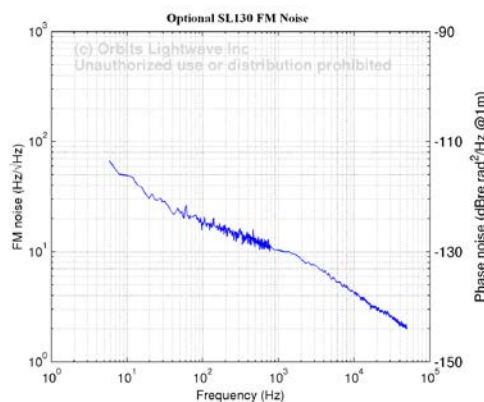


High Power SlowLight™ Lasers

The Lowest Noise Laser on Earth PERIOD!

The **Eternal™ SlowLight™** lasers from Orbits Lightwave represent the state of the art in high-power laser oscillators. The breakthrough “virtual ring” laser technology enables traveling-wave and slow light oscillation in a compact, linear cavity. The traveling wave oscillator results in high power (>350mw), high signal to noise (>85dB) and record side-mode suppression (>75dB) ratios. We also offer amplified lasers power with up to 2.5 W output. This is while maintaining best in class <10Hz linewidth, >75dBc SMSR and >75dB SNR (>85dB for the pure oscillators

Remarkably this performance is available in a reliable and robust field-ready packaging. The **StableLase™** technology greatly reduces the susceptibility to shock and vibration. In addition, passive temperature compensation in conjunction with the slow light technology offers the highest frequency stability in the industry. This enables the **Eternal™ SlowLight™** fiber laser to operate at unprecedented levels of stability and low noise performance for demanding research, industrial or military applications.



Features:

- Compact all-fiber “virtual-Ring” **SlowLight™** architecture
- Up to 350 mw pure oscillator
 - 0.25-2.5W optical amplifier
 - <10 Hz Lorentzian linewidth
 - <200 Hz linewidth over 1ms (optional)
 - <1MHz/°C frequency stability
- > 75dB Optical Signal to Noise
- > 75dB Side-mode Suppression Ratio
- <-165dBc/Hz RIN

Applications:

- Acoustic sensing, marine and perimeter security
- LIDAR, ALSM or laser altimetry
- Injection seed lasers
- Coherent Communications
- RF and microwave photonics
- Spectroscopy, gas absorption testing
- Pipeline monitoring, leak detection
- Oil and gas exploration systems
- Metrology
- Space Communication

2009 PhAST/Laser Focus World
Innovation Award
Honorable Mention



Eternal™ SlowLight™ Laser Specifications (preliminary)

Wavelength selectable range (nm)	1530 to 1565	1047 to 1080
Optional Fast ¹ PZT tuning range (GHz)	1, 10	1, 10, 20
Optional Temperature tuning GHz	0, 20, 60	0, 20, 80, 160
Absolute wavelength accuracy (nm)	± 0.05 ± 0.02 optional	± 0.05 ± 0.02 optional
Power stability (%RMS)	± 0.10	
Beam Quality	M ² < 1.05	
Pure Oscillator/Amplified	Pure Oscillator	Amplified
Output power (W)	0.25-0.4	0.25-2.5
RIN @ 1MHz (dBc/Hz)	< -125	< -125/-130 ⁴
RIN @ 100MHz (dBc/Hz)	< -175	< -165
Lorentzian Linewidth (Hz)	< 1	< 10
Linewidth over 1ms measurement time (Hz)	< 1000	< 400/200 ⁴
Frequency noise (Hz/√Hz) @100Hz	< 55	< 55 / < 30 ⁴
OSNR (dBc) (0.05 nm RBW)	> 85	> 75
SMSR (dBc) (3MHz RBW)	> 75	> 75
Frequency stability (MHz/°C)	± 20 / 1 ⁵	± 20 / 1 ⁵
Polarization extinction ratio (dB)	> 23	
Fiber pigtail (PM FC/APC as standard)	Outlet	
Operating temp (°C)	10 to 55	
Power consumption (W)	30 to 50	
Dimensions	2U 19" rack mount	
¹ >10kHz modulation bandwidth, >100kHz current modulation option available (-I) ² 0.5-50 W amplified power available with a separate power amplifier ³ Shot-noise limited RIN @ frequency > 50MHz, > 20MHz with SL-130 option with pure oscillator ⁴ with slow light SL seed laser option ⁵ After initial warm-up at room temperature ±1°C, 1MHz/°C with -T option		

Ordering Information:

INST – 1000A - 1550.12 – 2 – PZ10B – SL130 – TT – PM

Product Name: <input type="checkbox"/> INST Power (mW): <input type="checkbox"/> 250-2000(add A for amplified) Wavelength (nm): <input type="checkbox"/> 1530 - 1565 • <input type="checkbox"/> 1047 – 1080 (In Vac) Abs. wavelength Accuracy: <input type="checkbox"/> 5 (±0.05nm), <input type="checkbox"/> 2 (±0.02nm)	Optional O/P Fiber Type: PM, SMF Optional Freq Tuning TT Optional Linewidth/RIN SL130 seed for Amplified version Optional PZT Range (GHz) PZ1, PZ10B, PZ20B
--	--

ORBITS LIGHTWAVE INC.
 41 South Chester Ave., Pasadena, CA 91106, USA
 Phone: 626-513-7400 • Fax: 626-513-7410 • www.orbitlightwave.com • sales@orbitlightwave.com