



Luna Technologies' **PHOENIX™ 1200 Tunable Laser Module** incorporates Luna's PHOENIX™ tunable laser and driver in a compact package. The laser is a miniaturized, tunable external cavity laser driven by a circuit designed for low noise and highly linear swept performance appropriate for a variety of fiber optic test, measurement and sensing applications. Application software gives the user simple but effective control of the laser. It also provides for monitoring of wavelength, power and two user accessible optical receivers.

## KEY FEATURES AND PRODUCT HIGHLIGHTS

- Full C-band tunability
- Integrated wavemeter with sub-picometer accuracy
- Smooth, linear scans
- Narrow linewidth, low noise
- External triggering
- 2 optical detectors and data acquisition channels
- Industry leading wavelength accuracy and resolution
- USB interface and full complement of software drivers

## APPLICATIONS

- DWDM component spectrum analysis
- Ideal source for OFDR systems
- Heterodyne measurements
- Bragg grating distributed sensing
- Near IR Spectroscopy



**PHOENIX™ Tunable Laser Source**  
(Model 1200)

Luna's PHOENIX™ Tunable Laser has the best wavelength precision and resolution available combined with a highly linear wavelength sweep.

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# PHOENIX™ 1200 Tunable Laser

PARAMETER	MIN	TYP	MAX	UNITS
<b>Wavelength</b>				
Mode Hop Free Tuning Range	1515		1565	nm
Wavelength Set Point Resolution		0.01		pm
Absolute Accuracy <sup>1</sup>		±1.5		pm
Wavemeter Accuracy <sup>2</sup>		±0.5		pm
Wavemeter Linearity		±50		fm
Stability <sup>3</sup>		±50		pm
<b>Tuning</b>				
Tuning Rate	1		100	nm/s
Deviation from Linearity <sup>4</sup>		±1.5	±2	GHz
<b>Power</b>				
Range	6		10	mW
Accuracy		±5		%
Flatness <sup>5</sup>		±7	±10	%
Ripple <sup>5</sup>		±2		%
<b>Noise</b>				
Spectral line width <sup>6,7</sup>		1.5		MHz
Side mode suppression ratio (nearest mode) <sup>6</sup>	43	50		dB
Relative intensity noise <sup>6</sup>		-152	-145	dB/Hz
Spontaneous Emission Ratio <sup>6,8</sup>		-50	-43	dBc/nm
<b>Inputs</b>				
Auxiliary Detectors (SM FC/APC) Detectable Range	0.001	~	1.0	mW
Electrical Trigger (BNC) "Low" voltage "High" voltage	-0.5 +2.0	0 +3.3	+0.8 +3.8	V
<b>Outputs</b>				
Optical Connector	SM FC/APC			
Electrical Sweep and Retrace Triggers (BNC) +1 MΩ load +50 MΩ load		+2.5 +1.7		V
<b>Size</b>				
Mechanical	23.5 x 12 x 4.5 cm			
<b>Power Requirement</b>				
DC Voltages	±12V, +5V, +3.3V, +150V			

All measurements assume warm-up time of 1.5 hrs.

<sup>1</sup> Determined by internal NIST-traceable gas cell reference.

<sup>2</sup> Measured after wavelength auto-calibration.

<sup>3</sup> For 24 hr period within ± 5 C after laser calibration.

<sup>4</sup> Over full wavelength range at 10 nm/s.

<sup>5</sup> At 10 mW tuning at 10 nm/s over full wavelength range.

<sup>6</sup> Measured with laser set to 1540 nm with 10 mW output power.

<sup>7</sup> Phase noise distribution full width at half maximum at center wavelength integrated over 1 ms. Measurements indicate that the intrinsic laser linewidth (the limit at which the integration time goes to zero) is less than 100 kHz.

<sup>8</sup> Measured with optical spectrum analyzer set at 1 nm resolution bandwidth.

CLASS 1 LASER PRODUCT

