EUREKA

40 GHz Picosecond Fiber Laser

Applications

- Optical clock for 40, 80, 160, 320 GHz OTDM system
- Spectral comb
- Transmission network characterization
- High speed O/E conversion
- Optical sampling
- Metrology

Features

- Repetition rate continuously tunable from 38 to 42 GHz
- Wavelength tunable from 1530 to 1565 nm
- Pulse width selectable from 1 to 5 ps
- Average output power greater than 20 mW
- Transform-limited output
- Linearly polarized output
- Minimal pulse pedestal
- Low timing jitter

The C-band 40 GHz picosecond fiber laser (PSL-40) is an actively mode-locked fiber laser with repetition rate from 38 to 42 GHz that provides a stable and reliable optical clock with turnkey operation. Along with a portable design, the PSL-40 series offers user-friendly front panel control knobs for flexible adjustment of wavelength and output power. The wavelength can be tuned throughout the C-band. The pulse width is factory selectable from 0.8 to 5 ps, with transform-limited spectral width and a better than -20 dB pedestal. The timing jitter is as low as 50 fs and the side mode suppression is better than -75 dB. An output power of greater than 20 mW obviates the need for an additional optical amplification stage. Options for 780 nm or 1 µm band are also available.

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HIGH REPETITION RATE PICOSECOND FIBER LASER

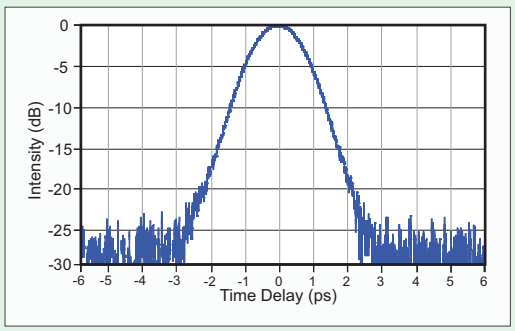
Technical Specifications

Model Number	PSL-40-1T	PSL-40-2T
Pulse Width (ps)*	<1.0	<2.0
Output Wavelength (nm)**	1530 ~ 1565 (tunable)	
Repetition Rate (GHz)	38 ~ 42 (tunable)	
Timing Jitter (fs)	<50 (carrier offset 100 Hz ~ 1 MHz)	
Amplitude Noise (%)	<1	
Output Power (mW)	>20	
Operating Temp (°C)	15 ~ 30	
Operating Voltage (VAC)	85 ~ 264	
Dimensions (cm)	48(w) x 42(d) x 9(h)	

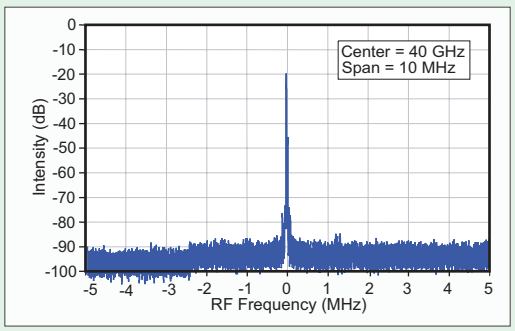
* *Pulse width is selectable within 0.8 to 5 ps. A sech² pulse shape (convolution factor of 0.65) is used to determine the pulse width for the second harmonic autocorrelation trace.*

** *780 nm or 1 μm band is available.*

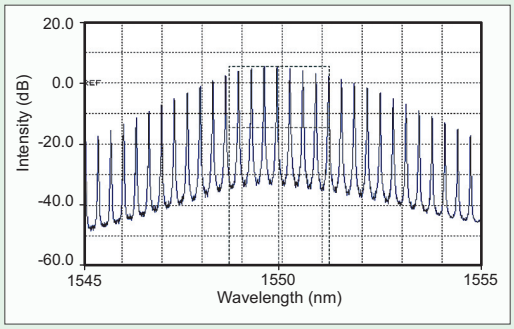
Due to our continuous improvement program, specifications are subject to change without notice.



Autocorrelation Trace Corresponding to a Pulse Width of 0.8 ps



Typical Side Mode Supression of 72 dB



Optical Spectrum of 3.4 nm

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