

780/850 and 1550 nm Femtosecond Fiber Laser



Applications

- High speed receiver conformance testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing
- Seed source for higher energy laser systems

Features

- Average power > 0.5 mW
- Central wavelength 780/850, and 1550 nm
- Pulse width < 2 ps (780/850), < 0.5 ps (1550)
- GHz synchronization for low-jitter triggering
- Turnkey benchtop platform
- Convenient fiber pigtail output
- Exceptional long term stability

The benchtop (FPL-0) series is the perfect short pulse optical source for test and measurement applications. Along with a portable design, the series offers user-friendly front panel control knobs for adjustment of the output power and pulse width. Different synchronization outputs are available with GHz (high harmonic) options that can provide a time domain persistent timing jitter of less than 0.25 ps.

This dual output low power femtosecond fiber laser is a passively mode-locked fiber laser that employs nonlinear wavelength conversion to provide stable short pulse outputs at 780 or 850 nm and 1550 nm. The desired wavelengths need to be specified at the time of purchase. The laser utilizes the proprietary Mendocino saturable absorber technology, which has been developed and perfected over a twenty-year period, to deliver reproducible mode-locking at turn-on with excellent stability and reliability. It features convenient fiber pigtail outputs for each wavelength with power levels greater than 0.5 mW and optical pulses of less than 2 ps at 780 or 850 nm and less than 0.5 ps at 1550 nm.

If the performance parameters do not quite fit your application requirements, please contact us at sales@calmarlaser.com to discuss a customized solution.

Technical Specifications¹

Model Number	FPL-01RCFF	
Output	Port A	Port B
OPTICAL		
Central Wavelength ² (nm)	780 or 850 ± 3	1550 ± 2
Pulse Width ³ (ps)	< 2	< 0.5
Average Power (mW)	> 0.5	
Repetition Rate ⁴ (MHz)	20	
Power Stability over 8 hours ⁵ (% , RMS)	< 0.5	
Beam Quality, M ²	< 1.1	
Polarization Extinction Ratio (dB)	> 20	
Output	Single mode fiber (HI 780) pigtail	Single mode fiber (SMF-28) pigtail
Termination	FC/APC connector	
ELECTRICAL		
Electrical Synchronization (V)	~ 0.5, SMA connector	
Electrical Synchronization Frequency ⁶	Standard Option, 20 MHz	High Harmonic Option, 10 GHz
Persistent Timing Jitter ⁷ (RMS, ps)	< 2.0	< 0.25
Supply Voltage (VAC)	85 - 264 autoranging	
Supply Frequency (Hz)	47 - 63 autoranging	
MECHANICAL		
Operating Temperature (°C)	15 - 30	
Dimensions (cm)	34.9(W) x 43.7(D) x 10(H)	
Weight (kg)	~ 6	

1. Due to our continuous improvement philosophy, all product specifications are subject to change without prior notice. Please contact sales@calmarlaser.com for customized specifications.
2. The desired Port A output wavelength needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
3. A sech² pulse shape (deconvolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.
4. For other repetition rates, please contact sales@calmarlaser.com.
5. Requires an ambient temperature control of ± 1.0°C.
6. A 1 GHz high harmonic option with a persistent timing jitter of < 0.5 ps is also available. The desired synchronization output needs to be specified at the time of purchase. For more details, please contact sales@calmarlaser.com.
7. Measured when used as a trigger signal with a high speed sampling oscilloscope.

