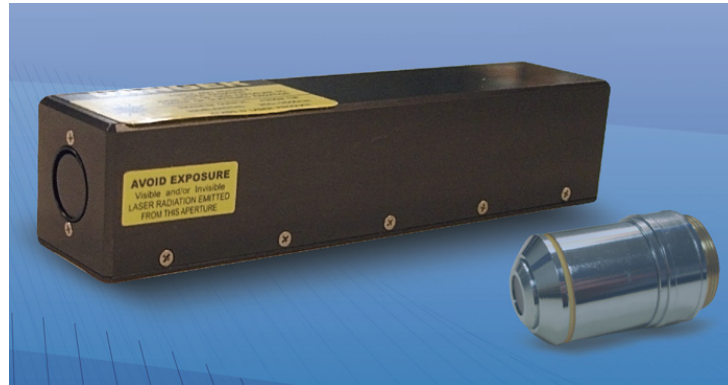


High Power 780 nm Femtosecond Fiber Laser



Applications

- Multiphoton microscopy
- Biophotonics
- Materials characterization
- Optical metrology
- Terahertz radiation

Features

- Ultra compact laser head
- Pulse energy up to 10 nJ
- Wavelength 780 nm
- Pulse widths as short as 0.15 ps
- Linearly polarized output
- Minimal pulse pedestal
- Low timing jitter
- RF synchronization output
- Turnkey operation
- High stability

The high power 780 nm femtosecond fiber laser (FPL-04RFF0 and FPL-05RFF0) is a second harmonic generation (SHG) product of Calmar's passively mode-locked fiber laser in C-band. Its ultra compact laser head is about 300 times smaller than a Ti:sapphire laser with same output power level. It has excellent stability, reliability and turnkey operation, based on the proven C-band laser. Along with a portable design, this FPL series offers user-friendly front panel control knobs for flexible adjustment of output power. The pulse width is as low as 0.15 ps with a negligible pedestal. The timing jitter is as low as 60 fs. The repetition rate can be specified from 10 to 50 MHz with a polarization-maintaining (PM) output. With up to 500 mW output power at 50 MHz and 0.15 ps pulse width, the laser provides as high as 10 nJ pulse energy and 65 kW peak power in free space output. An RF synchronization output is provided as a trigger signal.

Calmar's FPL operation is based upon the company's proprietary passive mode-locking technology, which ensures turn-on and stable long term performance significantly differentiating us from our competitors. Whenever our laser is turned on, it always starts in the same operation state. Mendocino high power femtosecond fiber lasers enable end users to focus on their innovative work, not on the laser itself, while our competitors' laser startup status is unpredictable, requiring constant adjustment during operation.

Technical Specifications

Model Number	FPL-04RFF0	FPL-05RFF0
Pulse Width (ps)*	0.15	
Wavelength (nm)	780 (typical)	
Repetition Rate (MHz)**	50	
Average Output Power (mW)	250	500
Timing Jitter (fs)	~ 60 (carrier offset 100 Hz ~ 1 MHz)	
Spectral Width (nm)	~ 10	
Optical Output	Free space (collimated beam)	
Beam Quality	$M^2 < 1.1$	
Beam Diameter ($1/e^2$, mm)	2.0 (typical)	
Operating Temp (°C)	15 ~ 35	
Operating Voltage (VAC)	85 ~ 264	
Dimensions (cm)	Head: 3.0(w) x 13.5(d) x 3.0(h) ; Electrical driver: 48(w) x 50(d) x 18(h)	

* A sech^2 pulse shape (convolution factor of 0.65) is used to determine the pulse width from the second harmonic autocorrelation trace.

** Other repetition rates are also available.

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

