

780/1550 nm Femtosecond Fiber Laser



Applications

- Quantum Communications Testing
- Photodetector characterization
- Optical metrology
- Materials characterization
- Silicon integrated circuit testing

Features

- Average power > 140, and 350 mW
- Central wavelength 780 and 1550 nm
- Turnkey benchtop platform
- Free space 780 or 1550 nm collinear output
- Exceptional long term stability

The benchtop (FPL-04RC) series is the perfect short pulse optical source for R&D and test and measurement applications. The medium power femtosecond laser offers either 780 nm output (up to 140 mW) or 1550 nm (up to 350 mW) in a collinear beam path via an armored fiber cable. It is the perfect source for applications such as developing quantum communications systems, multiphoton microscopy, generation of terahertz radiation with either GaAs or In GaAs photoconductive antennae, etc.

Along with a portable design, this system offers user-friendly front panel control knobs for adjustment of the output power and pulse width with a simple optical switch on an external head to select the required output wavelength and ensure collinearity of each output beam. A passively mode-locked fiber laser produces < 100 fs pulses at 1550 nm with the 780 nm output achieved through second harmonic generation in an ultra compact laser head. 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. The high quality spatial mode ensures excellent focusability for quantum communications, terahertz generation and multiphoton microscopy applications.

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-04RCFF		
Output	Output A Switch 1	Output A Switch 2	Output B
OPTICAL			
Central Wavelength ² (nm)	780	1550	1550
Pulse Width ³ (fs)	< 90	< 90	~ 600
Repetition Rate ⁴ (MHz)	100		
Average Power (mW)	up to 140	up to 350	~ 0.15
Beam Diameter (mm), TEM00	1.2 (typical)	2 (typical)	N/A
Beam Quality, M ²	< 1.2	~ 1.3	N/A
Termination	Free Space from Laser Head		FC/APC Connector
Beam Divergence (mrad)	< 1.3	< 1	N/A
Output Linear Polarization Horizontal	> 99% linear vertical		N/A
Output A and B Selection	780/1560 switchable/collinear output		Sync with A, Always On

ELECTRICAL	
Electrical Synchronization (V)	0.5 (typical)
Supply Voltage (VAC)	90 ~ 260 VAC, 50/60 Hz
ENVIRONMENTAL	
Operating Temperature (°C)	17 - 35
MECHANICAL	
Controller Dimensions (cm)	34 (W) x 40 (D) x 9 (H); desktop
Laser Head Dimensions (cm)	4.5 x 6.4 x 2.7
Delivery Cable	~ 1 m long armored cable between Controller and Laser Head

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.

