

Femtosecond Pulsed Laser

Calmar's femtosecond pulsed fiber lasers FPL series feature wide range of pulse width and wavelength, and high output power. They provide versatile optical sources for characterizing the femtosecond time response of opto-electronic components and systems.

FPL can generate optical pulses in the range of 0.1 – 20 ps. The optical wavelength can be tuned throughout the C-band. The direct output from the laser produces high quality optical pulses with characteristics of near transform-limited and low pedestals. The direct output offers high peak power of 10 kW at sub 100fs. Yet timing jitter from this passively mode-locked fiber laser is as low as 60 fs. The fixed repetition rates are available in the range of 10 ~ 100 MHz.

FPL is simple and intuitive to operate. The unique pulse width adjustment for FPL-02TT and FPL-03TF are through front panel knobs. The operation is turn-key and requires no external RF source or warm-up. It can be used as a stand-alone CW Tunable fiber laser.

The optional synchronization output frequency can be the fundamental or harmonics of the repetition rate of the laser.

The versatile FPL series have a wide range of applications for optical research and product development. It is ideal for optical receiver characterization, optical sampling, optical switching, optical nonlinearity study and material characterization.



- Pulse widths 0.1 ~ 20 ps adjustable
- Wavelength 1535 – 1560 nm tunable
- Front panel pulse width adjustment
- Transform-limited output
- Low pedestals
- No warm-up time required
- No external RF source required

Optional Upgrades

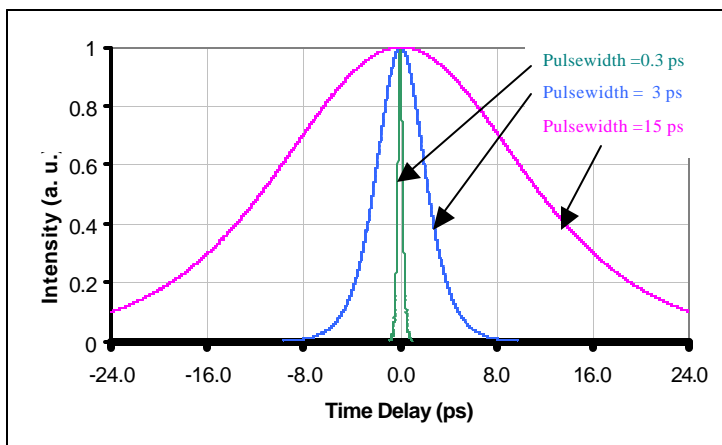
- Repetition rate stabilizer
- PM output
- CW output
- Pulse compression
- Enhanced output power
- Phase locking to external clock
- Multiple repetition rate within 10 –100 MHz
- Synchronization output with bandwidth >3 GHz or customized

Technical Specifications

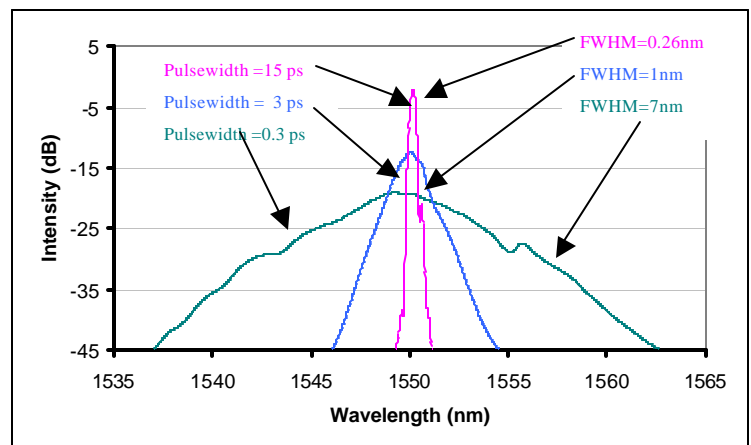
Model Number	FPL-01-AF	FPL-02-TT	FPL-03-TF
Pulse width (ps)	0.5	0.3 ~5 adjustable*	0.1 ~ 1 adjustable
Wavelength (nm)	Fixed within 1535 – 1560	1535 – 1560 1525 ~ 1565 (typical)	Fixed within 1535 – 1560
Repetition Rate (MHz)	20 (Other repetition rate within 10 ~ 100 MHz available)		
Peak Output Power (W)	40	300	1K ~ 10K adjustable
Average Output Power (mW)	0.4 (typical)	5 (typical)	20 (typical)
Timing Jitter (fs)	<70 Carrier offset 100 ~ 1M Hz		
Spectral Width (nm)	5.0 (at 0.5 ps, transform limited)		2 ~ 40 Near transform limited
Operating Temp (°C)	5 - 40		
Operating Voltage (V)	85 - 264 AC		
Dimensions (cm)	34(w) x 42(d) x 9(h)		

Specifications are subject to change without notice - 5/1/2004

* There may be gaps of pulse width. Up to 20 ps achievable.



Autocorrelation trace under different pulsewidth



Optical spectrum trace under different pulsewidth