



Cavityless™

Tunable Picosecond Pulse Source



Free from the typical constraints inherent to cavity-based mode-locked lasers, the **Cavityless™ Series** is the ultrafast first fiber laser to combine seamless wavelength tunability, ultra-low jitter, and continuously programmable repetition rate that simply cannot be matched by conventional mode-locked technology.

Key features:

- Low jitter (< 45 fs)
- Short pulses (< 2.5 ps)
- High repetition rate:
- Up to 50 GHz, selectable
- High power (>10 mW)
- “Instant-on” turn-key operation
- No cavity stabilization or locking

Applications:

- Optical sampling
- Ultrafast spectroscopy
- Frequency metrology
- Sensing and ultrafast imaging
- Material and component characterization
- >100 Gb/s (OTDM) networks



Specifications:

	Typical configuration	Options	Unit
Pulse Repetition rate	10	5-50, selectable ⁽¹⁾ , tunable	GHz
Pulse Width	≤ 2.5	≤ 1.0 ^(2,3)	ps
Temporal Jitter	≤ 45	≤ 25 ⁽⁴⁾	fs
Time-Bandwidth Product ⁽⁵⁾	≤ 0.60	-	-
Output Power	5	other	mW
Amplitude Noise	< 1	-	%
Extinction Ratio	20	25	dB
Tuning Range	Non-tunable	C,L,C+L, optical input	-
Output Type	FC-APC/SMF-28	FC-PC/PM or other	
Synchronization	Internal ⁽⁶⁾	External (user input)	
Power Consumption	<100		W

(1): Integrated pulse picker

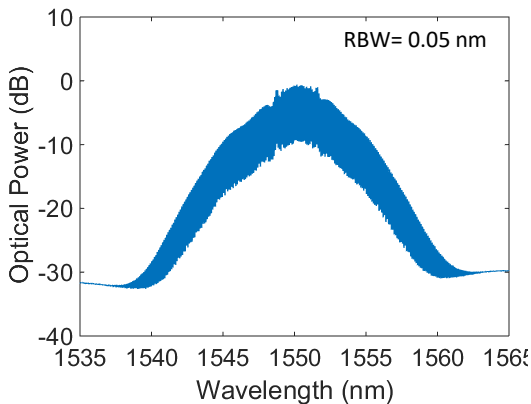
(4): External synchronization required for non-fixed repetition rate

(2): Single band only

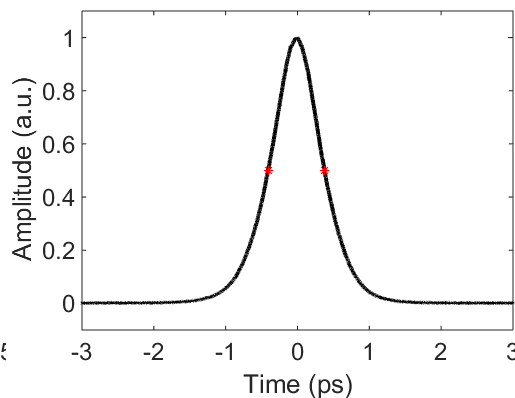
(5): Measured as 3dB widths in time and spectrum

(3): Limited tuning range

(6): With clock output for use as synchronization source



Typical spectra of the output of the Cavityless™ pulse source for sub-picosecond pulse width.



Auto correlator traces of the Cavityless™ pulse source with sub-picosecond pulse width in linear (left) and logarithmic scale (right) showing great pulse shape and high extinction ratio.

