µ-ROC
OEM Femtosecond Autocorrelator

ROC stands for Row Optical Correlator. Based on an ultra compact and robust inline setup, the µ-ROC takes the ROC concepts to its limit for the measurement of single-shot autocorrelation traces in the smallest housing footprint ever. Based on the most advanced innovation from Femto Easy, leveraging several years of experience in the single-shot ultrafast instrumentation, the µ-ROC is specifically designed for OEM direct integration into laser heads or laser systems.

µ-ROC

Key features

- Ultra compact and easy to align
- Robust design, no moving parts. Non sensitive to vibrations
- Directly powered by the USB cable, no power supply required
- Suitable for any repetition rate. Single-pulse extraction possible up to 100 kHz laser repetition rate (with Trigger option)
- User-friendly and powerful software. REST API for standard software integration using simple HTTP requests

Options

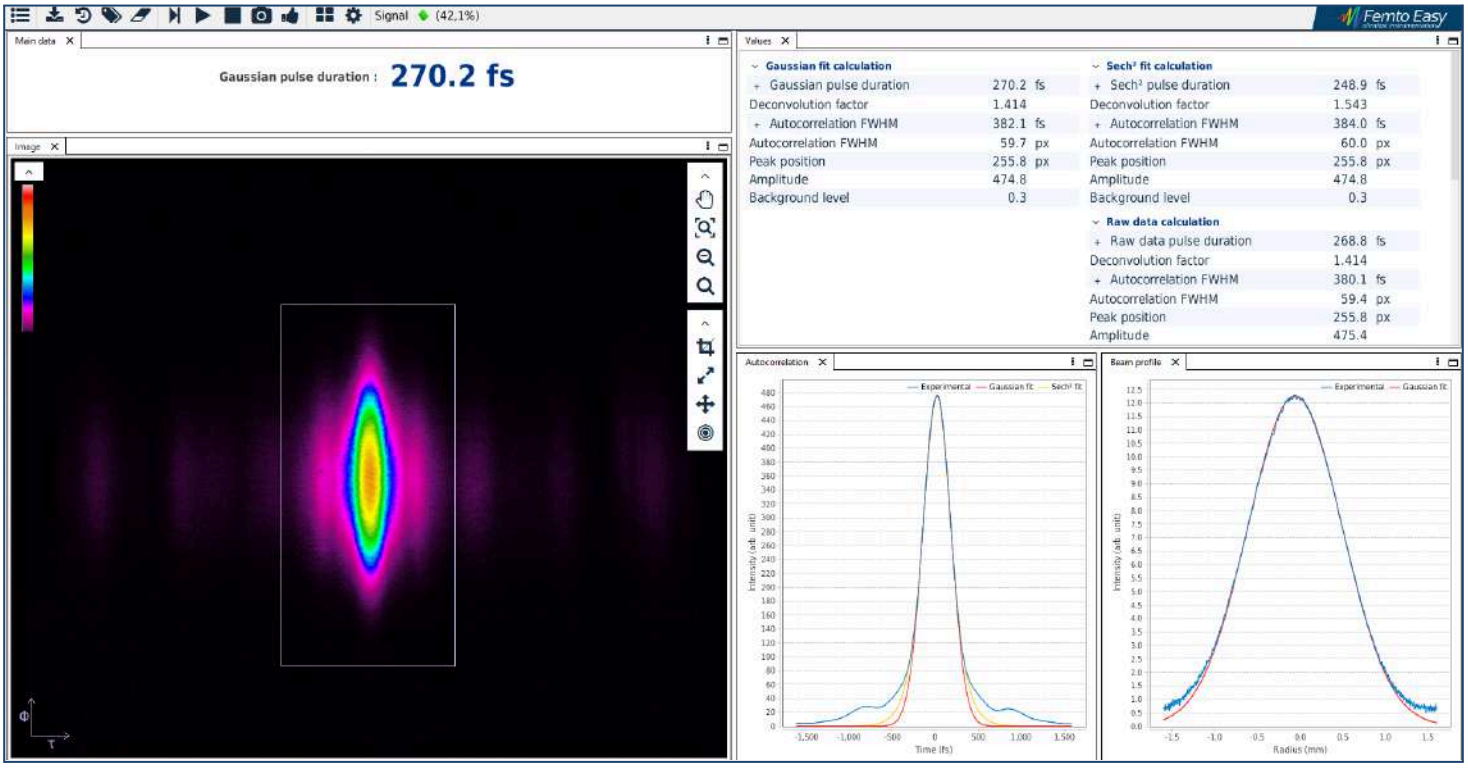
- Trigger
- Enhanced detection

Specifications

µ-ROC Models		Ti:Sa	Ti:Sa-S	Yb	Yb-S	Er	Er-S
Pulse duration range (fs)	min	40 - 80[1]	20 - 50[1]	50 - 150[1]	25 - 50[1]	50 - 150[1]	15 - 50[1]
	max	1200	500	1500	1000	1500	1000
Accessible spectral range (nm)		700 - 900		1020 - 1080		1400 - 1600	1300 - 1700
Input pulse repetition rate		any					
Single-pulse measurement		up to 100 kHz laser repetition rate (with Trigger option, 50 kHz without)					
Min input average power [2]		20 mW	35 mW	5 mW		10 mW	
Min input pulse energy [2]		1 nJ	3 nJ	1 nJ		3 nJ	
Min input pulse energy (single-shot) [2]		25 µJ	50 µJ	1 µJ		3 µJ	
Input polarization		linear horizontal or vertical					
Detection		CMOS 12 bits					
PC Interface		USB 3.1					
Beam height (mm)		20					
Dimensions (mm)		30 x 40 x 45					

[1] The two minimum pulse duration values correspond to the Fourier limited pulse duration with and without GDD precompensation.
[2] Values give an order of magnitude, exact sensitivity depends on parameters such as pulse duration, repetition rate, beam diameter, wavelength…

STAR Software



- Live extraction of shot to shot pulse duration
- Different calculation methods available for proper pulse estimation (Raw data FWHM, Gaussian fit, sech2…)
- Enhanced background & hot pixels treatment, for optimum dynamic and signal to noise ratio
- Client / Server interface, and REST API for the easiest integration
- All data exportable into most common formats

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