

## ROC Single-shot Autocorrelator

ROC stands for Row Optical Correlator. Based on a compact and robust inline setup, the ROC allows the measurement of single-shot autocorrelation traces. Specifically designed to offer the **easiest user experience, they cannot be misaligned and no calibration or tweaking is needed**. Also, they are easily transportable. And yes, they are rock-solid! Besides those advantages, the ROC autocorrelators provide **excellent technical performances and highly accurate measurements**. The ROC autocorrelators are available for different wavelength ranges and several pulse durations.



### Key features

- Compact, robust and ultra easy to use
- Installation and measurement in less than 2 minutes! No calibration necessary
- Suitable for any repetition rate
- Single-pulse extraction possible up to 125 kHz laser repetition rate (with Enhanced detection and Trigger option)
- User-friendly and powerful software
- Acceptable average power up to 2.5 W for high rep rate. Input pulse energy up to a few mJ at low rep rate (with Integrated attenuation option).
- Pulse measurement from 5 fs to 10 ps
- Measurement of beam profile and pulse duration distribution over one diameter

### Options

- Phase matching
- Trigger
- Integrated attenuation (ND filter wheel)
- High dynamic range
- Enhanced detection

## Specifications

ROC Models	FC	FS10	FS20	PS1	PS3	PS5	PS10						
Pulse duration range	min	5 fs	10 fs	20 fs	50 fs	70 fs	100 fs						
	max	150 fs	250 fs	500 fs	1 ps	3 ps	5 ps						
Accessible spectral range (nm)	480 - 2100 <sup>1</sup>												
Input pulse repetition rate	single-shot to GHz <sup>2</sup>												
Single-pulse measurement	up to 125 kHz laser repetition rate (with Trigger and Enhanced Detection options, or 18 kHz without)												
Min input pulse energy <sup>3</sup>	Single-shot	1 $\mu$ J at 30 fs			1 $\mu$ J at 300 fs								
	40 MHz	500 pJ at 30 fs			300 pJ at 300 fs								
Input polarization	linear horizontal (vertical if mounted on the side)												
Detection	CMOS 12 Bits – 3 Mpx – 72 dB												
PC Interface	USB 3.1												
Beam height (mm)	Adjustable from 30 mm												
Dimensions (mm)	55 x 56 x 233	55 x 56 x 265	55 x 56 x 233				55 x 56 x 195						

<sup>1</sup> Effective spectral bandwidth to be defined within the accessible spectral range according to customer's requirements.

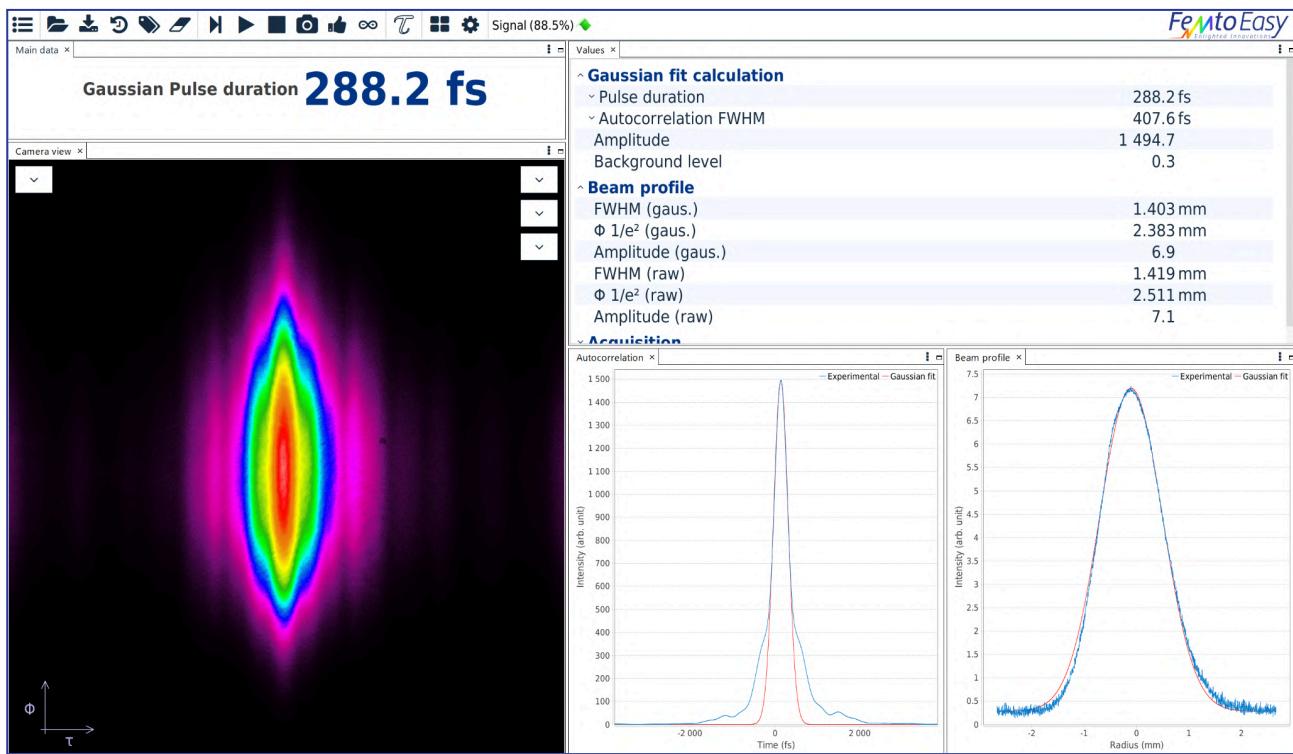
<sup>2</sup> The measurements are averaged over several pulses for lasers with repetition rate higher than 62.5 kHz (with Enhanced detection option).

<sup>3</sup> Those values give an order of magnitude for a 1030 nm laser. The exact sensitivity depends on many parameters (pulse duration, beam profile, wavelength...) Higher sensitivity can be obtained with MS-ROC

Custom versions available on request. For lower power and wider pulse duration ranges, Multi-Shot scanning versions are available (MS-ROC).



STAR Software



- ◆ Live extraction of shot to shot pulse duration
- ◆ Different calculation methods available for proper pulse estimation (Raw data FWHM, Gaussian fit, sech<sup>2</sup>...)
- ◆ Enhanced background & hot pixels treatment, for optimum dynamic and signal to noise ratio
- ◆ Client / Server interface, allowing remote control through network
- ◆ All data exportable into most common formats