# *MS-ROC*

MS-ROC stands for Multi-Shot Row Optical Correlator. It has been specially developed for laser sources with low pulse energy. They are all integrated and offer **extended pulse duration range** (4 fs to 80 ps, depending on the version), **increased sensitivity** (ideal for weak laser sources, pJ-level) **super resolution** thanks to the fine-scan mode, and **modularity,** as the wavelength range can easily be changed thanks to swappable crystals and phase matching options. The high scan speed allows real-time operations for measurement and optimization.

MS-ROC


## Key features

- Ultra simple alignment (2 min to setup)
- Large pulse duration measurement range (from 4 fs to 80 ps)
- High sensitivity (sub-nJ pulse)
- Broad available spectral range, only 4 crystals to cover 480 - 2200 nm (optional), and no need to change the detector
- User-friendly and powerful software

## Options

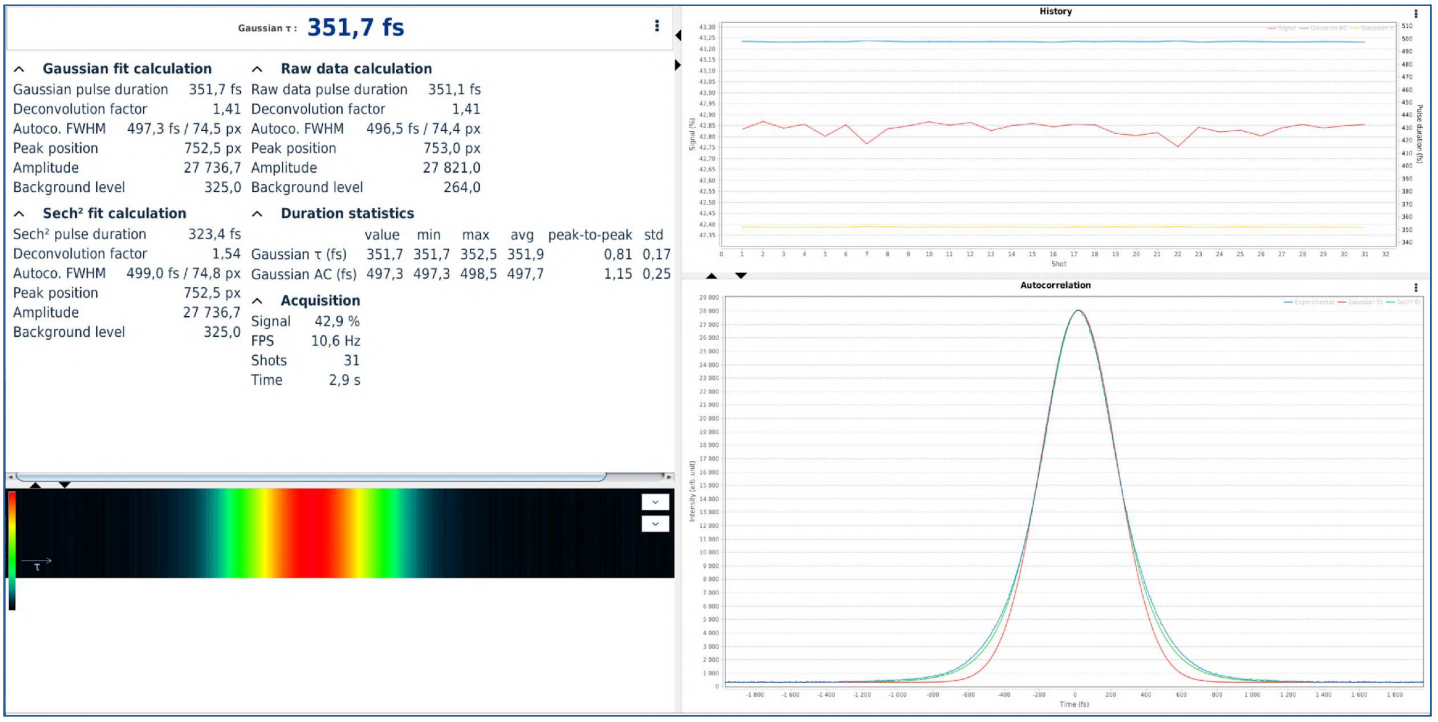
- Fiber input connector
- Phase matching
- Additional crystals
- Few cycle pulse extension
- Low repetition rate
- Low energy

## Specifications

| Models | | MS-ROC | MS-ROC-LP | MS-ROC-SP | MS-ROC-SLP |
|---|---|---|---|---|---|
| Pulse duration range | min | 10 fs [1] - 50 fs | 20 fs | 4 fs [1] - 20 fs | 4 fs [1] - 20 fs |
| | max | 40 ps | 80 ps | 40 ps | 80 ps |
| Fine scan mode range | | not applicable | not applicable | 4 - 100 fs | 4 - 100 fs |
| Accessible spectral range (nm) | | 480 - 2200 [2] | | | |
| Minimum temporal resolution | | 1 fs | 2 fs | standard : 1 fs<br>fine scan : 50 as | standard : 2 fs<br>fine scan : 50 as |
| Scan speed | | > 65 ps/s | > 130 ps/s | standard : > 65 ps/s<br>fine scan : > 400 fs/s | standard : > 130 ps/s<br>fine scan : > 400 fs/s |
| Input pulse repetition rate | | 100 Hz to GHz [3] | | | |
| Min input pulse energy [4] | 1 MHz | 5 pJ | 5 pJ | 1 nJ | 1 nJ |
| | 100 MHz | 0.5 pJ | 0.5 pJ | 100 pJ | 100 pJ |
| Polarization | | Linear vertical | | | |
| Detection | | CMOS 12 Bits – 3 Mpx – 72 dB | | | |
| PC Interface | | USB 3.1 | | | |
| Beam height (mm) | | 69 - 148 | | | |
| Dimensions (mm) | | 222 x 194 x 129 | | 326 x 194 x 129 | |

[1] With few cycle pulse extension option
[2] Effective spectral bandwidth to be defined within the accessible spectral range according to customer's requirements.
[3] Low repetition rate available as an option.
[4] Those values give an order of magnitude. The exact sensitivity depends on many parameters (pulse duration, beam profile, wavelength...)

## *STAR* Software




- Different calculation methods available for proper pulse estimation (Raw data FWHM, Gaussian fit, sech2…)
- Enhanced treatment for real time simultaneous data extraction
- Client / Server interface, allowing remote control through network

- All data exportable into most common formats