

Femtosecond Characterization Tools

_ SPIDER

- ▶ The new VENTEON | PULSE : FOUR SPIDER is the ultimate tool for highly accurate and real-time ultrashort pulse characterization, allowing for a complete pulse reconstruction in the time and frequency domain. This system is well-suited for ultrashort laser pulses with durations down to 5 fs generated e.g. by oscillators, NOPA or amplifier systems.
- ▶ Spectral Phase Interferometry for Direct Electric-Field Reconstruction (SPIDER[®]) is the most powerful technique for robust intensity profile and spectral phase characterization of ultrashort optical pulses.
- ▶ The graphical user interface (GUI) allows for real-time pulse measurements and a simple, user-friendly operation, system calibration and data acquisition.
- ▶ SPIDER does not rely on simple fits or uses complex reconstruction algorithms which are mostly very time consuming like other pulse characterization techniques, but extracts the spectral phase by a robust, non-iterative and rapid retrieval procedure.

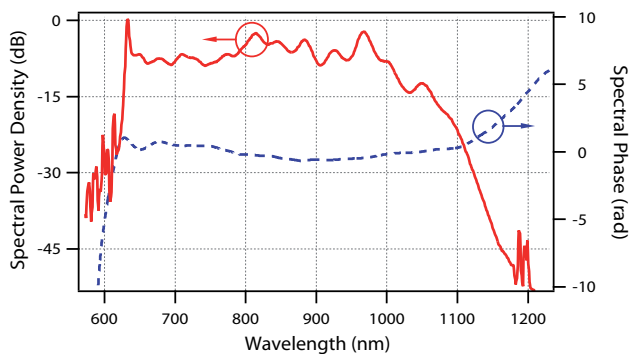


▶ PULSE : FOUR | SPIDER - Spectral Phase Interferometry for Direct Electric-Field Reconstruction

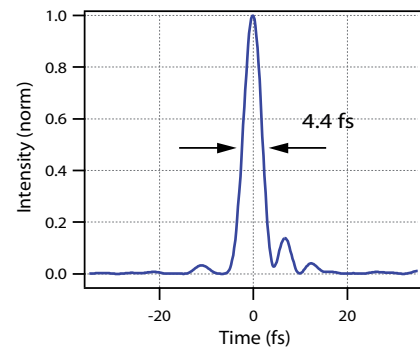
▶ Specifications



- Complete real-time ultrafast pulse characterization down to 5 fs
- Broadband and precise direct spectral phase measurement
- Applicable to ultrashort laser pulses generated by laser oscillators, NOPA or amplifier systems.
- Included spectrometer for measuring the SPIDER interferogram and fundamental oscillator output spectrum
- Compact, stable optical setup using a collinear geometry and no scanning parts
- Dimensions: approx. 300 mm x 360 mm x 150 mm (W x D x H)



▶ Picture showing the spectral phase retrieved with VENTEON | PULSE : FOUR SPIDER plotted together with the corresponding broadband output spectrum.



▶ SPIDER reconstructed pulse featuring a duration as short as 4.4 fs.

- ▶ With this system also broadband dispersion characterization measurements of optical elements and mirrors are possible.

^{*}patented by University of Rochester, USA