

SPIDER

Short pulse characterisation



- Compact and robust
- No scanning components or gratings
- Monolithic stretching scheme
- Suitable for oscillators and amplified systems



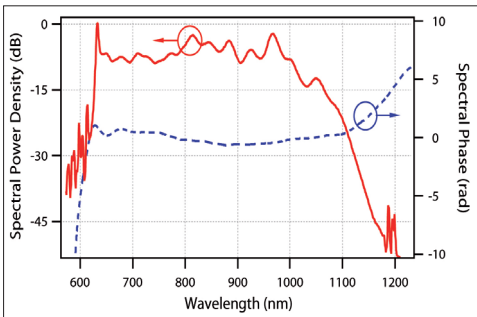
Overview

The **venteon SPIDER** is the ultimate tool for highly accurate and real-time ultrashort pulse characterisation, 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 5fs generated e.g. by oscillators, NOPA or amplifier systems.

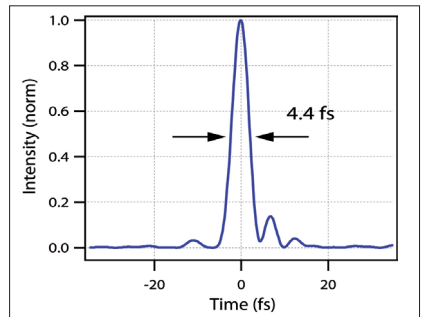
Spectral Phase Interferometry for Direct Electric-Field Reconstruction (SPIDER) is the most powerful technique for robust intensity profile and spectral phase characterisations of ultrashort optical pulses.

A measurement and analysis software allows for real-time pulse characterisations and a simple, user-friendly operation, system calibration and data acquisition.

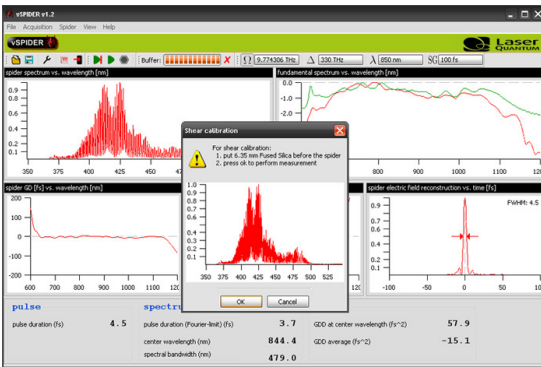
Unlike other pulse characterisation techniques SPIDER neither relies on simple fits nor uses complex reconstruction algorithms which are very time consuming - the **venteon SPIDER** extracts the spectral phase by a robust, non-iterative and rapid retrieval procedure.



Spectral phase retrieved with a **SPIDER** (blue) and the respective broadband output spectrum (red) of the measured laser system.



Resulting temporal profile of the measured pulse being as short as 4.4fs.



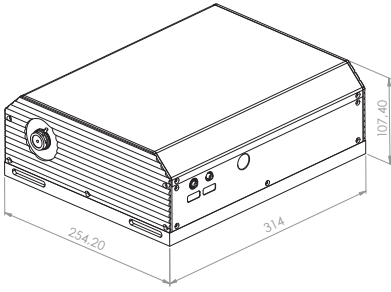
The analysis software allows for real-time pulse measurements and a simple, user-friendly system operation, calibration and data acquisition. The GUI includes new fitting and data exporting features next to various user-defined perspectives. An optional correction mode for large chirp values extends the measurement range.

Acquired SPIDER data sets can be directly loaded into the Laser Quantum **vCHIRP** software for dispersion/pulse compression calculations.

SPIDER



Dimensions (mm)



Drawings are for illustrative purposes only, please contact Laser Quantum for complete engineer's drawings.

Specifications*

| | SPIDER | SPIDER HP |
|--------------------------|------------------------|------------------------|
| Pulse durations measured | 5 - 30fs | 20 - 80fs |
| Spectral bandwidth | 600nm to 1100nm | 700nm to 900nm |
| Chirp range | +/-1000fs ² | +/-4000fs ² |
| Required input energy | >2nJ | >2nJ |
| Repetition rate | 1kHz to 1GHz | 1kHz to 1GHz |

* Laser Quantum operates a continuous improvement programme which can result in specifications being improved without notice.

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