SPIDER

Short pulse characterisation

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

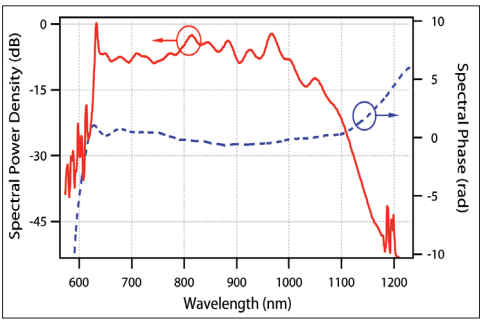
Overview

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 5 fs generated e.g. by oscillators, NOPA or amplifier systems.

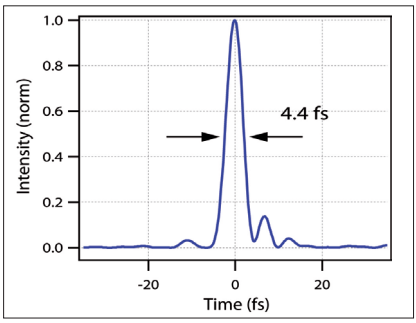
Spectral Phase Interferometry for Direct Electric-Field Reconstruction (SPIDER) is the most powerful technique for robust intensity profile and spectral phase characterisations of ultrashort optical pulses.

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

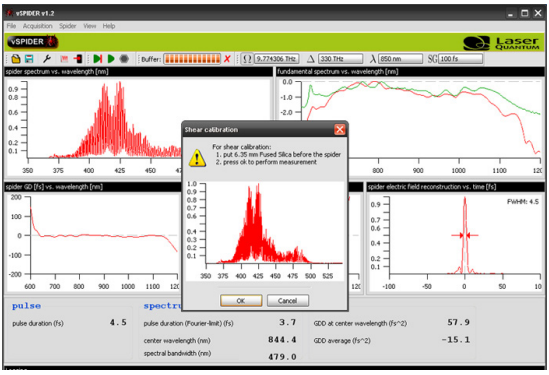
Unlike other pulse characterisation techniques SPIDER neither relies on simple fits nor uses complex reconstruction algorithms which are very time consuming - the **venteon SPIDER** extracts the spectral phase by a robust, non-iterative and rapid retrieval procedure.



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 4.4 fs.

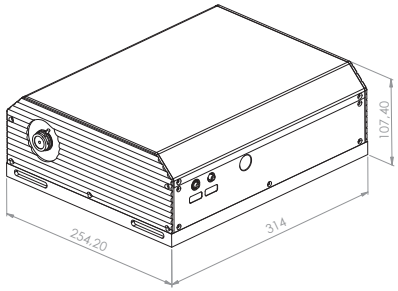


The analysis software allows for real-time pulse measurements and a simple, user-friendly system operation, calibration and data acquisition. The GUI includes new fitting and data exporting features next to various user-defined perspectives. An optional correction mode for large chirp values extents 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 fs to 30 fs	20 fs to 80 fs
Spectral bandwidth	600 nm to 1100 nm	700 nm to 900 nm
Chirp range	+/-1000 fs^2	+/-4000 fs^2
Required input energy	>2 nJ	
Repetition rate	1 kHz to 1 GHz	

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

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