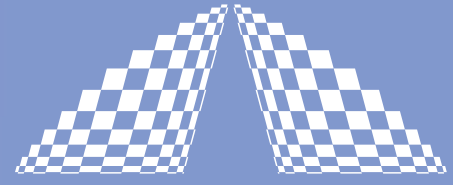


# SPIDER



A P E

## Phase Resolved Ultrafast Pulse Measurement

**SPIDER** is a new measurement system for phase resolved measurement of ultrashort laser pulses. Providing data about phase and intensity it offers all necessary information about the pulse for complete reconstruction of the electric field. One of its great advantages is the very fast non-iterative analysis algorithm that allows for quasi real-time measurement of phase and intensity. Therefore the **SPIDER** is both a highly sensitive measuring instrument and an adjustment tool for complex laser systems such as regenerative amplifiers.



Spectral phase  
Spectral intensity  
Temporal intensity  
Autocorrelation function

Real-time!

Factory calibrated

PC controlled

Suitable for laser oscillators and amplifier systems

Single shot capability

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acoustooptics

**Your Partner in Ultrafast**

# SPIDER

**SPIDER** is based on a patented technology - the Spectral Phase Interferometry for Direct Electric Field Reconstruction. The input pulse is split into two replicas which have a temporal delay in relation to each other. A third part of the pulse goes through a grating stretcher and overlaps with the other two parts in a frequency-converting nonlinear crystal. Since the two replicas are mixed with different spectral components of the stretched pulse they experience a spectral shear. The spectrally sheared pulses are allowed to interfere with each other in a spectrometer. From the resulting spectrogram it is possible to directly calculate the spectral phase profile of the input pulse.

**SPIDER** comes as a complete, calibrated system consisting of optics unit, computer and analysis software. The user is able to get all relevant information for characterizing the laser pulse without the need for in-depth knowledge of the theoretical background.

## SPECIFICATIONS

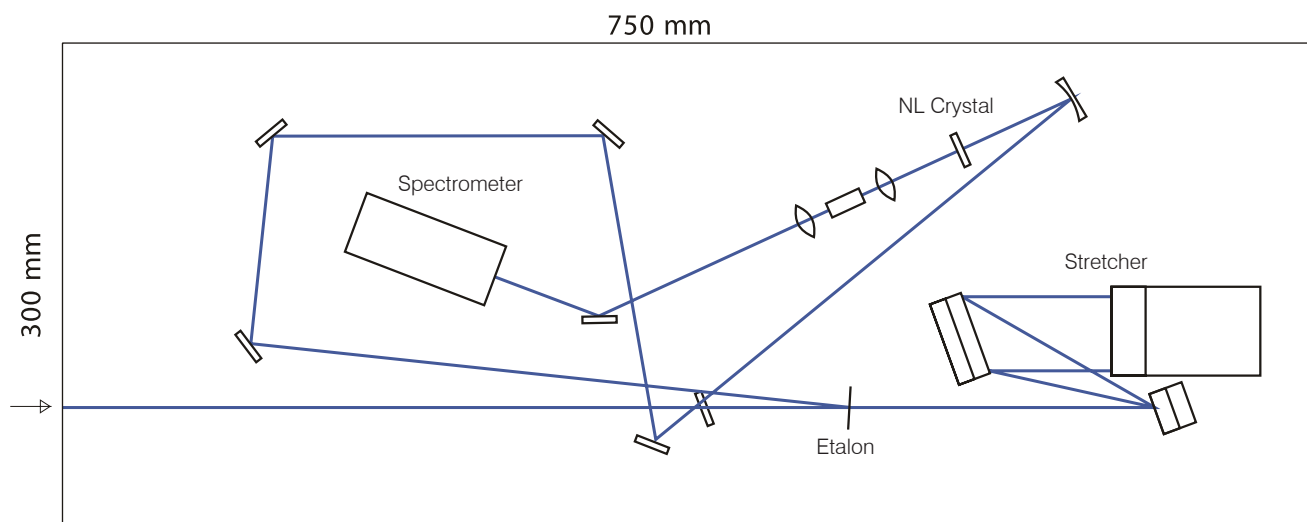
Wavelength range	750 ... 900 nm <sup>1)</sup>
Spectrometer measuring range	700 ... 940 nm
Pulse width	40 ... 150 fs, 20 ... 80 fs or 10 ... 40 fs <sup>2)</sup>
Minimum required input power	100 mW average @ 80 MHz
Beam diameter	up to 4 mm
Input polarisation	horizontal
Input beam height	115 ... 135 mm

## DIMENSIONS

750 mm x 300 mm x 165 ... 185 mm

1) Central wavelength of transform-limited pulses; the actual range depends on pulse width and actual spectrum.

2) These ranges can be covered with exchangeable optics sets.



## Distributors

see APE website [www.ape-berlin.com](http://www.ape-berlin.com)

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APE follows a policy of continued product improvement. Therefore, specifications are subject to change without notice.