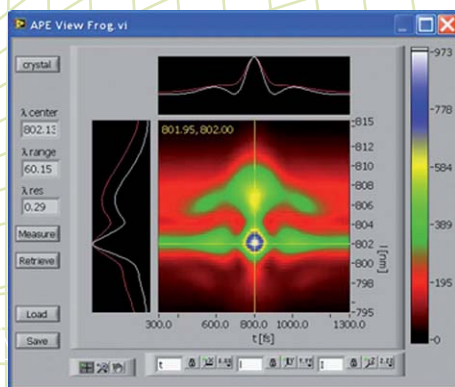


A P E

FROG - Option for **PULSE CHECK**



Easy crystal change



Measured FROG raw data

FULL LASER PULSE CHARACTERIZATION

All APE **PulseCheck** autocorrelators can be modified to acquire FROG data of femtosecond pulses. While the standard autocorrelator provides temporal pulse characterization (autocorrelation), the FROG option offers access to the frequency domain of the ultrafast pulses. This allows for pulse characterization in the time and frequency domain. The phase information can be calculated from the measured FROG raw data with the integrated retrieval software.

FUNCTIONALITY

In addition to the simplicity and the realtime data acquisition of the **PulseCheck** autocorrelator, this option provides access to spectral information. The same instrument is used; it is adapted to the FROG measurement by changing the non-linear crystal (and possibly a mirror) and running appropriate software on a PC connected to the autocorrelator. The technique for attaining the needed spectral resolution is simple: the SHG crystal in the **PulseCheck** acts as a spectral filter. As a result, the ability to acquire FROG data is added to the standard autocorrelator without the need for a separate spectrometer. Additionally, this single-detector approach allows to cover an extremely wide spectral range with high sensitivity.

Complete pulse characterization in one instrument

No spectrometer needed

High sensitivity

Broad spectral coverage (VIS to Mid-IR)

Pulse width range 20 fs to 1 ps

Cost efficient add-on solution for standard autocorrelator

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acousto-optics

Your Partner in Ultrafast

COMPONENTS of the FROG - Option

- a specific non-linear crystal which is easily exchangeable with the standard crystal
- a mirror (depending on configuration)
- PC data acquisition software

DESCRIPTION

After setting the needed measurement parameters:

- wavelength range
- resolution
- pulse width range

the sequential measurement of the FROG raw data takes place. The crystal turns in small steps, each covering a new spectral element. After each turn another autocorrelation trace is recorded. The resulting intensity matrix is shown as a FROG pattern. It can be transferred to a PC, where a FROG pulse retrieval software calculates the phase.

SPECIFICATIONS

Pulse width range	20 fs ... 1 ps*)
Wavelength range	410 nm ... 2 μm^*)
Spectral resolution	0.1 nm (for pulses > 1 ps) ... 10 nm (for pulses < 30 fs)
Sensitivity ($P_{AV} * P_{PEAK}$)	< 1 W ²
Laser repetition rate	> 1 kHz

*) Several FROG crystals required

Distributors

see APE website www.ape-berlin.com

APE GmbH Plauener Straße 163-165 Haus N / 13053 Berlin Germany
Phone +49.30.986.01130 Fax +49.30.986.011333 / Web www.ape-berlin.com Email ape@ape-berlin.de

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