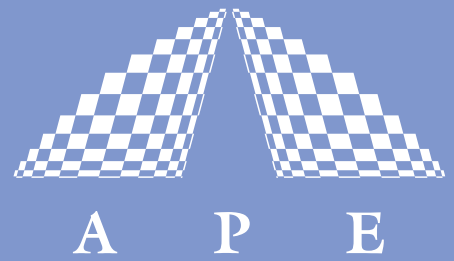


PULSE CHECK



AUTOCORRELATOR

The autocorrelator **PulseCheck** is a versatile instrument for measuring the pulse width of different fs and ps laser systems with the ability to cover a broad wavelength range. Depending on the wavelength range and the repetition rate, additional options such as FROG measurement and separate spectrometers are available.

The wavelength range can be upgraded in the field – please ask which upgrades are possible. APE also offers customer specific modifications.

As with all of the APE autocorrelators the **PulseCheck** is easy to install and easy to use.



Femtosecond resolution

All-reflective optics

Measurement of background free and interferometric autocorrelation functions

PC interface

Windows control software included

Wide measuring range

Display of width of autocorrelation function

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acoustooptics

Your Partner in Ultrafast

PULSE CHECK

SPECIAL DELAY LINE

The **PulseCheck** has a specially designed, spring loaded linear delay drive which allows to choose the scan range according to the pulse width. This offers high accuracy and large duty cycle. Because of the friction-free movement scan ranges down to 150 ps are possible.

REALTIME POSITION MEASUREMENT

The delay is measured in realtime with high resolution to stabilize scan amplitude and to ensure a linear, calibrated time scale. This also provides the capability to measure interferometric autocorrelation functions.

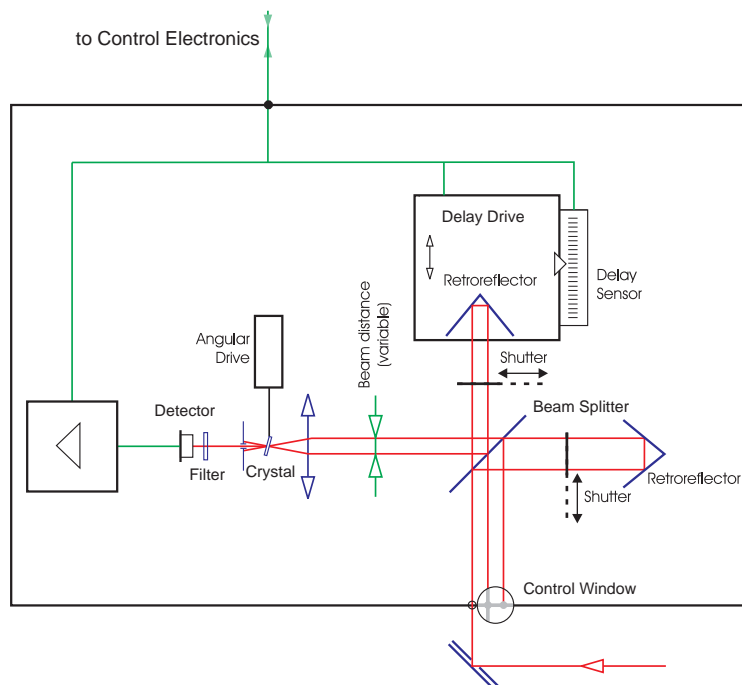
UNIQUE OPTICAL DESIGN

The **PulseCheck** optics is designed using high precision all-reflective optical elements in a very compact way. It comes factory aligned, which means minimal adjustment efforts and easy beam handling for the user. Minimal dispersion guarantees highest possible resolution. The optics unit incorporates beam shutters for convenient SHG signal check and motorized angle tuning of the SHG crystal. The **PulseCheck** offers a simple and continuous adjustment of the interaction angle between replica beams making it easy to switch between collinear and background-free autocorrelation mode. For lasers with low repetition rate a triggered mode allows for synchronization and accumulation of the autocorrelation function.

MENU SELECTABLE FUNCTIONS AND INTEGRATED DISPLAY

The **PulseCheck** control unit provides menu selectable functions including averaging and data storage. A bright graphical color display shows the autocorrelation function together with an alphanumeric readout and analog bargraph indication of the autocorrelation half width. The autocorrelator comes standard with a RS232 serial port.

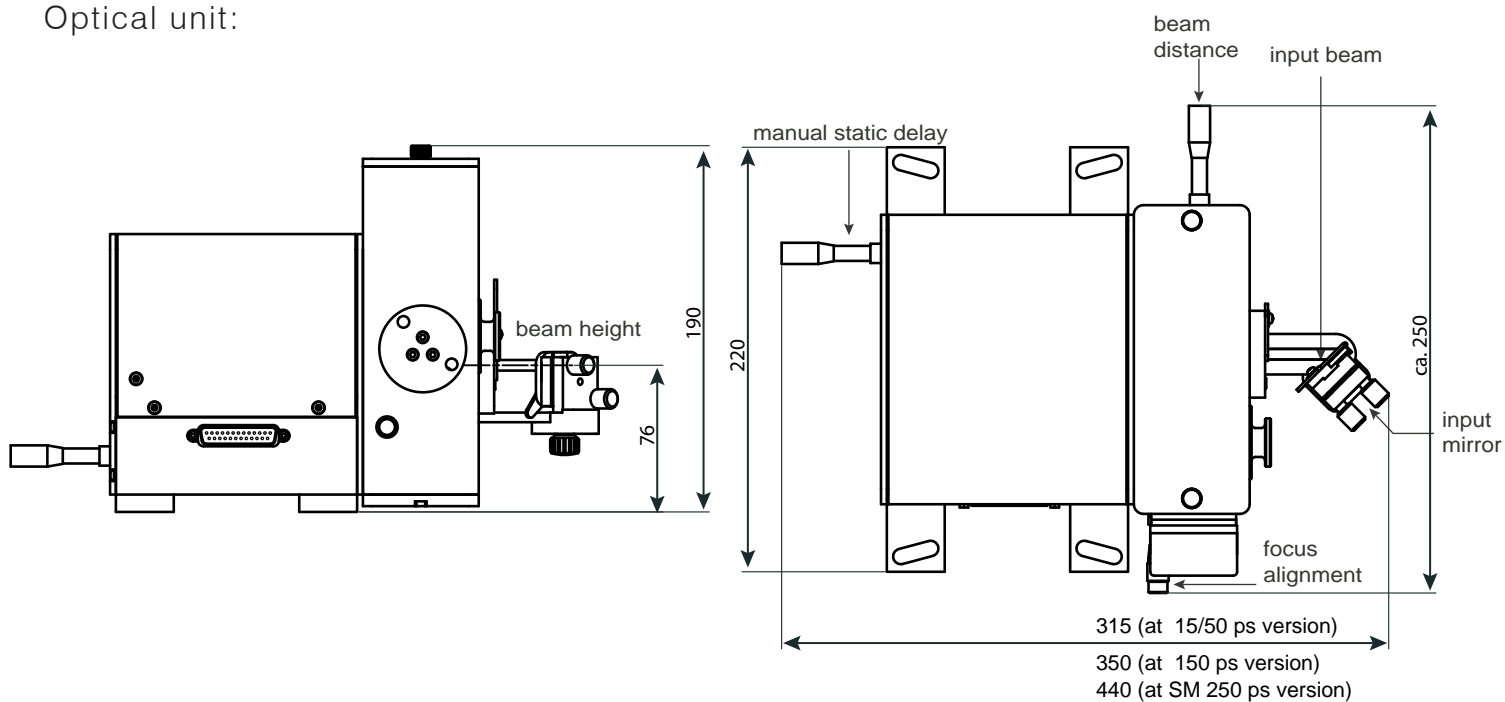
AUTOCORRELATOR OPTICS SCHEME



DIMENSIONS (in mm)

Control unit (W x H x D): 267 x 180 x 312

Optical unit:



PULSE CHECK

SPECIFICATIONS

Version	15	50	150	SM
Scan ranges	150 fs...15 ps	500 fs...50 ps	1.5 ps...150 ps	2.5 ps...250 ps
Delay resolution	<1 fs	2 fs	6 fs	10 fs
Measurable pulse width	< 50 fs ... 3.5 ps	< 50 fs ... 12 ps	< 120 fs ... 35 ps	< 120 fs ... 60 ps
Scan rate	~13 Hz	~10 Hz	~7.5 Hz	~10 ps/s
Linearity of position signal		Better 1% of actual scan range		
Sensitivity ¹⁾		Photomultiplier tube (PMT): $10^{-4} W^2$ (higher sensitivity optional) Photodiode: $1 W^2$		
Wavelength ranges		VIS 1 420 ... 550 nm VIS 2 540 ... 750 nm NIR 700 ... 1100 nm IR 1000 ... 1600 nm Cross 1 360 ... 450 nm (interaction with 720 ... 900 nm) Cross 2 260 ... 320 nm (interaction with 780 ... 960 nm) (others optional between 200 nm and 20 μ m)		
Input polarization		Linear / horizontal		
Laser repetition rate		Depending on optics set PMT > 250 kHz PD > 300 Hz (low repetition rate optional)		
Interaction		Collinear / Non-collinear (fringe resolved and intensity ACF)		
Power supply		95 ... 240 V, 50 ... 60 Hz, 60 W		
Readout		Color graphical display		
Outputs		Delay: analog 0 ... 10 V Signal: analog 0 ... 10 V RS232 serial interface		
Input		Trigger: TTL, < 10 kHz		

OPTIONS

- Spectrometer
- FROG upgrade (phase resolved measurement)
- Additional optics sets
- Fiber input
- Measurement of pulses < 50 fs (ShortPulse option)
- Special scan mode for measuring pulses with a repetition rate between 10 Hz and < 300 Hz (SlowScan option)
- Logarithmic preamplifier
- Enhanced Sensitivity
- Customized wavelength ranges
- IEEE488 and USB interfaces
- Input polarization rotator

¹⁾Sensitivity is defined as average power times peak power of the incident pulses $P_{AV} * P_{Peak}$

Distributors

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