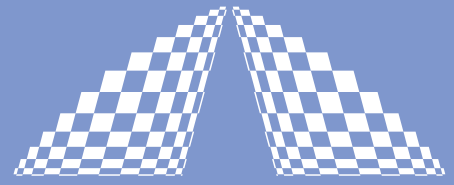


PULSE CHECK



A P E

AUTOCORRELATOR

Precise pulsewidth measurement with the most flexible device out of our family of autocorrelators



"Plug and play", ease of alignment

Femtosecond resolution

Background-free and collinear ACF

Fringe resolved traces

Compact and rugged construction

Pulse duration readout

Computer interface

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acousto-optics

Your Partner in Ultrafast

PULSE CHECK

SPECIAL DELAY LINE

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

ONLINE POSITION MEASUREMENT

The delay is measured online 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.

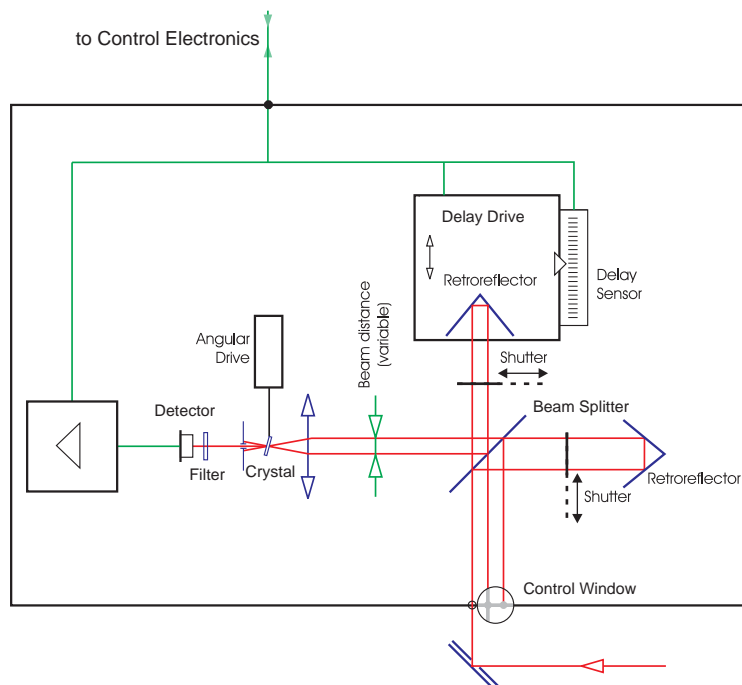
UNIQUE OPTICAL DESIGN

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. **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 colour 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.

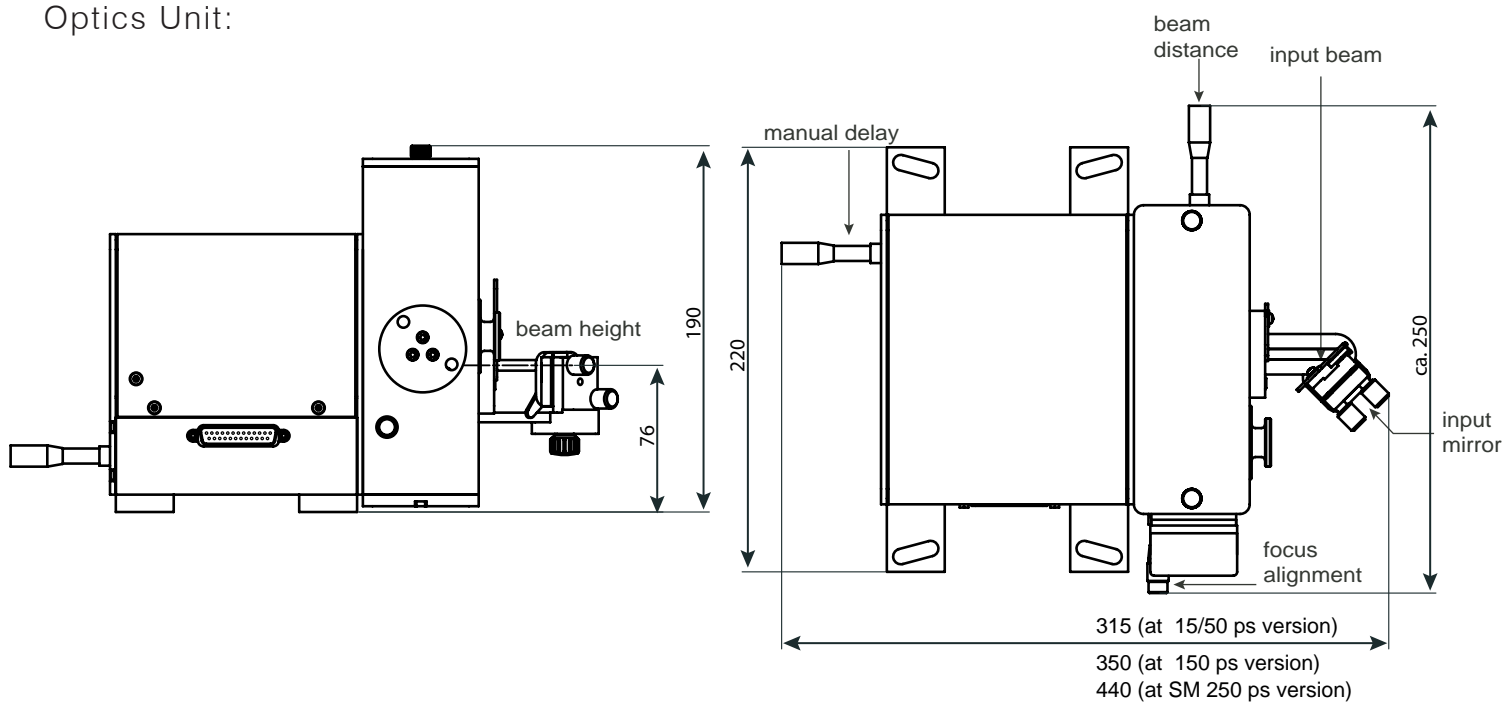
AUTOCORRELATOR OPTICS SCHEME



DIMENSIONS (in mm)

Control Unit (W*L*H): 275*279*240

Optics Unit:



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 ¹⁾
Delay resolution	< 1 fs	2 fs	6 fs	10 fs
Min. pulse width	50 fs ²⁾	50 fs ²⁾	120 fs	120 fs
Max. pulse width	3,5 ps	12 ps	35 ps	60 ps
Scan rate, appr.	13 Hz	10 Hz	7,5 Hz	10 ps/s
	1) Larger scan ranges optional		2) Short-pulse option available	
Linearity of position signal	Better 1% of actual scan range			
Sensitivity ($P_{AV} * P_{PEAK}$)	PMT: $10^{-4} W^2$ (higher sensitivity optional); PD: $1 W^2$			
Wavelength ranges	VIS I	420 ... 550 nm		
	VIS II	540 ... 750 nm		
	NIR	700 ... 1100 nm		
	IR	1000 ... 1600 nm		
	Cross I	360 ... 450 nm (interaction with 720 ... 900 nm)		
	Cross II	260 ... 320 nm (interaction with 780 ... 960 nm)		
	(others optional)			
Input polarization	Horizontal (polarization rotator optional)			
Min. laser repetition rate	Any (optional photodiode detector recommended for repetition rates < 500 kHz)			
Interaction	Collinear / Non-collinear (fringe resolved and intensity ACF)			
Power supply	95 ... 240 V, 50 ... 60 Hz, 60 W			
Readout	Colour LCD 320 x 240 pixels			
Outputs	Delay: analog	0 ... 10 V		
	Signal: analog	0 ... 10 V		
	RS232 serial interface			
Input	Trigger: TTL, < 10 kHz			

OPTIONS

- Spectrometer
- FROG - option
- Additional optics sets
- Fibre input
- Short pulse option
- Triggered SlowScan (recommended for repetition rates < 100 Hz)
- Logarithmic preamplifier
- Enhanced Sensitivity
- Customized wavelength ranges
- Windows control software
- LabView driver
- IEEE488 and USB interfaces
- Input polarization rotator

Distributors

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