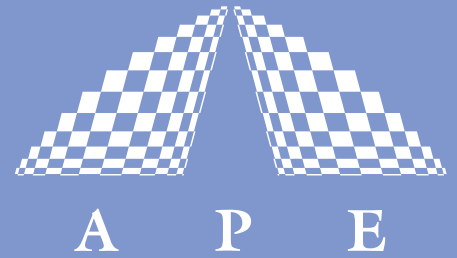


# FEMTOCONTROL



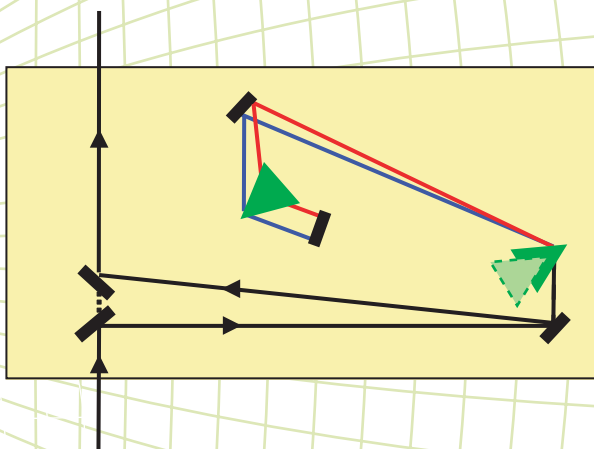
## PULSE COMPRESSOR / PRE-CHIRPER



**FemtoControl** is a compact motorized pulse compressor for user friendly adjustment and optimization of the duration of femtosecond laser pulses in the spectral range of Ti:Sapphire lasers\*.

Femtosecond pulses which pass through any kind of optical material experience dispersion that can lead to immense temporal broadening of the ultrashort pulses. Thus, the experimental conditions are changed and degraded.

**FemtoControl** compensates material dispersion by applying the inverse dispersion (or chirp) to the pulse. This inverse dispersion is generated by a pair of motorized prisms allowing continuous adjustment of the pulse length.



Ideal for Multi-Photon-Microscopy

Wide range of chirp compensation

User-friendly operation

Zero - GVD function

Automatic tuning according to saved GVD-curves

Ultrafast Pulse Diagnostics

Spectral Analysis

Acousto-optics

Pulse Management

Wavelength Conversion

\*For other laser systems contact APE GmbH

**Your Partner in Ultrafast**

# FEMTOCONTROL

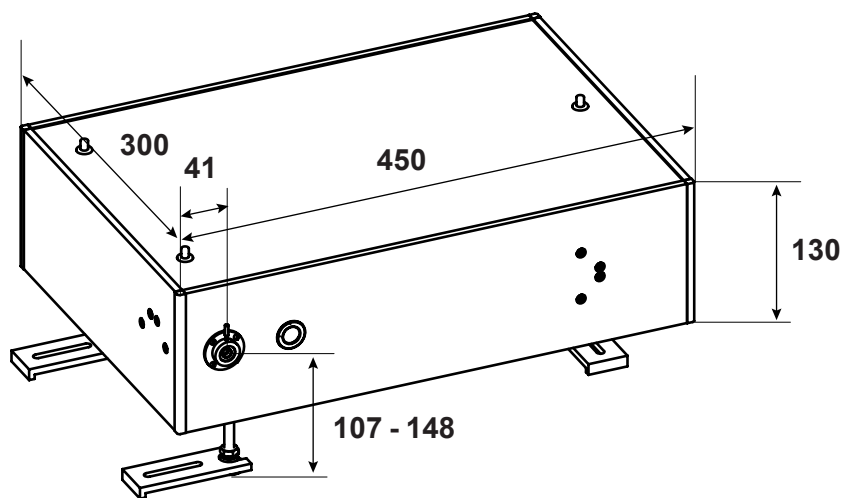
## SPECIFICATIONS

Wavelength ranges	680 ... 1080 nm												
Max. beam diameter	4 mm												
Input polarization	Horizontal (polarization rotator optional)												
Minimum laser repetition rate	Any												
Max. bandwidth (for complete compensation)	12,5 nm @ 800 nm ( $\approx$ 75 fs transform limited) Gaussian pulse; higher bandwidth on request)												
Transmission	>90% @ 800 nm												
Dispersion range	<table><thead><tr><th></th><th>min</th><th>max</th></tr></thead><tbody><tr><td>700 nm:</td><td>0 ...</td><td>-23000 fs<sup>2</sup></td></tr><tr><td>800 nm:</td><td>0 ...</td><td>-13000 fs<sup>2</sup></td></tr><tr><td>900 nm:</td><td>0 ...</td><td>-8000 fs<sup>2</sup></td></tr></tbody></table> (more dispersion on request)		min	max	700 nm:	0 ...	-23000 fs <sup>2</sup>	800 nm:	0 ...	-13000 fs <sup>2</sup>	900 nm:	0 ...	-8000 fs <sup>2</sup>
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900 nm:	0 ...	-8000 fs <sup>2</sup>											
Additional internal beam path	1,67 m												

## CONTROL OPTIONS

Remote control unit or  
control via autocorrelator **Carpe**

## DIMENSIONS (in mm)



## Application Example:

Assuming a transform limited Gaussian input pulse of 100 fs at 800 nm sent into a multi-photon microscope experiences a dispersion of 13000 fs<sup>2</sup> from the glass of the microscope lens system. That broadens the pulse to 380 fs at the sample position. **FemtoControl** in front of the microscope is capable of compensation back to 100 fs pulses at the sample.

At 700 nm a broadening of up to 645 fs, and at 900 nm of up to 245 fs can be compensated, respectively, for a 100 fs transform limited pulse.

Distributors  
see APE website