

Carpe Microscopy Autocorrelator

Microscopy Autocorrelator

- APE's Carpe is a handy option for reviewing the management of short laser pulses in an optical microscope system.
- The Carpe autocorrelator measures the pulse duration at both the sample location and the input of the microscope. A comparison of the pulse widths obtained at these two spots enables you to calculate the pulse broadening effect. This effect is caused by dispersion of the microscope optics, but also depends to a large extent on the pulse width of the incoming laser beam.
- Furthermore, power detection at the sample location supports systematic and quantitative studies which explore how laser power affects samples or the fluorescence lifetime of probes.
- By examining the influence of the laser pulse duration, the power, and the dispersion of the microscope optics, you can fine-tune and optimize microscopy imaging at the relevant spot.
- These measurements can be also done using large NA (numerical aperture) or immersion lenses.



- Study the effect of pulse duration, power, and optics dispersion on microscopy imaging
- Measure pulse widths at the sample position and point of microscope input
- Measure average power at sample position
- Estimate the peak power in conjunction with the pulse width
- Option: Short working distance, e.g. for immersion objective lenses
- Option: femtoControl for optimizing the duration of femtosecond laser pulses

Carpe Specifications

Specifications

Measurable Pulse Width	50 fs ... 3.5 ps; Optional: 30 fs ... 3.5 ps
Wavelength Range (for pulse width measurement)	700 ... 1100 nm or 1250 ... 2000 nm
Wavelength Range (for power detection)	700 ... 1000 nm
Power Measurement	0 ... 30 mW; 0 ... 300 mW
Recommended Repetition Rate	> 500 kHz
Working Distance	> 0.5 mm; Optional < 0.5 mm
Input Polarization	Linear horizontal

Options

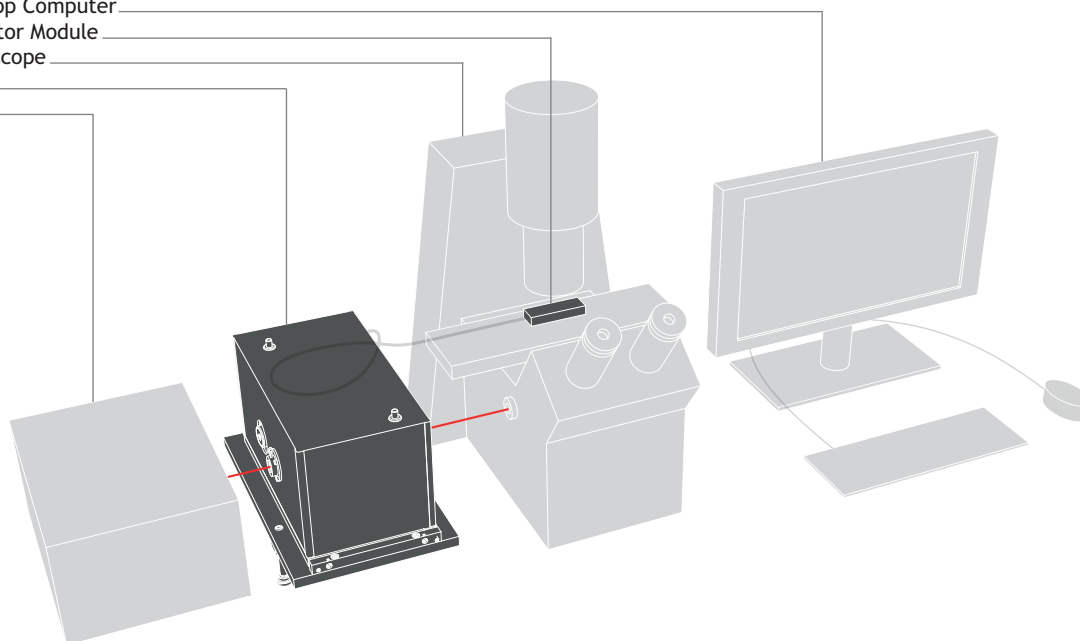
- Short working distance < 0.5 mm (e.g. immersion lenses)
- APE pulse compressor femtoControl (Dispersion management)

Dimensions and Power

Dimensions	295 x 173 x 180 mm (See appendix for details)
Power	95 ... 240 V, 50 ... 60 Hz, 60 W

Example Setup

- Desktop Computer
- Detector Module
- Microscope
- Carpe
- Laser



Example setup of how the Carpe can be used