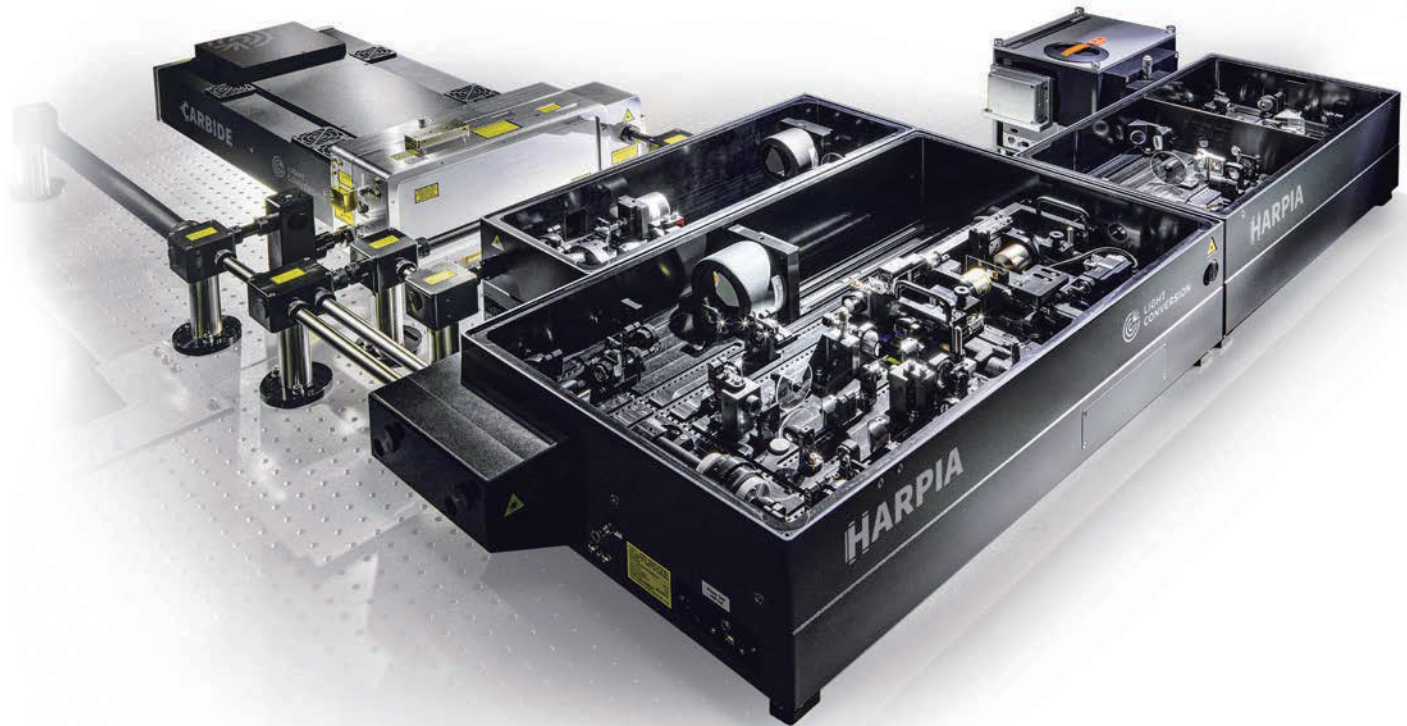


# HARPIA

## Comprehensive Spectroscopy System



The HARPIA comprehensive spectroscopy system performs a variety of sophisticated time-resolved spectroscopic measurements in a compact footprint. It offers an intuitive user experience and easy day-to-day maintenance meeting the needs of today's scientific applications. Extension modules and customization options tailor the HARPIA system to specific measurement needs.

The system is built around the HARPIA-TA transient absorption spectrometer and can be expanded using time-correlated single-photon counting and fluorescence upconversion (HARPIA-TF), third beam delivery (HARPIA-TB), and microscopy (HARPIA-MM) modules. HARPIA is designed for easy switching between measurement modes and comes with dedicated data acquisition and analysis software. Each module is contained in a monolithic aluminum body ensuring excellent optical stability and minimal optical path lengths. For a single-supplier solution, the HARPIA spectroscopy system can be combined with a PHAROS or a CARBIDE laser together with ORPHEUS series OPAs. HARPIA also supports Ti:sapphire lasers with TOPAS series OPAs.

### APPLICATIONS

- Femtosecond transient absorption and reflection in bulk and microscopy modes
- Femtosecond multi-pulse transient absorption and reflection
- Femtosecond fluorescence upconversion
- Femtosecond stimulated Raman scattering (FSRS)
- Picosecond-to-microsecond fluorescence TCSPC
- Intensity-dependent transient absorption and reflection
- Flash photolysis
- Z-scan

# HARPIA | TA

## Ultrafast Transient Absorption Spectrometer

### FEATURES

- Market-leading sensitivity
- 330 nm – 24 μm spectral range
- Probe delay ranges from 2 ns to 8 ns
- Pump pulse energies down to nJ
- Cryostat and peristaltic pump support

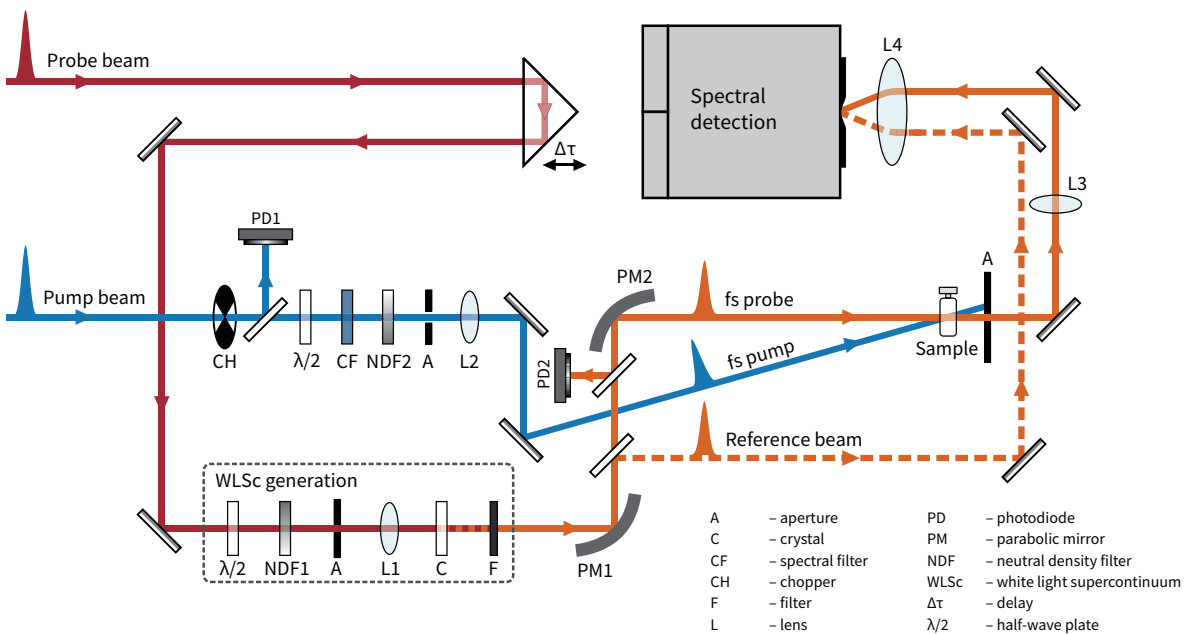


The HARPIA-TA ultrafast transient absorption spectrometer features market-leading characteristics such as 0.05 mOD ( $10^{-4} \Delta T/T$ ) sensitivity and the ability to work at high repetition rates up to 1 MHz, when used with a PHAROS or CARBIDE laser and an ORPHEUS series OPA. A high repetition rate allows measuring transient absorption dynamics with excitation pulse energies down to several nanojoules.

Several probe light configurations and detection options are available: from a photodiode for single-wavelength detection to white-light supercontinuum probing, combined with spectrally-resolved broadband detection. HARPIA-TA features integrated data acquisition and measurement control electronics providing automated pump and probe beam

position tracking and alignment, motorized Berek polarization compensator, motorized supercontinuum generator, automated harmonic switching, an automated sample stage, as well as switching between transient absorption and transient reflection measurements. Delay range from 2 ns to 8 ns is available. The broadband probe covers the 330 – 1600 nm wavelength range and monochromatic probe enables the spectral range extension up to 24 μm.

HARPIA-TA is compatible with cryostats and peristaltic pumps, and the capabilities of the spectrometer can be further extended using expansion modules.



HARPIA-TA optical layout for pump-probe experiments