HELIOS Fire is the next generation, automated femtosecond Transient Absorption Spectrometer in the HELIOS family. Among its numerous advantages, HELIOS Fire features a 100-fold boost in sensitivity, allowing the study of more delicate samples. This, together with our patent-pending automated beam alignment system, delivers a new level of performance and user-friendliness. In addition to being virtually hands-off, HELIOS Fire allows for user customization with its easily removable side panels and improved optical layout.

- Enhanced sensitivity - compatible with nl pump energy levels
- Enhanced beam pointing - drift of <10 μm over the whole delay range
- Unprecedented degree of automation:
  - Automated optical delay line alignment (Smart Delay Line™)
  - Fully Automated pump beam alignment
  - Automated switching between UV, VIS, NIR, and SWIR spectral ranges
- Large sample area - 225 mm x 250 mm
- Parabolic reflectors for continuum management ensure uniform focusing of all wavelengths
- 2-unit design with the optical bench isolated from the electronics and detectors
- 8 ns built-in time window (extendible to milliseconds with Eos add-on)
- Support for large pump beam diameters. Up to 9 mm in diameter without sacrificing the contrast
- Optional computer controlled filter wheel for varying pump energy, etc.
- Magnetically stirred sample holder. Easily interchangeable with optional XY rastering sample holder
- Probe Reference. HELIOS Fire has an option for a second probe (reference) channel
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Time window</th>
<th>Probe spectral range</th>
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<tbody>
<tr>
<td>8 ns</td>
<td>with Ti:Sapphire lasers: 270-390 nm 320-650 nm 420-780 nm 760-840 nm 820-1600 nm 1600-2400 nm</td>
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<tr>
<td>Temporal resolution</td>
<td>Detectors</td>
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<td>Depends on the pulse duration of the laser, typically ~150 fs</td>
<td>ADC resolution: 16 bit</td>
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<tr>
<td>Supported laser repetition rate</td>
<td>Spectral acquisition rate: up to 5000 spectra/s</td>
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<td>10 Hz - 1MHz (Compatible with Ti:Sapphire and Yb lasers)</td>
<td>Improved sensitivity for reflection mode and scattering samples</td>
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### Customsizable
- Customization includes integration of cryostats, additional choppers, and magnets.

### Dimensions
- Optical bench: W18" x L36" x H10" - W457 x L915 x H250 mm
- Delay line: W11" x L36" x H10" - W280 x L915 x H250 mm
- Electronics rack: W21" x L24" x H27" - W534 x L610 x H686 mm

### SOFTWARE

The HELIOS Fire data acquisition software has built-in support for the automated alignment of all critical optical elements for largely hands-off operation. The software is also very user-friendly and versatile:

- Automated alignment of the optical delay line.
- Automated alignment of the pump beam.
- Computer controlled switching between UV, VIS, NIR and SWIR modes.
- Supports computer controlled translating sample holder.
- Support pump beam shutter.
- Supports motorized filter wheel for automated pump intensity control.
- Saves every individual kinetic scan, so if experiment is aborted (due to laser fluctuations, power outages, etc.), all previous scans are not lost.
- Threshold adjusted automatic continuum spike rejection- advanced setting which collects data points again if the continuum is not stable.
- Automatic anisotropy calculation when appropriate optics are used and a reference channel is included.
- Support for multiple choppers to facilitate customized experiments.
- API (Application Programming Interface) for HELIOS Fire is provided for further experiment customization and integration with external applications.

### Unprecedented Degree of Experiment Automation

### Surface Xplorer - Data Analysis Software

The SURFACE XPLORER software is designed to save you a lot of time analyzing your transient absorption/emission data. These data sets come in a form of a 3D surface and are usually quite large. When processed with third-party software they require a great deal of manual copying and pasting in order to display particular spectra/kinetics, perform non-linear fitting or simply remove bad data points. This can be very time consuming!