

**HIRO**

515 nm, 343 nm, 258 nm



**ORPHEUS**

210 nm – 16 μm



**TOPAS**

189 nm – 20 μm



Tunable wavelength source

Pump laser source

**PHAROS**

190 – 300 fs

< 1 MHz

1030 nm



**CARBIDE**

290 fs – 10 ps

< 1 MHz

1030 nm



Other ultrafast laser

Probe beam delay configuration

DLC1	DLC2	DLC6	DLC3	DLC5
2 ns	4 ns	6 ns	8 ns	12 ns *

\*restrictions apply

Aerotech PRO115SL **DL2**  
Ball-screw, 300 mm/s speed.

Physik Instrumente VT-80 **DL1**  
Linear lead screw, 20 mm/s speed.

Delay range	Delay resolution
4 ns	4.17 fs
6 ns	6.25 fs
8 ns	8.33 fs
12 ns	12.5 fs

Delay line

Single-channel InGaAs NIR/mid-IR detector

1.2 – 2.6 μm	<b>DS3</b>
0.7 – 1.8 μm	<b>DS2</b>

Multi-channel InGaAs NIR/mid-IR detector

0.9 – 1.7 μm	<b>DM3</b>
1.1 – 2.6 μm	<b>DM2</b>

Single-channel Si NMOS UV/VIS/NIR detector

0.2 – 1.1 μm	<b>DS1</b>
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Multi-channel Si NMOS UV/VIS/NIR detector

0.2 – 1.1 μm	<b>DM1</b>
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Detectors

Integrated spectrometer **SP3**  
VIS-to-NIR fiber spectrometer with a fixed spectral range.

External spectrometers

Andor Kymera 328i	<b>SP5</b>
Andor Shamrock 163i	<b>SP2</b>
Andor Kymera 193i	<b>SP1</b>

Spectrometer

Polarization control

Manual sample holding unit **SH1**

Sample mover **SH2**  
Sample translation in the focal plane to avoid local overexposure. Precise positioning of an inhomogeneous sample.

Sample translation

Intensity control

Extension **TF1 TF2**

**HARPIA-TF**  
Femtosecond Fluorescence Upconversion & TCSPC Extension

Option	Resolution
TF1 Universal	<150 ps
TF2 High-speed	37 ps

**TB1** Extension

**HARPIA-TB**  
Third beam delivery extension

Multi-dimensional spectroscopic measurements: pump-dump-probe, pump-repump-probe or prepump-pump-probe, time-resolved femtosecond stimulated Raman scattering, etc.



Delay range	Delay resolution
2 ns	4.17 fs
4 ns	6.25 fs



**BC2**  
Motorized Berek compensator  
Automated setting of any pump polarization state at the sample for any UV-to-NIR pump wavelength.



**BC1**  
Manual Berek compensator



Direction	Travel
Horizontal	6.5 mm
Vertical	9.5 mm

**NDF1** Manual neutral density filters  
**NDF2** Motorized neutral density filters



Remote light intensity adjustment and intensity-dependent measurements.

Additional options

**AD1** Measurement in reflection mode  
Additional mounts and optics for collecting the reflected probe signal.

**AD2** Glan-Taylor polarizer  
Miniature polarizer for verifying the polarization orientation inside HARPIA.



**AD3** Reference photodiode  
Measurement of probe signal level for elimination of long-term signal fluctuations.

**AD4** Crystal rotator  
Moves the probe supercontinuum crystal in a circle to allow the use of materials with a lower damage threshold, e.g. CaF<sub>2</sub> and MgF<sub>2</sub>.



**AD5** Beam profiler

**AD6** Motorized pump mirror

**AD7** External beam stabilization

**AD8** Internal beam position tracking

**AD9** Cryostat adapter  
Sample compartment adapter for a user-supplied cryostat. Integration of peristaltic pumps and nitrogen purging.



**AD10** Sample stirrer

**AD11** Flash photolysis extension

**AD12** Microscopy module