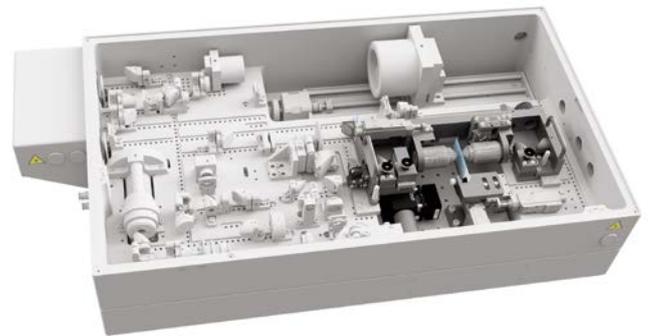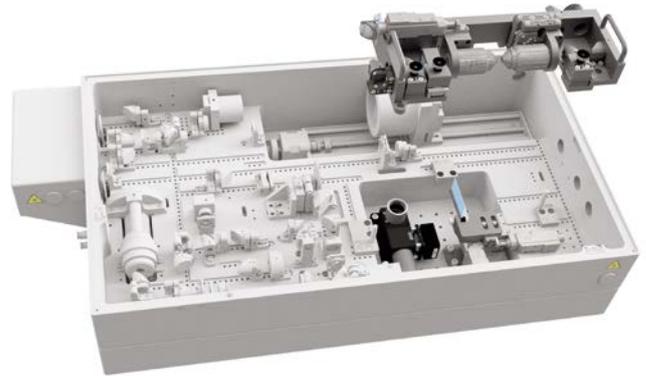# HARPIA

Microscopy Module

new

INTRODUCTION

The microscopy module is an add-on to a standard HARPIA body, which enables spatially-resolved pump-probe measurements with a sub-5 μm resolution. Broadband and monochromatic probe beam options are supported. The module is mounted on a kinematic base, and the user can switch between bulk and microscopic pump-probe modes without disturbing the sample. A 3D motorized stage allows the sample to be positioned and scanned in a $13 \times 13 \times 13$ mm³ volume. Samples of various thickness can be accommodated using an additional motorized objective stage. The sample holder comes with detachable kinematic cassettes for various sample types and sizes. The module can be configured in either transmission or reflection geometry, and the sample can be observed using a conventional brightfield mode, in which the positions of the pump and the probe beams are also visible.

PRELIMINARY SPECIFICATIONS

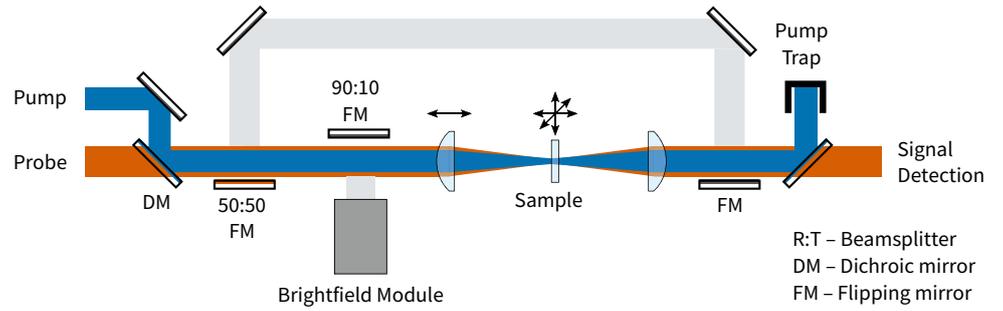| Spatial resolution	5 μm
Working distance	15 mm
Spectral range	480 – 1100 nm
Temporal resolution	500 fs
Sample motion range	$13 \times 13 \times 13$ mm³

HARPIA-TA
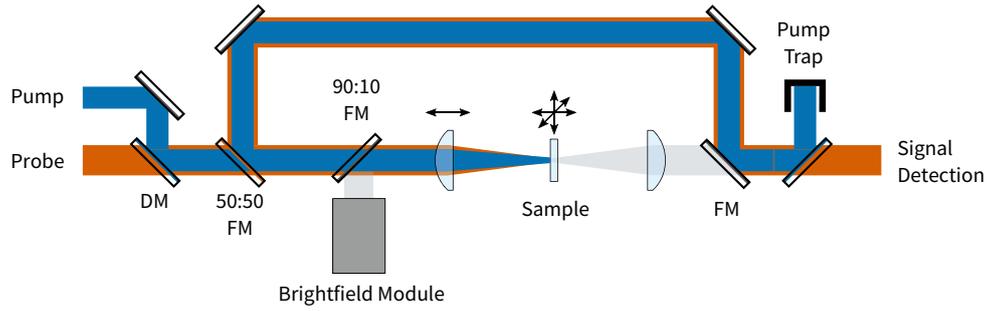
Ultrafast Transient Absorption Spectrometer

HARPIA features a compact design providing excellent optical stability with minimum optical path length. High level of automation ensures easy day-to-day maintenance and an intuitive user experience. HARPIA can be equipped with a number of probe configurations and detection options, different delay lines, cryostats, sample rastering systems and many more features. HARPIA includes dedicated sofware for advanced data analysis, such as global and target analysis, probe dispersion compensation, exponential fitting, etc.
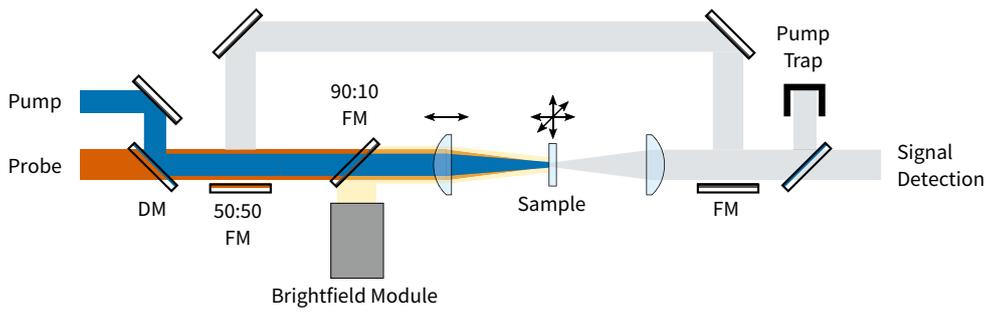

Switching between bulk and microscopic pump-probe modes can be done without disturbing the sample

LIGHT CONVERSION

TRANSMISSION MODE

Pump

Probe

DM

50:50 FM

90:10 FM

Sample

Brightfield Module

FM

Pump Trap

Signal Detection

R:T – Beamsplitter
DM – Dichroic mirror
FM – Flipping mirror

REFLECTION MODE

Pump

Probe

DM

50:50 FM

90:10 FM

Sample

Brightfield Module

FM

Pump Trap

Signal Detection

BRIGHTFIELD MODE

Pump

Probe

DM

50:50 FM

90:10 FM

Sample

Brightfield Module

FM

Pump Trap

Signal Detection

BRIGHTFIELD MODE PERFORMANCE

	4X/0.13	10X/0.30	20X/0.50	40X/0.75
6:1 7.6 µm/line				
7:6 2.2 µm/line				

LIGHT CONVERSION

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