HASO
SWIR FAST

Wavefront sensor
Fast Shack-Hartmann for SWIR

High-speed
High accuracy
Minimized delay

imagine optic

HASO SWIR FAST +

Ideal for FSO and SatCom, the HASO SWIR FAST Shack-Hartmann wavefront sensor meets all demanding applications in SWIR AO with its frame rate of 4.5kHz

This HASO is included in CIAO SWIR, our standard and simple solution to integrate adaptive optics on a telescope.

APPLICATIONS

Successfully used in the most demanding applications in optical metrology that require high speed for Short Wave Infra Red characterization, Free Space Optics and satellite communication, the HASO SWIR FAST performs multiple functions :

+ Quantify atmospheric turbulence in SWIR
+ Quantify the pointing stability of high frame rate laser
+ Drive a deformable mirror in high frame rate adaptive optics setups

FEATURES

+ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of λ/100 RMS including astigmatism and high-order aberrations
+ Perfect knowledge of the measurement time by using the external trigger feature
+ Latency optimized to less than 1 ms, including wavefront measurement, allowing high performance adaptive optics
+ Only 0.2 nW power level needed on the sensor to acquire the wavefront with an accuracy of 30 nm RMS at 4 kHz
+ Patented technology for simultaneous and independent measurements of phase and intensity : no bias in presence of strong scintillations

High performance Dual Camera Link frame grabber

SPECIFICATIONS*

OPERATING SPECS

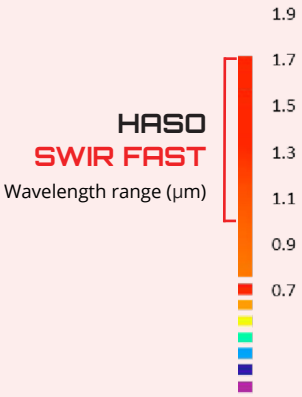
Aperture dimension	1.9 x 1.9 mm²
Number of microlenses	12 x 12
Maximum acquisition frequency	4.5 kHz
Calibrated wavelength range	1.0 - 1.7 µm
Minimum flux	0.1 nW
External trigger	TTL signal
Operating system	Windows 10 & 11 (64 bit applications only)

OPTICAL SPECS

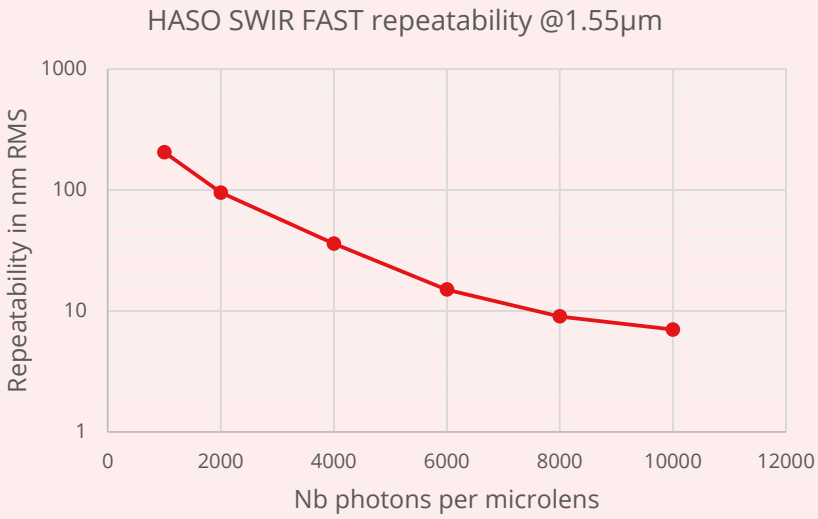
Repeatability	λ/200 RMS
Absolute wavefront measurement accuracy	15 nm RMS
Spatial sampling	150 µm
Tilt dynamics range	> ± 3°
Focus dynamics range	± 0.008 m to ± ∞

MISC

Dimensions (Height x Width x Length)	56 x 62.6 x 73.4 mm³
Working temperature	15 - 30 °C
Interface	Dual camera link frame grabber
Power consumption	1.5 A / 12 V

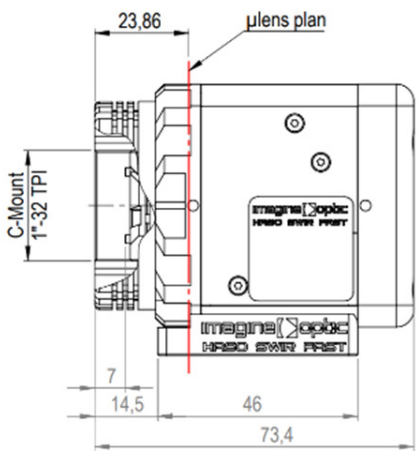


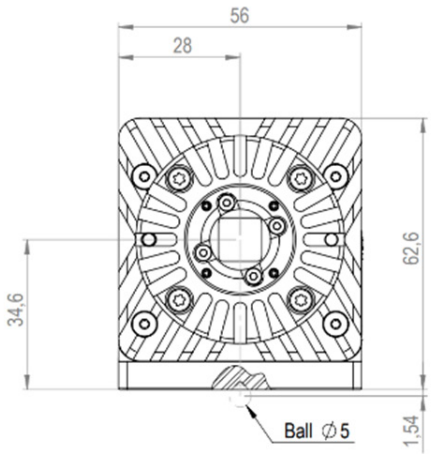
HASO SWIR FAST
Repeatability at low flux



*Subject to changes without further notice
/!\ Acquisition & processing frequencies depend on computer

DIMENSIONS (mm)





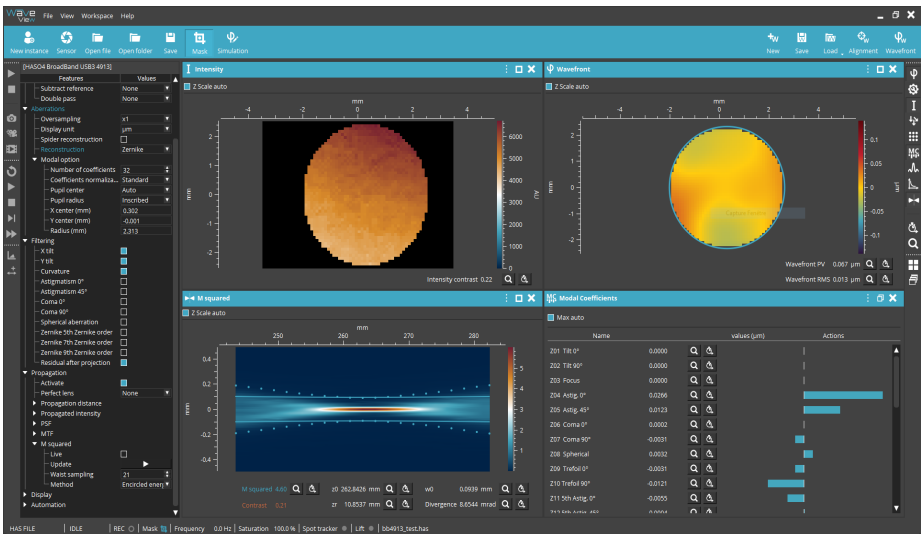
SOFTWARE

WAVEVIEW
Metrology Software

WAVEVIEW is the most advanced wavefront measurement and analysis software.
It offers more than 150 features and tools optimized for a wide range of highly demanding applications.

Options :

+ Extensions for PSF, MTF and Strehl ratio
+ Optional SDK in C/C++, LabVIEW and Python

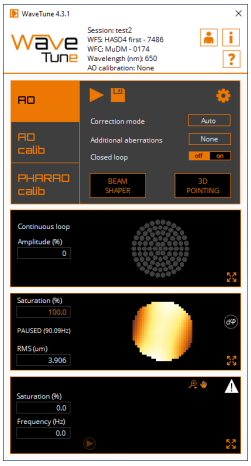


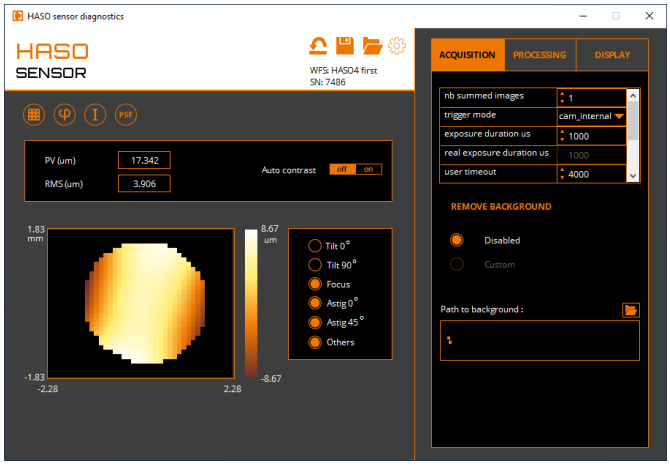
WAVETUNE
Adaptive Optics Software

WAVETUNE is a unique software that seamlessly combines wavefront measurement and correction features with extensive instrument diagnostics.
It is perfectly adapted to our HASO wavefront sensors, ILAO STAR, MIRAO and mu-DM deformable mirrors, as well as to a wide range of active components.

Options :

+ Optional SDK in C/C++, LabVIEW and Python





WAVESKY
Adaptive Optics for Astronomy Software

WAVESKY is an AO software optimized in terms of speed and latency to drive fast deformable mirrors and remove high speed turbulences.
Simply connect your program to WAVESKY kernel and switch on AO when you need it.

CONTACT US

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