HASO4
BROADBAND

Wavefront sensor
The Workhorse

From UV to IR
Versatile
Alignment-free

OEM compatible

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HASO4 BROADBAND

A great choice for almost any lab or industrial application, the HASO4 BROADBAND is Imagine Optic's most versatile wavefront sensor.

This generation features the new SpotTracker™ technology. It provides absolute wavefront and tilt information, eliminating alignment requirements for faster and easier implementation.

Compatible with the Optical Engineer Companion modular system: easily combine the accessories you need.

APPLICATIONS

Successfully used in the most demanding applications in optical metrology, microscopy, and laser diagnostics, the HASO4 BROADBAND performs multiple functions :

+ Quantify the aberrations of an optical system
+ Align the system to ensure that it performs at its best
+ Predict the performance of optical systems in terms of focusing capability or imaging quality
+ Quantify the effects of temperature and gravity on system performance
+ Verify that the optics comply with specifications
+ Measure directly the optical system's wavelength dependency
+ Drive a wavefront corrector to rectify system aberrations
+ Check whether the optical mount overly distorts the optics

FEATURES

+ Easy wavefront measurement on the whole spectrum of the sensor: 350 - 1100 nm with no wavelength dependency
+ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of about λ/100 RMS, including astigmatism and high-order aberrations
+ Beam collimation with an accuracy better than 300 m radius of curvature
+ Gaussian beam measurement down to $1/e^4$ (contrast of 100)

SPECIFICATIONS*

OPERATING SPECS

Aperture dimension	6.9 x 5.1 mm²
Number of microlenses	68 x 50
Maximum acquisition frequency	58 Hz (USB 3.0) or 30 Hz (GigE)
Calibrated wavelength range	350 - 1100 nm
Minimum power	0.15 nW
External trigger	TTL signal

OPERATING SYSTEM

Windows 10

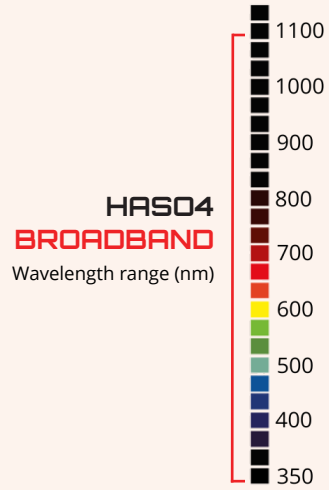
OPTICAL SPECS

Repeatability	< λ/200 RMS
Absolute wavefront measurement accuracy	
• λ between 350-600 nm	≤ 6 nm RMS
• λ between 600-1100 nm	~ λ/100 RMS
Spatial sampling	~ 100 µm
Tilt dynamic range	> ± 3°
Focus dynamic range	± 0.008 m to ± ∞

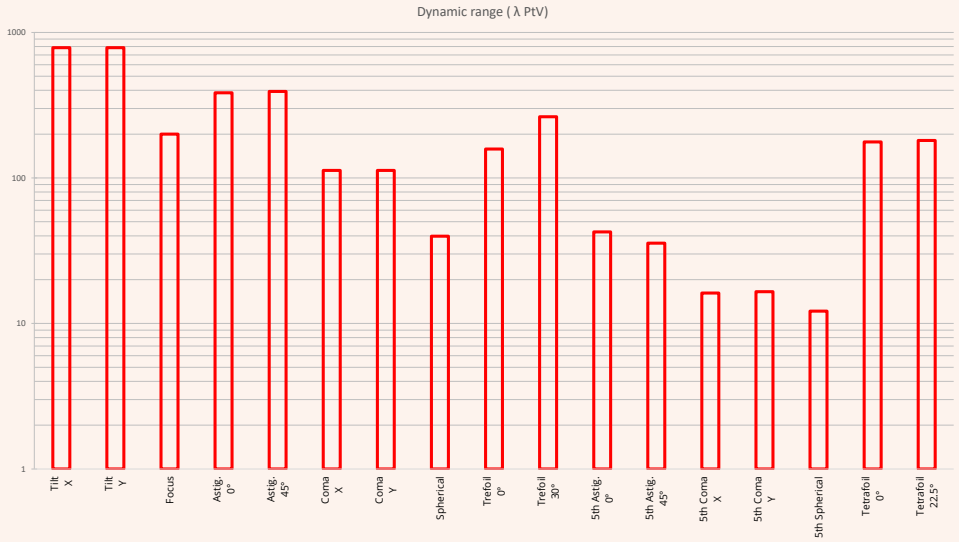
MISC

Dimensions (Height x Width x Length)	42 x 47 x 60 mm³ (USB 3.0)
Weight	200 g
Working temperature	15 - 30 °C
Interface	USB 3.0 or GigE
Power consumption	3.1 W

HASO4 BROADBAND
Wavelength range (nm)

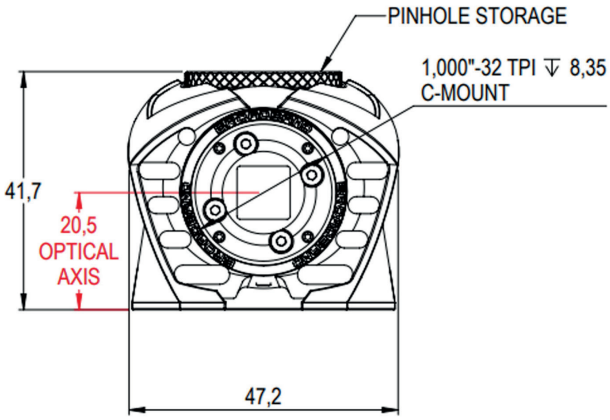


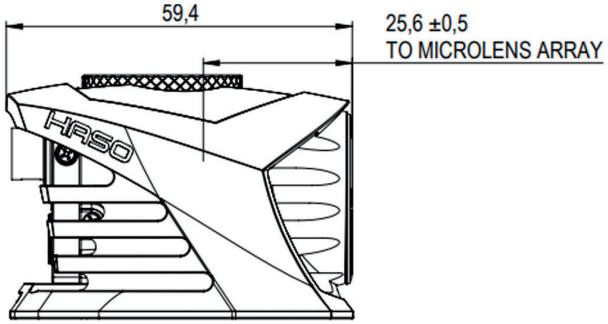
HASO4 BROADBAND
Dynamic range at λ = 635 nm



*Subject to changes without further notice

DIMENSIONS** (mm)





**USB 3.0 model

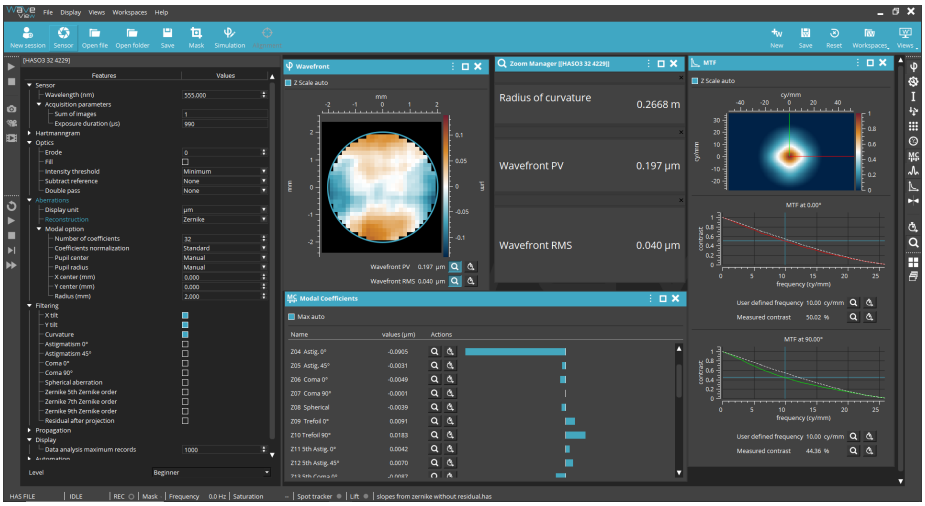
SOFTWARE

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

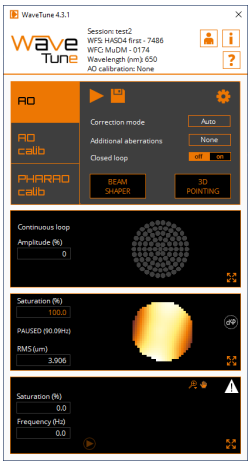


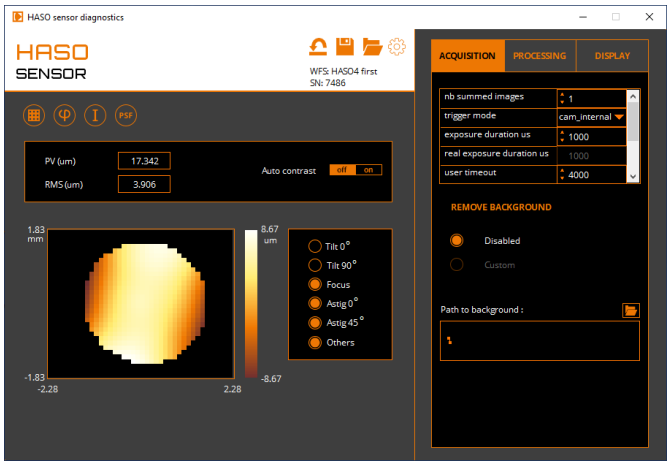
WAVETUNE™
Adaptive Optics Software

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





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