HASO4
FIRST

Wavefront sensor
The Chameleon

On demand wavelength
High accuracy
Best cost performance ratio

NEO compatible

imagine optic

HASO4 FIRST +

The HASO4 Shack-Hartmann Wavefront Sensor optimized for one wavelength, the one you really need.

The HASO4 FIRST is now faster and has an improved spatial resolution while keeping the same accuracy and optimized price point.

NEO

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 FIRST performs multiple functions :

+ Quantify the aberrations of an optical system
+ Align optical systems to ensure that it works optimally
+ 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
+ Drive a wavefront corrector to correct for system aberrations
+ Check whether the optical mount overly distorts the optics

FEATURES

+ Beam collimation with an accuracy better than 200 m radius of curvature
+ A 20 mm focal length measurement with a sensitivity of 1 µm RMS
+ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of $\lambda/100$ RMS including astigmatism and high-order aberrations
+ Control and adjustment of axial laser beam deviation better than 5 µrad RMS

SPECIFICATIONS

OPERATING SPECS

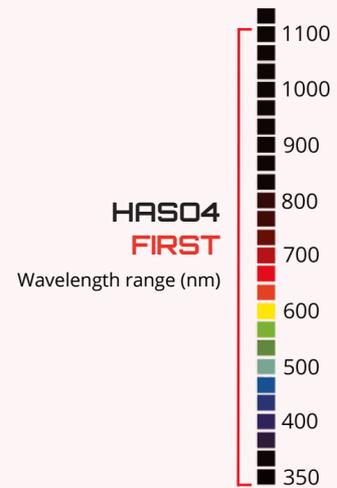|	
Aperture dimension	4.5 x 3.7 mm²
Number of microlenses	44 x 36
Maximum acquisition frequency	125 Hz
One wavelength ± 50 nm in the range	350 - 1100 nm
Minimum power	0.15 nW
External trigger TTL signal	TTL signal

OPERATING SYSTEM   **Windows 10**

OPTICAL SPECS

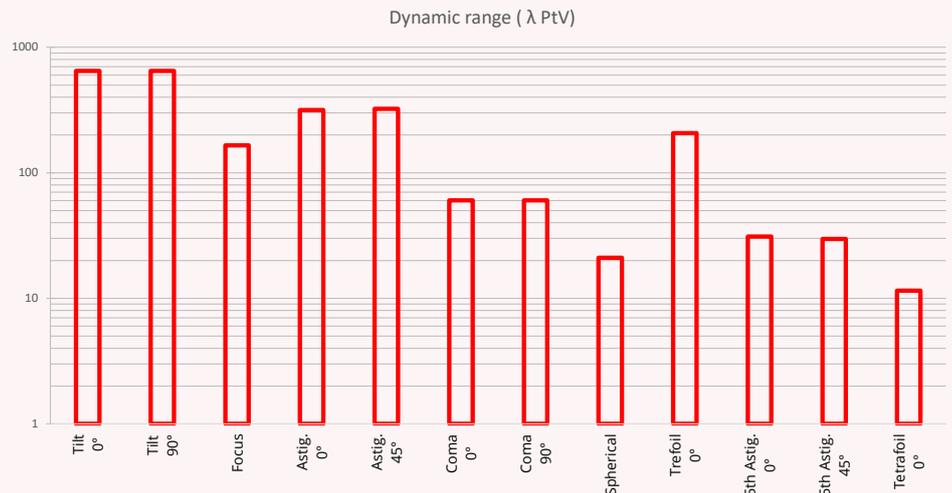|	
Repeatability	< λ/200 RMS
Absolute wavefront measurement accuracy	~ λ/100 RMS
Spatial sampling	~ 100 μm
Tilt dynamics range	> ± 3°
Focus dynamics range	± 0.008 m to ± ∞

MISC

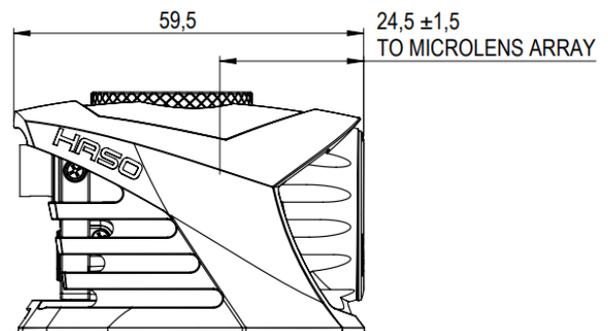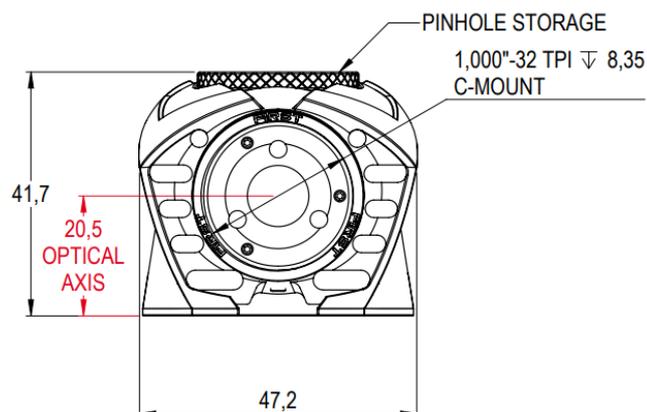|	
Dimensions (Height x Width x Length)	42 x 47 x 60 mm³
Weight for USB version	200 g
Working temperature	15 - 30 °C
Interface	USB 3.0
Power consumption	3.1 W

HASO4 FIRST
Wavelength range (nm)

1100
1000
900
800
700
600
500
400
350

HASO4 FIRST
Dynamic range at λ = 550 nm

Dynamic range (λ PtV)

Tilt 0° · Tilt 90° · Focus · Astig. 0° · Astig. 45° · Coma 0° · Coma 90° · Spherical · Trefoil 0° · 5th Astig. 0° · 5th Astig. 45° · Tetrafoil 0°

DIMENSIONS (mm)

PINHOLE STORAGE
1,000"-32 TPI ⊽ 8,35
C-MOUNT

41,7
20,5
OPTICAL AXIS
47,2

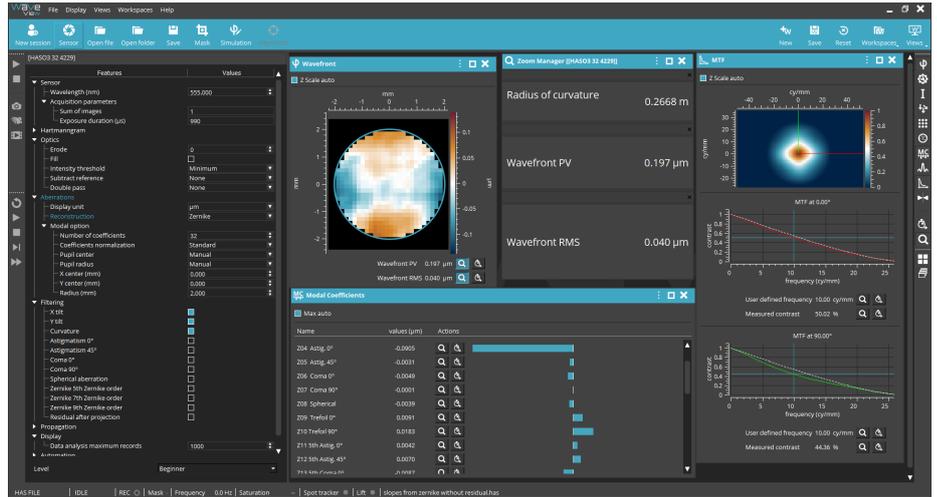59,5
24,5 ±1,5
TO MICROLENS ARRAY

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
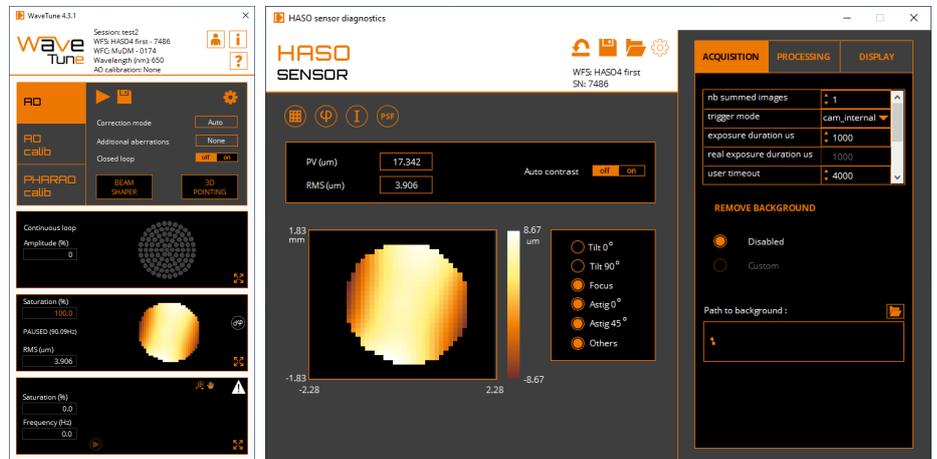
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