HASO4
126 Broadband

The Optical Metrology
The Hulk

High Spatial Resolution
Alignment-Free
Wavefront Sensor

neo compatible

imagine Optic

HASO4 126 BROADBAND +

The HASO4 126 Broadband Shack-Hartmann wavefront sensor provides high-resolution and broadband for maximum precision and versatility.

The second generation was released in 2020, and features the new SpotTracker technology. It provides absolute wavefront and tilt information, eliminating alignment requirements.

This instrument is compatible with the Optical Engineer Companion metrology system.

APPLICATIONS

Successfully used in the most demanding of applications in optical metrology, microscopy, and laser diagnostics, the HASO4 126 Broadband enables you to :

+ Quantify the optical system's aberrations

+ Align the system to ensure that it performs at its best

+ Predict the optical system's performance in terms of focalization capability or imaging quality

+ Quantify the effects of temperature and gravity on the system's performance

+ Verify that the optics comply with specifications

+ Directly measure the optical system's wavelength dependency

+ Pilot a wavefront corrector to change the system's aberrations

+ Check whether the optical mount overly distorts the optics

FEATURES

The HASO4 126 Broadband enables you to perform multiple functions by combining :

+ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of $\lambda/100$ rms, including astigmatism and high-order aberrations

+ Beam collimation with an accuracy better than 300 m radius of curvature

+ Control and adjustment of axial laser beam deviation better than 3µrad rms

+ 3D localization of a focal spot up to 0.1 µm rms and 1 µm rms for lateral and axial resolution, respectively (0.1 NA beam)

+ Patented technology for simultaneous and independent measurements of phase and intensity

SPECIFICATIONS

OPERATING SPECS

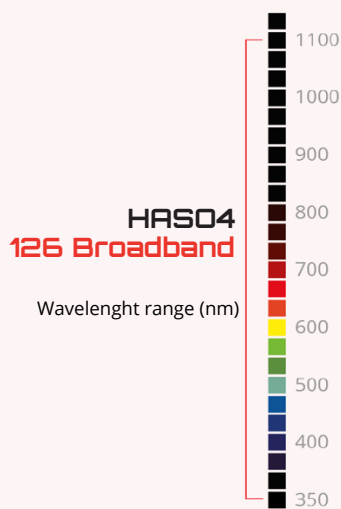|	
Aperture dimension	13. 78 x 10.21 mm²
Number of microlenses	170x126
Maximum acquisition frequency	30 Hz
Calibrated wavelength range	350 - 1100 nm
Mimimum power	0.15 nW
External trigger TTL signal	

OPERATING SYSTEM | **Windows 7 & 10**

OPTICAL SPECS

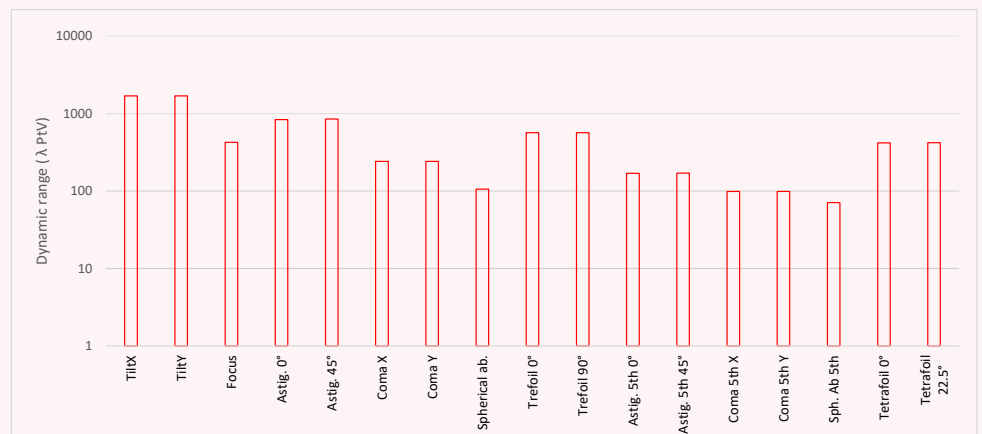|	
Repeatability	$< \lambda/200$ rms
Wavefront measurement accuracy in absolute mode	
• λ between 350-600 nm	$\leq$ 6 nm rms
• λ between 600-1100 nm	$\sim \lambda/100$ rms
Spatial sampling	$\sim$ 80 µm
Tilt dynamics range	$> \pm 3°$
Focus dynamics range	$\pm$ 0.010 m to $\pm \infty$

MISC

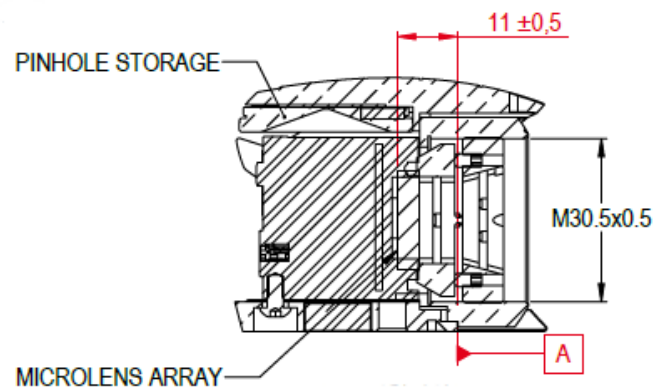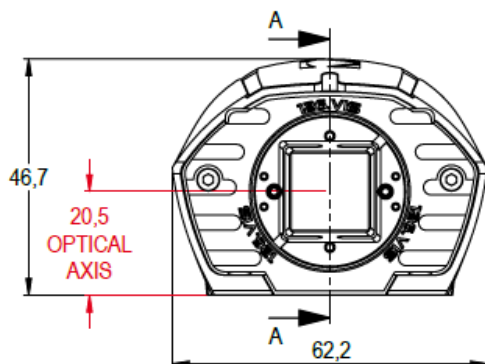|	
Dimension/weight for USB version	42 x 47x 60 mm³ / 185 g
Working temperature	15 - 30 °C
Interface / Power consumption	USB 3.0 / 2.9 W

HASO4
126 Broadband

Wavelenght range (nm)

| 1100 |
| 1000 |
| 900 |
| 800 |
| 700 |
| 600 |
| 500 |
| 400 |
| 350 |

HASO4 126 Broadband
Dynamic range

DIMENSIONS (mm)

46,7
20,5
OPTICAL
AXIS
62,2

11 ±0,5
PINHOLE STORAGE
M30.5x0.5
MICROLENS ARRAY

SOFTWARE

WAVEVIEW 4
Metrology Software

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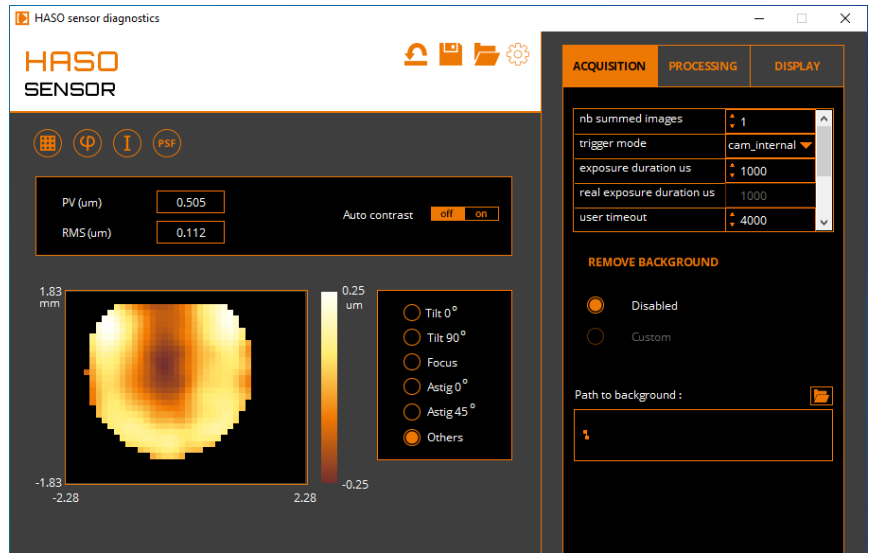It offers more than 150 features and tools optimized for a wide range of highly demanding applications.

+ Extensions for PSF, MTF, Msquare and Strehl ratio

+ Zoom, History and script modes

+ Optional SDK in C/C++, LabVIEW and Python
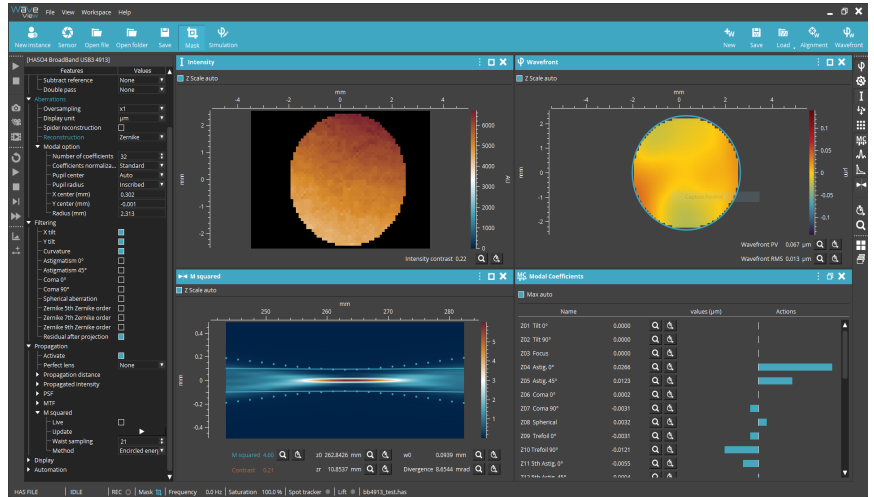
WAVETUNE 4
Adaptive Optics Software

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, and MIRAO deformable mirror, as well as to a wide range of active components.

+ Compatible with any deformable mirror or SLM

+ Closed-loop or open-loop

+ Optional SDK in C/C++, LabVIEW

CONTACT US

HASO4 126 BROADBAND DATA SHEET / 2022