HASO SWIR

CALIBRATED FOR
0.9 - 1.7 μm

Lambda/100
ABSOLUTE ACCURACY

COMPACT
AND VERSATILE

High accuracy Shack-Hartmamn wavefront sensor for SWIR

A UNIQUE SET OF ADVANTAGES

- Calibration for 0.9 - 1.7 μm

- λ/100 rms absolute accuracy over 400λ PtV dynamic range

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

- Up to 99Hz acquisition frequency

- External trigger capability

- Optimized for polychromatic and monochromatic beams over a wide spectral range

- C-mount compatible entrance aperture

- Easy to deploy with USB 3.0 connectivity

- Bundled with WaveView, the industry's most advanced wavefront metrology software

- Compatible with WaveKit (Software Development Kit) in C, MATLAB, and LabVIEW

HASO SWIR

High performance wavefront sensor for 0.9 - 1.7µm

Providing outstanding performance, the HASO Wavefront Sensor family is used in the most demanding applications in optical metrology, free-space communication and laser diagnostics worldwide. We offer a unique combination of expertise in high quality microlens production, software development and accurate factory calibrations. The new HASO SWIR provides a level of performance beyond comparison for applications over the short wavelength infrared range, 0.9 - 1.7 µm.

- ■ λ/100 rms absolute accuracy for incoherent and λ/50 rms for coherent light on a huge dynamic range (see the graph below)

- ■ Measurement up to 64 Zernike polynomials with individual accuracy better than 5 nm rms

HASO SWIR dynamic range (PtV) on a Ø7.44 mm pupil @ 1.55 µm
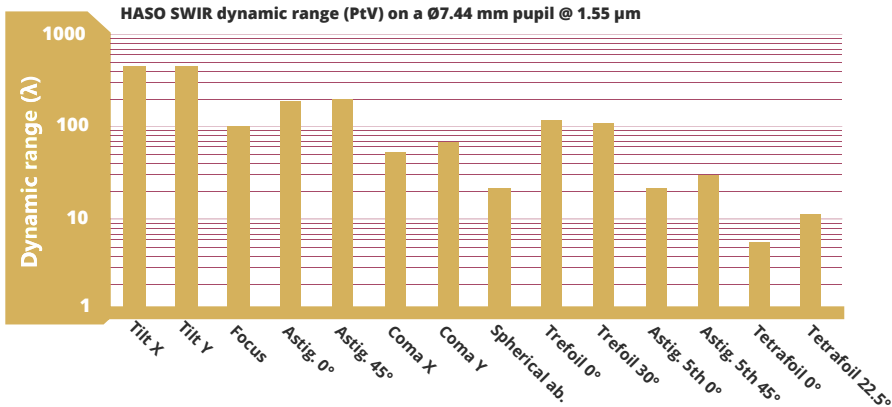
EXAMPLES OF APPLICATIONS

- ■ Checking beam collimation with an accuracy better than 300m radius of curvature
- ■ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of about λ/100 rms including astigmatism and high order aberrations
- ■ Control and adjustment of axial laser beam deviation better than 5µrad rms
- ■ Adaptive optics

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. WaveView development philosophy is based on tens of years of customer's feedback, improving the user experience at each version. Modules dedicated to PSF, Strehl ratio, MTF, M² are available.
- ■ WaveKit is a SDK in C, LabVIEW and MATLAB, providing the basis blocks on which one can build a fully customized software for specific HASO based applications or WaveView data processing routines. WaveKit is available on request.
- ■ Patented wavefront correction algorithms for intensity beam variations (laser, Gaussian, hyper Gaussian, apodized beams...)

SPECIFICATIONS

Aperture dimension	9.30 x 7.44 mm²
Number of microlenses	40 x 32
Tilt dynamic range	> ± 3 °
Focus dynamic range	± 0.042 m to ± ∞
Repeatability	~λ/200 rms
Wavefront measurement accuracy in absolute mode	~λ/100 rms
Spatial sampling	~232 µm
Maximum acquisition frequency	99 Hz
External trigger	Possible
Calibrated spectral range	0.9 - 1.7 µm
Dimension / Weight	75 x 78 x 63 mm³ / 250g
Working temperature	5 - 35°C
Interface / Power consumption	USB 3.0 / < 5W
Operation system / Software	Windows 7 & 10 / WaveView 3.1.8 or later
Minimum power*	0.3 pW

* on the largest circular pupil with 1s exposure duration