

HASO4 vis

NEW DESIGN
More robust
Easy integration

IDEAL WAVEFRONT
SENSOR FOR VISIBLE LIGHT

OUTSTANDING
COST EFFICIENCY

COMPACT
ROBUST AND VERSATILE

EASY TO USE
AND INTEGRATE



“An excellent instrument, indeed ! So powerful and easy to use.”

Bill Dougherty PhD, Senior Scientist
Applied Precision
A GE Healthcare Company

A UNIQUE SET OF ADVANTAGES

- 10 nm rms accuracy over the full visible spectrum (monochromatic or polychromatic)
- Optimized for large wavelength range (400 -700 nm)
- Patented technology for simultaneous and independent measurements of phase and intensity
- Acquisition 99 Hz
- External trigger capability
- Optimized for polychromatic beams : ideal for applications based on visible LED or white light lamps
- C-mount compatible entrance aperture
- Easy to deploy with USB 3.0 connectivity
- Bundled with WaveView the industry's most advanced metrology software
- Compatible with WaveKit (Software Development Kit) in C, MATLAB, and LabVIEW

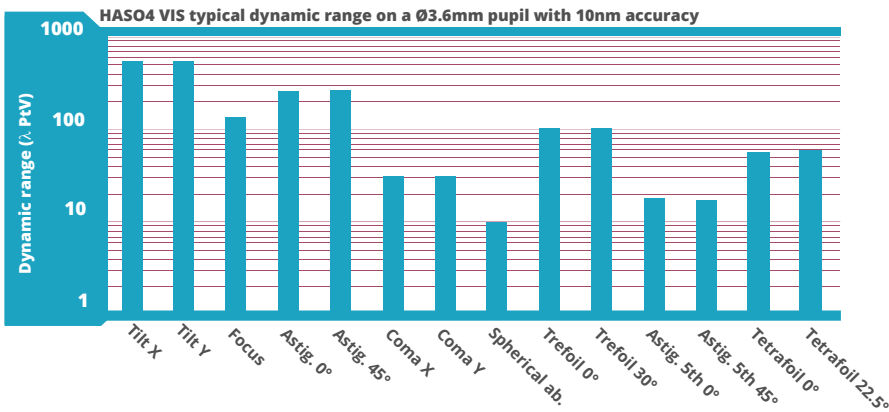
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HASO4 VIS : THE WAVEFRONT SENSOR FOR VISIBLE LIGHT

Providing outstanding performance, the HASO Wavefront Sensor family is used in the most demanding applications in optical metrology, microscopy and laser diagnostics worldwide. We offer a unique combination of expertise in high quality microlens production, software development and accurate factory calibrations. This allows the HASO4 VIS to provide a level of performance beyond comparison.

- 10nm rms absolute accuracy on a huge dynamic range (see the plot below)
- Patented wavefront correction algorithms for intensity beam variations (laser, Gaussian, hyper Gaussian, apodized beams...)
- Measurement up to 64 Zernike polynomials with individual accuracy better than 2nm rms
- Optimized for polychromatic applications



OUTSTANDING PERFORMANCE EXAMPLES WITH : HASO4 VIS

- Beam collimation with an accuracy better than 200m radius of curvature
- A 20mm focal length measurement with a sensitivity of 1µm rms
- Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of 10nm rms including astigmatism and high order aberrations
- Control and adjustment of axial laser beam deviation better than 5µrad rms
- 3D localization of a focal spot up to 0.1µm rms and 1µm rms for lateral and axial resolution respectively (0.1 NA beam)

SOFTWARE

- WaveView is the most advanced wavefront measurement and analysis software. It offers more than 150 functions 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, 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.

Aperture dimension	3.6 x 4.5 mm ²
Number of microlenses	32 x 40
Tilt dynamic range	> ± 3 °
Focus dynamic range	± 0.018 m to ± ∞
Repeatability (rms)	7.5 nm
Wavefront measurement accuracy in absolute mode (rms)	10 nm
Spatial sampling	~ 110 µm
Maximum acquisition frequency	99 Hz
External trigger	TTL signal
Wavelength range	400-700 nm
Dimensions (LxWxH) / weight	60 x 48 x 42 mm /185g
Working temperature	15 - 30° C
Interface / Power supply	USB 3.0 / 2.7 W via USB
Operating system	Windows 7 and 10

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