

HASO³™

WIDE
DYNAMIC RANGE

UNEQUALED
PRECISION

TRUE
ABSOLUTE MEASUREMENT



Imagine Optic's HASO family of wavefront sensors offer professionals with unsurpassed quality, precision and ease of use.

WHY TO BUY

- High-resolution - from 1,280 to 16,384 independent measurement points
- Simultaneous and independent measurement of both phase & intensity
- True absolute measurement
- Unbeatable accuracy and dynamic range

imagine[]optic™



EXCEPTIONAL RESULTS COME FROM ACCURATE MEASUREMENT

Exceptional results come from accurate measurement. We conceive, build and support our products to meet and exceed our customers' needs. Almost 20 years, Imagine Optic's wavefront sensors have become an industry standard for reliability and durability. Their independent yet simultaneous measurements of phase and intensity are key in consistently providing customers with the high-quality wavefront metrology results they can rely on.

HASO3 is based on our patented Shack-Hartmann technology. Fast, performing and easy to integrate, their insensitivity to vibration and compact design make them the ideal choice for demanding industrial and scientific applications. Even more, our HASO3 128 GE2 are equipped with Giga Ethernet ports for fast and easy control over local networks.

In laser and optical metrology, your HASO3 wavefront sensor used with WaveView software enables you to:

- Conduct zonal and modal wavefront reconstruction
- Calculate the PSF*, MTF* and Strehl ratio*
- Visualize the spot diagram and raw camera data
- Obtain the M²* parameter

For adaptive optics, HASO3 coupled with our WaveTune software, lets you:

- Perform precision metrology to control your active components including deformable mirrors and SLM
- Perfect your beam's shape and optimize its focal spot

For more information, and to find the Imagine Optic office or distributor nearest you, visit : imagine-optic.com/find.

* Sold separately.

	HASO 3 - 32	HASO 3 - 128 GE2
Aperture dimension	4.9 x 6.1 mm ²	14.6 x 14.6 mm ²
Number of microlenses	32 x 40	128 x 128
Tilt dynamic range	> ± 3 ° (520 λ)	> ± 3 ° (1500 λ)
Focus dynamic range - Minimum local radius of curvature	20 mm	15 mm
Focus dynamic range - Maximum NA	> 0.1	
Repeatability	< λ / 200	
Wavefront measurement accuracy in relative mode (rms) ¹	~ λ / 150	
Wavefront measurement accuracy in absolute mode (rms) ²	~ λ / 100	
Tilt measurement sensivity (rms)	3 μrad	< 1 μrad
Focus measurement sensivity (rms)	10 ⁻³ m ⁻¹	2.5.10 ⁻⁴ m ⁻¹
Spatial resolution	~160 μm	~110 nm
Working wavelength range	350 - 1100 nm	
Calibrated wavelength range	400 - 600 nm, 500 - 700 nm, 630 - 900 nm, 800 - 1100 nm	
Extended wavelength range	400 - 700 nm, 500 - 900 nm, 650 - 1100 nm	
Interface	FireWire	Giga Ethernet
Maximum acquisition frequency	50 Hz	7.5 Hz
Working temperature	15 - 30° C	
Dimension / Weight	75 x 62 x 68 mm / 510 g	115 x 51 x 60 mm / 400 g
Power supply	12 V / 6 W	

¹ Difference between the real wavefront and a reference wavefront obtained in similar conditions (10 λ of shift maximum).

² Wavefront as seen by the wavefront sensor. Performance is kept on the whole calibrated spectral range.

WaveView SOFTWARE

- HASO3 is delivered with WaveView, the most advanced wavefront measurement and analysis software. It offers more than 180 functions and tools optimized for a wide range of highly demanding applications. The latest version benefits of more than 15 years customer's feedback, it is regularly updated and constantly improved with new functionalities increasing the capability of the measurement and the ease of use of the wavefront sensor. Modules dedicated to PSF, Strehl ration, MTF, M² are available.
- WaveKit (SDK package) in C , LabVIEW and MATLAB enables the user to develop own interface for his customized experiment or OEM product.

www.imagine-optic.com