



# HASO

## SWIR

Wavefront sensor  
**The InGaAs**

High accuracy  
SWIR range  
Alignment-free



 compatible



# HASO SWIR +

**A great choice for short wavelength infrared applications, ideal for industry and laboratories.**

This generation features the new SpotTracker™ technology. It provides absolute wavefront and tilt information, eliminating alignment requirements for faster and easier implementation.



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 HASO SWIR performs multiple functions:

- + Quantify aberrations in optical systems for LIDAR, free-space communication, space and defense, etc.
- + Align the system to ensure that it performs at its best
- + Predict the performance of optical systems in terms of focusing capability (PSF) or imaging quality (MTF)
- + Verify that the optics comply with specifications
- + Directly measure the optical system's wavelength dependency
- + Drive a wavefront corrector to correct for system aberrations
- + Check whether the optical mount overly distorts the optics
- + Diagnostic of ultra-short-pulses with the Gated version

## FEATURES

- + Laser beam deviation control better than 3  $\mu$ rad RMS
- + Collimation diagnostic up to curvature radii over 300m
- + Live wavefront acquisition. Measurement accuracy  $\lambda/100$  RMS guaranteed for beams down to F/5
- + True tilt measurement, curvature, astigmatism and high-order aberrations quantification
- + Ultra-shot exposure time (Gated version)



Two options are available:

- + HASO **SWIR**
- + HASO **SWIR Gated** with ultra-short exposure time feature to synchronize with a pulsed laser.

# SPECIFICATIONS

## OPERATING SPECS

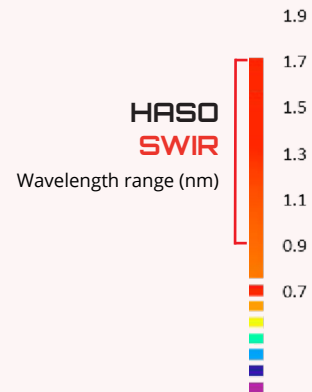
Aperture dimension	9.30 x 7.44 mm <sup>2</sup>
Number of microlenses	40 x 32
Maximum acquisition frequency	150 Hz
Calibrated wavelength range	0.9 - 1.7 μm
Minimum power	0.3 pW
External trigger	TTL signal
Operating system	Windows 10

## OPTICAL SPECS

Repeatability	λ/200 RMS
Absolute wavefront measurement accuracy	λ/100 RMS
Spatial sampling	~ 232.5 μm
Tilt dynamic range	> ± 3°
Focus dynamic range	± 0.017 m to ± ∞

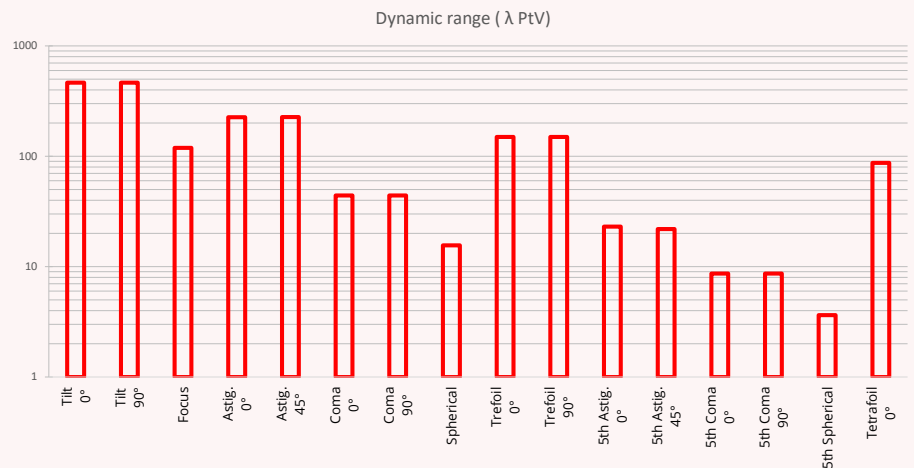
## MISC

Dimensions (Height x Width x Length)	75 x 78 x 63 mm <sup>3</sup>
Weight for USB version	250 g
Working temperature	15 - 30 °C
Interface	USB 3.0
Power consumption	< 5 W
Exposure time of Gated version	100 ns - 9 μs

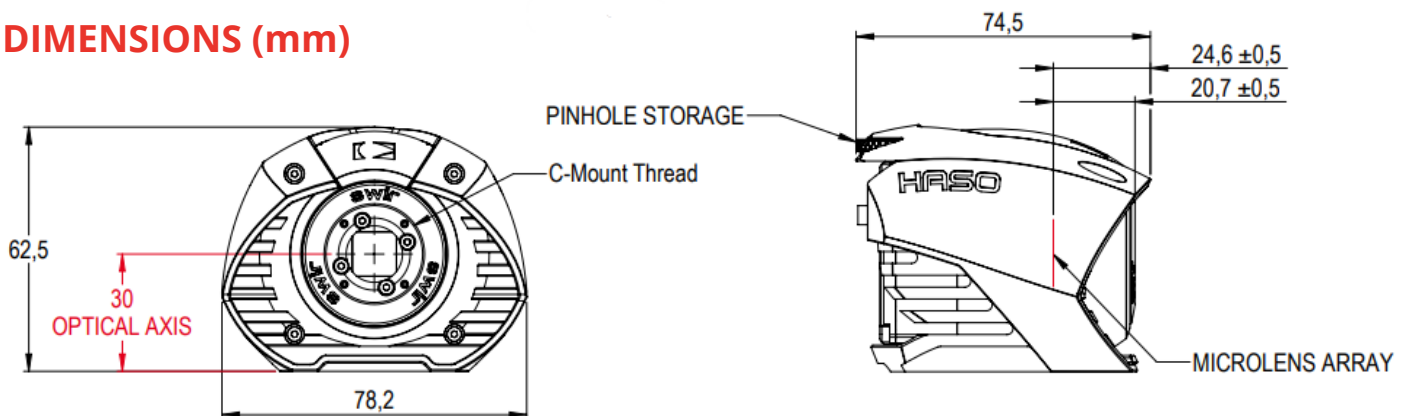


## HASO SWIR

Dynamic range at λ = 600 nm



## DIMENSIONS (mm)



# SOFTWARE

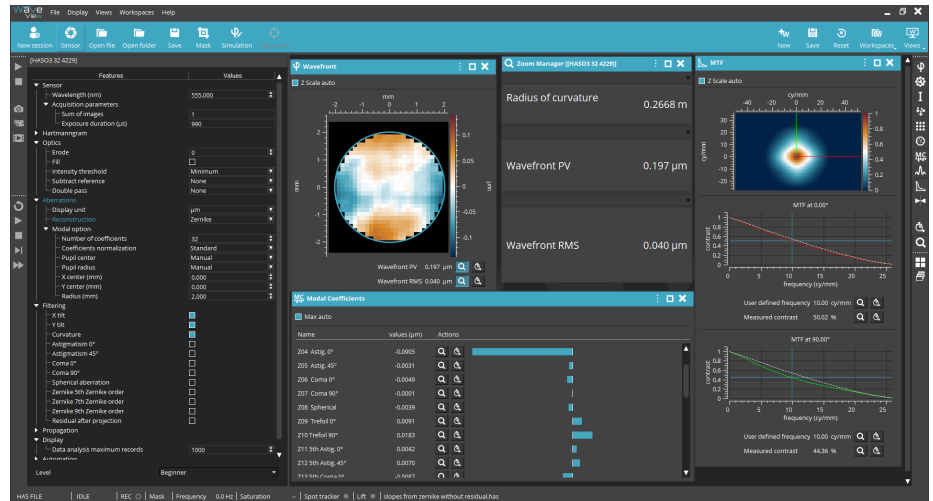
## WAVEVIEW™ Metrology Software

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



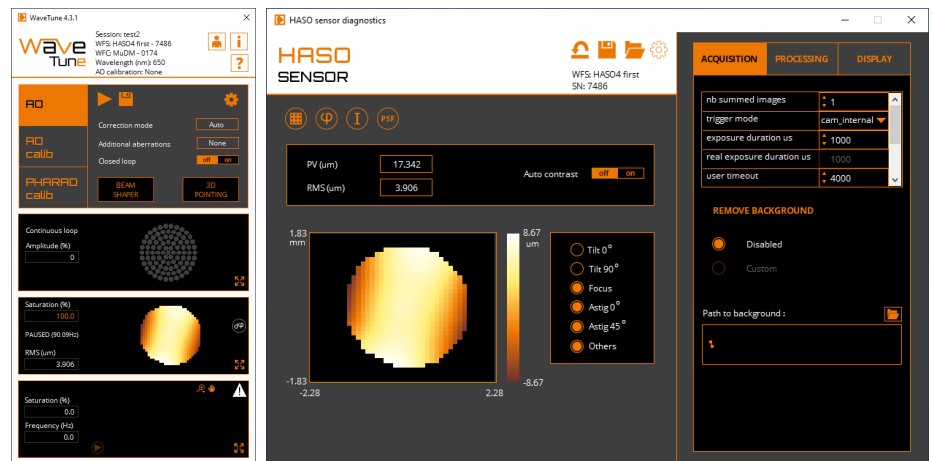
## WAVETUNE™ Adaptive Optics Software

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



## CONTACT US

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