LASER COMPONENTS®

# HASO BROADBAND

Wavefront sensor
**The Workhorse**

From UV to IR
Versatile
Alignment-free

compatible


imagine optic

HASO BROADBAND DATASHEET 2411



/ United Kingdom LASER COMPONENTS (UK) Ltd. Tel +44 1245 491 499 info@lasercomponents.co.uk www.lasercomponents.co.uk

# HASO BROADBAND

**A great choice for almost any lab or industrial application, the HASO BROADBAND is Imagine Optic's most versatile wavefront sensor.**

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 BROADBAND performs multiple functions :

+ Quantify the aberrations of an optical system
+ Align the system to ensure that it performs at its best
+ Predict the performance of optical systems in terms of focusing capability or imaging quality
+ Quantify the effects of temperature and gravity on system performance
+ Verify that the optics comply with specifications
+ Measure directly the optical system's wavelength dependency
+ Drive a wavefront corrector to rectify system aberrations
+ Check whether the optical mount overly distorts the optics

## FEATURES

+ Easy wavefront measurement on the whole spectrum of the sensor: 350 - 1100 nm with no wavelength dependency
+ Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of about λ/100 RMS, including astigmatism and high-order aberrations
+ Beam collimation with an accuracy better than 300 m radius of curvature
+ Gaussian beam measurement down to $1/e^4$ (contrast of 100)


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## SPECIFICATIONS*

**OPERATING SPECS**

| | |
|---|---|
| Aperture dimension | 6.9 x 5.1 mm² |
| Number of microlenses | 68 x 50 |
| Maximum acquisition frequency | 58 Hz (USB 3.0) or 30 Hz (with GigE converter) |
| Calibrated wavelength range | 350 - 1100 nm |
| Minimum power | 0.15 nW |
| External trigger | TTL signal |
| Operating system | Windows 10 & 11 |

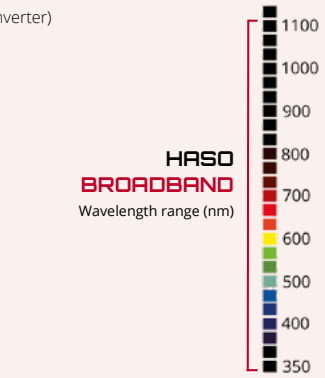
**OPTICAL SPECS**

| | |
|---|---|
| Repeatability | < λ/200 RMS |
| Absolute wavefront measurement accuracy | |
| • λ between 350-600 nm | ≤ 6 nm RMS |
| • λ between 600-1100 nm | ~ λ/100 RMS |
| Spatial sampling | ~ 100 µm |
| Local radius of curvature dynamic range | ± 0.008 m to ± ∞ |

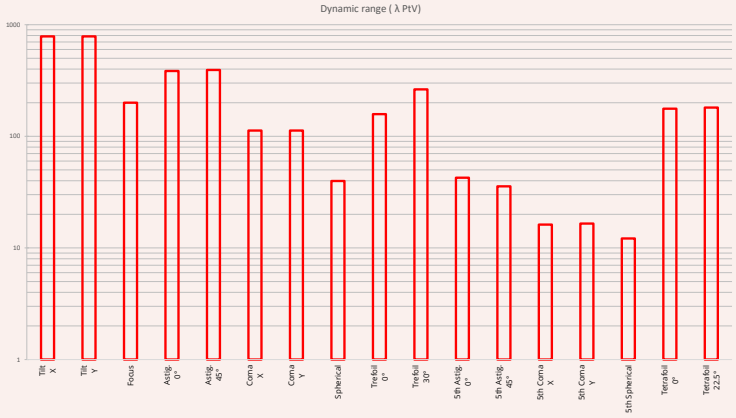
**MISC**

| | |
|---|---|
| Dimensions (Height x Width x Length) | 42 x 47 x 60 mm³ (USB 3.0) |
| Weight | 200 g |
| Working temperature | 15 - 30 °C |
| Interface | USB 3.0 or optional GigE converter |
| Power consumption | 3.1 W |

HASO BROADBAND
Wavelength range (nm)

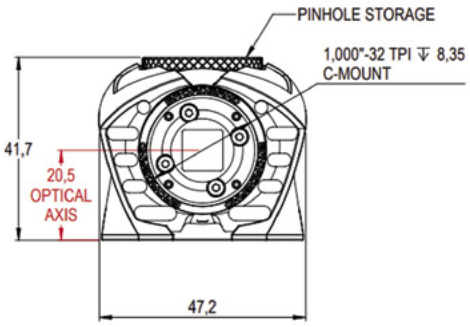


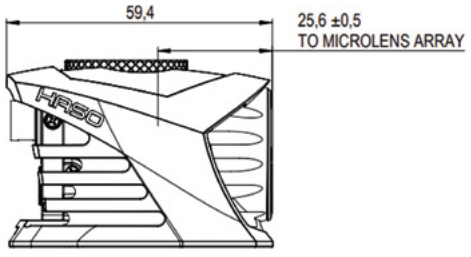

HASO BROADBAND
Dynamic range at λ = 635 nm




*Subject to changes without further notice

## DIMENSIONS** (mm)




**USB 3.0 model





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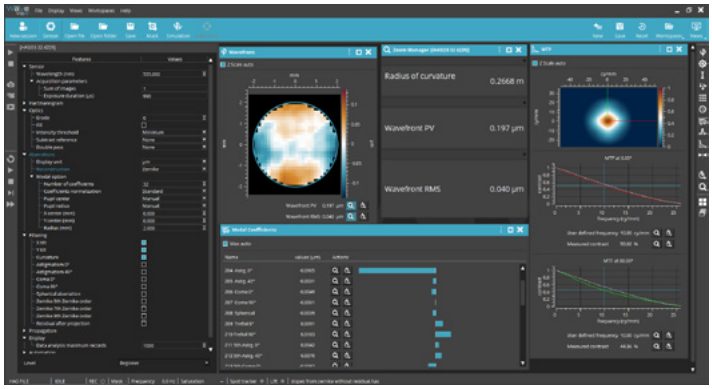
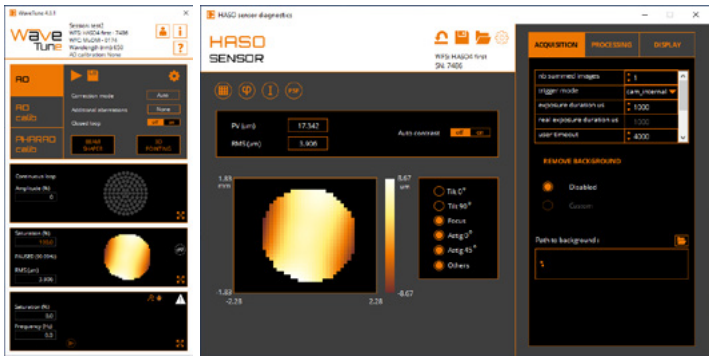
## SOFTWARE

**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, $M^2$ 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

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