# LIFT SWIR 160

Wavefront sensor
**The Prodigy**

Ultra-high resolution
SWIR range
Alignment-free

compatible


imagine optic

# LIFT SWIR 160

**A great choice for the most demanding SWIR optical metrology applications, the LIFT SWIR 160 wavefront sensor provides the highest resolution in SWIR.**

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 LIFT SWIR 160 performs multiple functions :

+ Optical manufacturing metrology
+ Complex optics characterization
+ Middle frequencies mirror surface characterization
+ Optical quality control, metrology (LIDAR, free space communication, Automotive, Space and defense)
+ Predict the performance of optical systems in terms of focusing capability or imaging quality
+ Drive a wavefront corrector to correct for system aberrations
+ Quantify the effects of temperature and gravity on system performance

## FEATURES

+ Direct wavefront acquisition of highly converging and diverging beams with an accuracy of λ/100 RMS, including astigmatism and high-order aberrations, and many other parameters, making it the perfect instrument for any complex optics alignment
+ Beam collimation with sensitivity > 1 km radius of curvature
+ Control and adjustment of axial laser beam deviation > 3 µrad RMS
+ Complex optics characterization in single or double path configuration in combination with R-FLEX2 metrology systems or R-FLEX LA metrology platforms
+ 3D MTF measurements

# SPECIFICATIONS*

### OPERATING SPECS

| | |
|---|---|
| Aperture dimension | 9.3 x 7.4 mm² |
| Phase sampling | 160 x 128 |
| Maximum acquisition frequency | 150 Hz (USB 3.0) or 49 Hz (with GigE converter) |
| Calibrated wavelength range | 980 - 1 650 nm |
| Minimum power | 1 pW |
| External trigger | TTL signal |
| Operating system | Windows 10 & 11 |

### OPTICAL SPECS

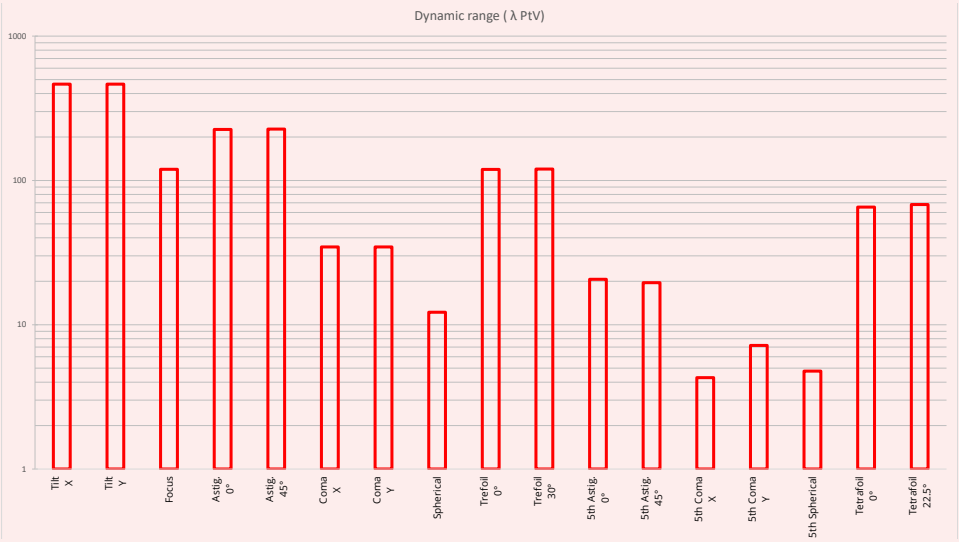
| | |
|---|---|
| Repeatability | λ/200 RMS |
| Absolute wavefront measurement accuracy | λ/100 RMS |
| Spatial sampling | 58 µm |
| Local radius of curvature dynamic range | ± 0.040 m to ± ∞ |
| Curvature measurement accuracy | 5 mδ |

### MISC

| | |
|---|---|
| Dimension | 75 x 78 x 63 mm³ (USB 3.0) |
| Weight for USB version | 250 g |
| Working temperature | 15 - 30 °C |
| Interface | USB 3.0 or optional GigE converter |
| Power consumption | < 5 W |

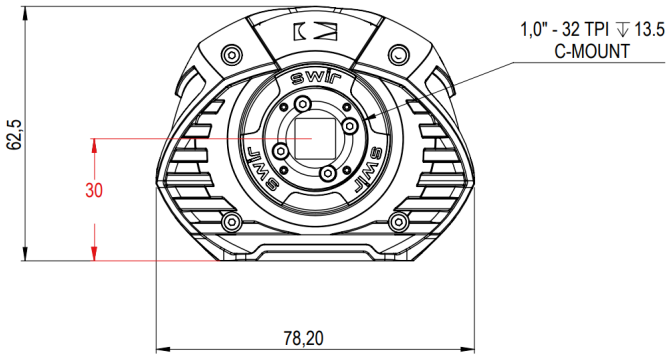
**LIFT SWIR 160**
Wavelength range (nm)

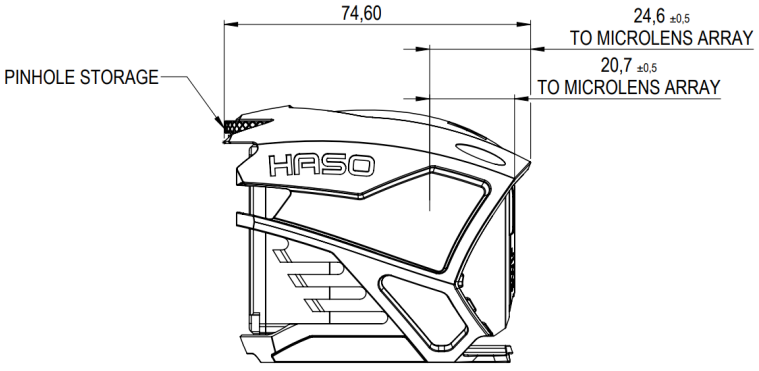

**LIFT SWIR 160**
Dynamic range at λ = 1550 nm




*Subject to changes without further notice
/!\ Acquisition & processing frequencies depend on computer

# DIMENSIONS** (mm)




**USB 3.0 model

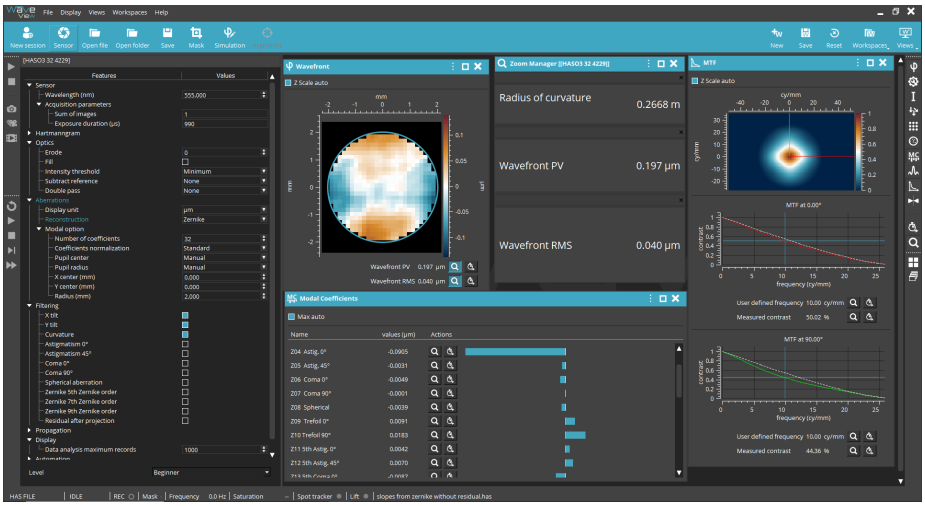
# SOFTWARE

## 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, M², Strehl ratio and advanced Zernike
+ Optional SDK in C/C++, LabVIEW and Python

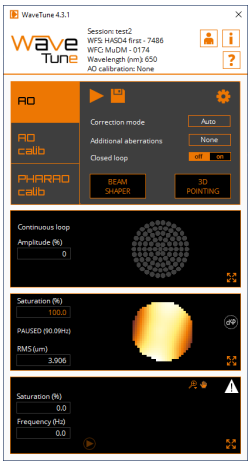


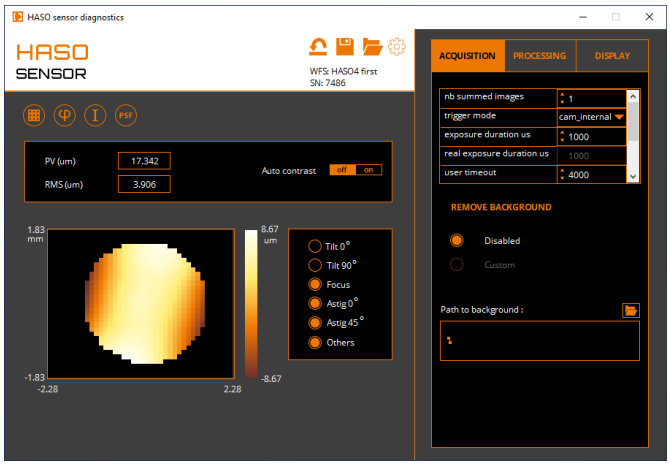

## WAVETUNE™
## Adaptive Optics Software

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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