

MESO

Interferometry Applications

Metrology solution

Simpler, faster & more robust

Insensitive to vibrations

At-wavelength metrology

Parallel optics testing



MESO +

New metrology solution for easy at-wavelength testing of flat surfaces in any environment

MESO is the perfect tool for the characterization of:

- + Parallel Optics
- + Screens
- + Filters, dichroics
- + Mirrors
- + Beamsplitters
- + Windows, substrates
- + Corner cubes
- + Crystals
- + Rods, disks
- + Glass wafers
- + Displays
- + Machined surfaces
- + Windshields
- + Prisms
- + Large lenses
- + Optical systems, beam expanders

APPLICATIONS

- + In situ process control
- + Thin Parallel Optics characterization
- + Transmitted wavefront quality (TWE)
- + Surface shape & flatness measurement (RWE)
- + Large optics testing
- + Wedge measurement

FEATURES

- + Insensitive to vibrations thanks to fast single shot acquisition and the lack of need for a reference arm for comparison. It allows for a standalone setup compatible with shop floor metrology!
- + At-wavelength sample testing due to its achromatic system embedding up to 4 light sources, automatically controlled by the User Interface.
- + Insensitive to reflections from the back surface of the sample thanks to a unique patent pending method. No surface preparation of the sample is needed, avoiding added steps that could disturb the metrology and put the sample at risk.
- + Smart maintenance: On-site user install or replacement of sources with no opening of optical areas and no realignment needed.

MESO SWIR



SPECIFICATIONS*

OPERATING SPECS

Phase point resolution
 Minimum exposure time
 Calibrated range
 Working output wavelengths
 Output polarization
 Operating system & software

VIS VERSION

680 x 500
 27 ms
 405 nm to 830 nm
 405, 488, 520, 635, 785, 830 nm custom
 optional linear, circular
 Windows 10 & 11,
 WAVESURF™ acquisition control & analysis software

SWIR VERSION

160 x 128
 27 ms
 1050 nm to 1700 nm
 1050, 1300, 1550 nm custom
 optional linear, circular
 Windows 10 & 11,
 WAVESURF™ acquisition control & analysis software

OPTICAL SPECS

Optical configuration
 Test beam diameters

double-pass
 optical zoom
 from 1.5" (38.1 mm) up to 6" (152 mm)
 4.25" (108 mm)

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 optical zoom
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 4.25" (108 mm)

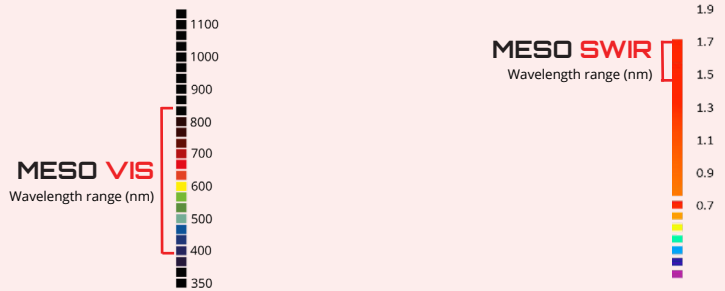
MISC

Dimensions (Height x Width x Length)
 Weight
 Mounting configuration
 Camera
 Interface
 Warranty
 Vibration isolation
 Compressed air
 Sample reflectivity
 Sample min. thickness
 RMS wavefront repeatability**
 Accessories

29.6 x 31 x 78.9 cm³
 27 kg
 horizontal or vertical
 4096 x 3000 pixels, 10 bits
 USB 3.0
 1 year system & laser standard, extendable
 not necessary
 not necessary
 1% - 100 %, no attenuation required
 100 μm
 1 nm
 High performance Dell™ computer
 24" touchscreen

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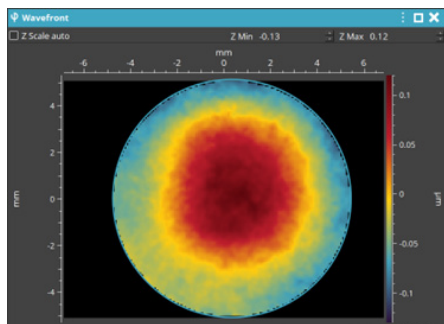
** From a set of 36 measurements on a Ø4" diameter flat mirror, each of them averaged 16 times, a synthetic reference is defined by the mean of the 18 odd measurements.
 The RMS wavefront repeatability is then defined by the mean RMS difference plus 2x the standard deviation of the difference between the 18 even measurements and the synthetic reference.



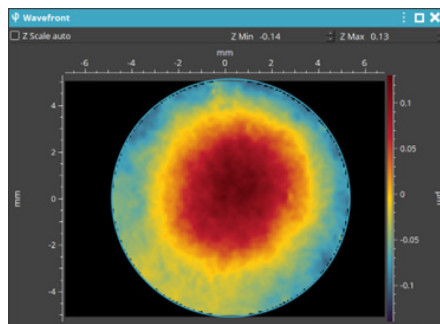
*Subject to changes without further notice

ACHROMATISM

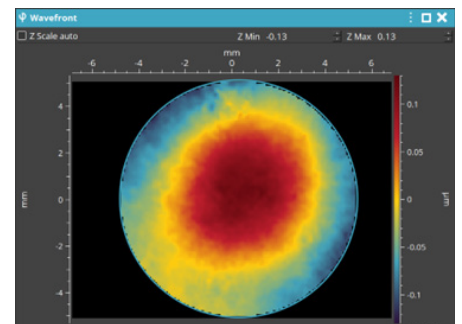
Plane optics measured on Ø4" diameter at 3 wavelengths: wavefront error variation is less than 4 nm RMS (< I/150)



wavelength: 402 nm
 wfe: 53 nm RMS



wavelength: 635 nm
 wfe: 57 nm RMS



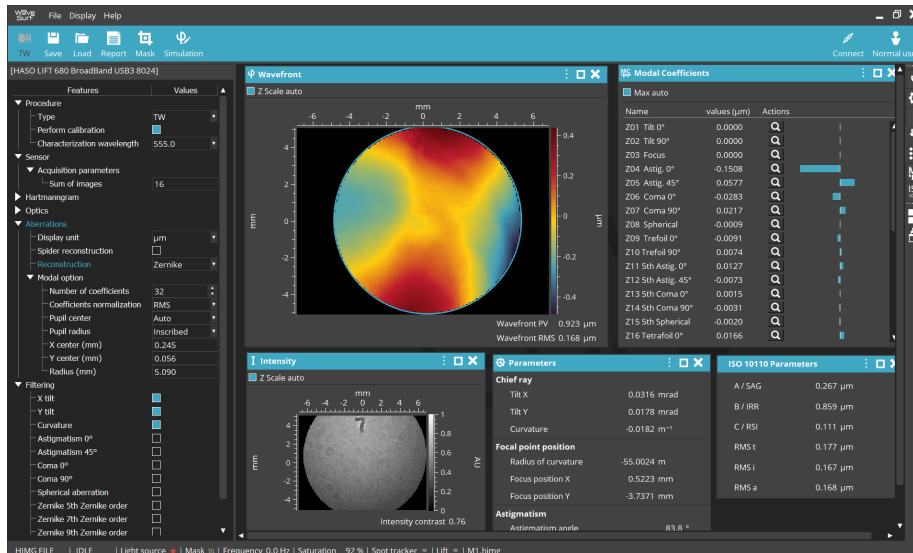
wavelength: 785 nm
 wfe: 57 nm RMS

SOFTWARE

WAVESURF™

Easy-to-use interface

WAVESURF™ allows operators and engineers in manufacturing environments to perform wavefront and surface characterization of flat optics and large lenses with just a few clicks. Scripted testing procedures guide users through all the steps. It makes control easy, automated and error-proof.



- + Touchscreen interface control
- + Scripted testing procedures guide the user through all the steps
- + Automated control of up to 4 embedded wavelengths
- + Automated control of test diameter (optical zoom)
- + Complete automated test report
- + ISO10110 standard compliance
- + Data format compatible with CODE V® and MetroPro™

WHITE PAPERS

- + Shop floor measurement: vibration-proofed solutions for optical metrology
- + At-wavelength metrology for optical systems and surfaces
- + Parallel optics testing: simultaneous characterization of both optical faces in laboratory and manufacturing conditions



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