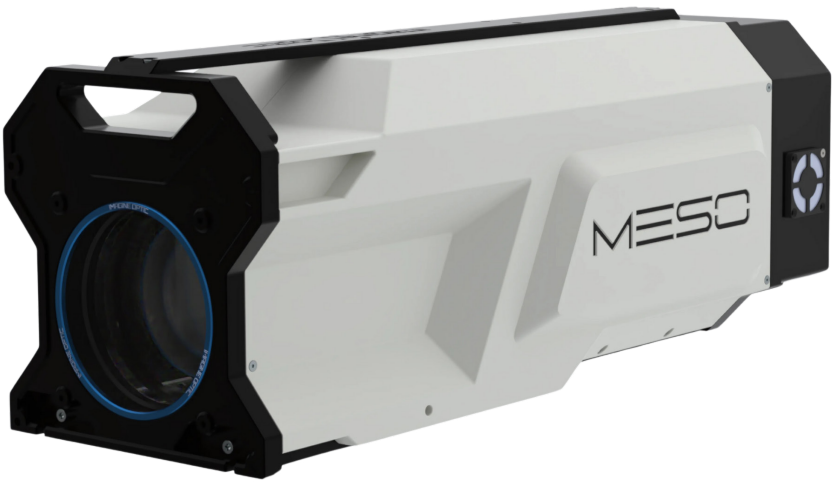
MESO

Interferometry Applications

Metrology solution
Simpler, faster & more robust

Insensitive to vibrations
At-wavelength metrology
Parallel optics testing



imagine optic

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.

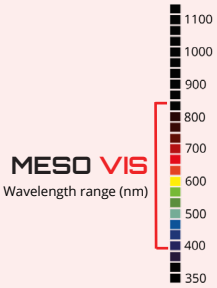
MESO SWIR

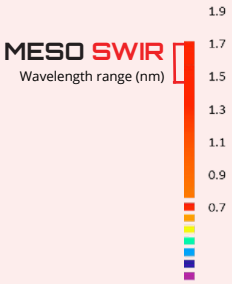
SPECIFICATIONS*

OPERATING SPECS	VIS VERSION	SWIR VERSION
Phase point resolution	680 x 500	160 x 128
Minimum exposure time	27 ms	37 ms
Calibrated range	405 nm to 830 nm	1050 nm to 1700 nm
Working output wavelengths	405, 488, 520, 635, 785, 830 nm custom	1050, 1300, 1550 nm custom
Output polarization	optional linear, circular	optional linear, circular
Operating system & software	Windows 10 & 11, WAVESURF™ acquisition control & analysis software	Windows 10 & 11, WAVESURF™ acquisition control & analysis software
OPTICAL SPECS		
Optical configuration	double-pass	double-pass
Test beam diameters	optical zoom from 1.5" (38.1 mm) up to 6" (152 mm)	optical zoom from 1.5" (38.1 mm) up to 6" (152 mm)
Optical axis	4.25" (108 mm)	4.25" (108 mm)
MISC		
Dimensions (Height x Width x Length)	29.6 x 31 x 78.9 cm^3	29.6 x 31 x 78.9 cm^3
Weight	27 kg	27 kg
Mounting configuration	horizontal or vertical	horizontal or vertical
Camera	4096 x 3000 pixels, 10 bits	640 x 512 pixels, 10 bits
Interface	USB 3.0	USB 3.0
Warranty	1 year system & laser standard, extendable	1 year system & laser standard, extendable
Vibration isolation	not necessary	not necessary
Compressed air	not necessary	not necessary
Sample reflectivity	1% - 100 %, no attenuation required	1% - 100 %, no attenuation required
Sample min. thickness	100 µm	100 µm
RMS wavefront repeatability**	1 nm	1 nm
Accessories	High performance Dell™ computer 24" touchscreen	High performance Dell™ computer 24" touchscreen

** 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.

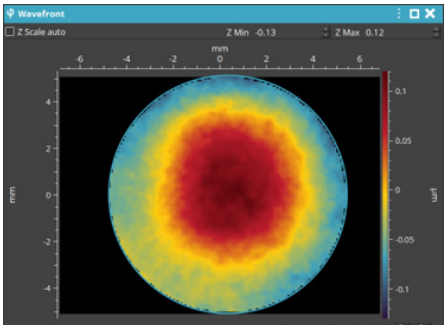
*Subject to changes without further notice



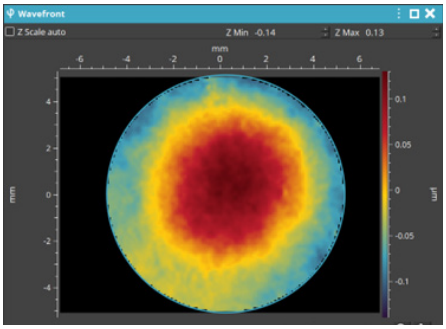


ACHROMATISM

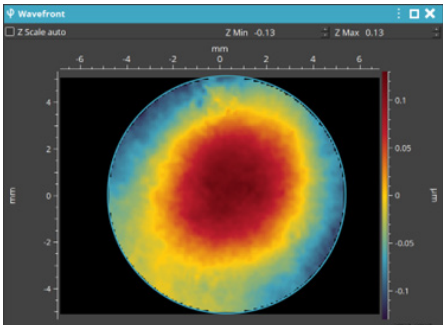
Plane optics measured on Ø4" diameter at 3 wavelengths: wavefront error variation is less than 4 nm RMS (< l/150)



wavelength: 402 nm
wfe: 53 nm RMS



wavelength: 635 nm
wfe: 57 nm RMS



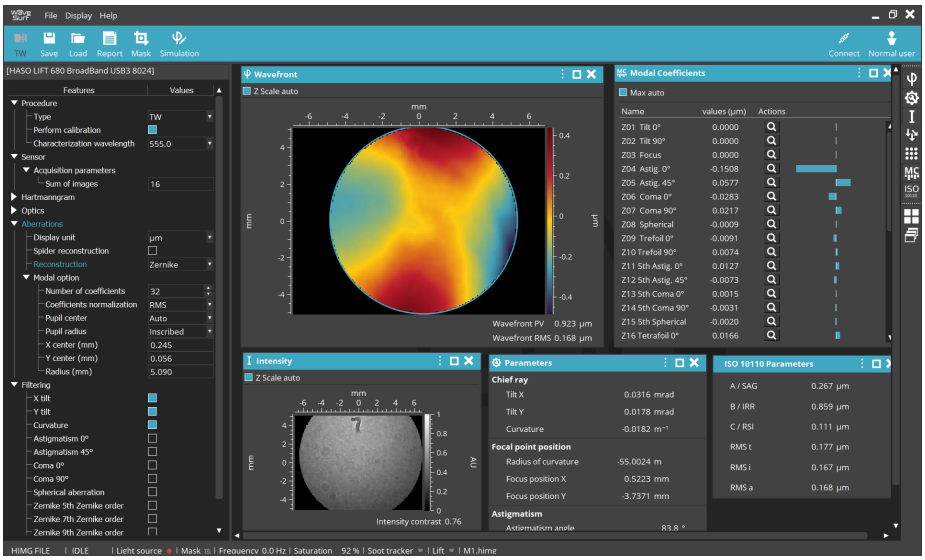
wavelength: 785 nm
wfe: 57 nm RMS

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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