

Wavefront Sensors and Software

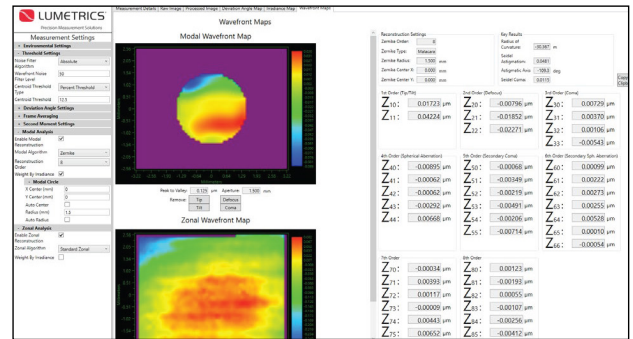
Lumetrics, Inc. has applied the venerable Shack-Hartmann sensor to a range of wavefront measurement systems ideal for analyzing optics-related products and materials, from contact lenses to intraocular lenses to transmitted wavefront error, optical alignment and phase parameters. Used in an array of wavefront metrology applications, Lumetrics has applied the technology in unique ways and added industry-leading hardware and software features to our systems that offer you significant advantages over our competitors.

Lumetrics Wavefront Sensors (LWS)

RAPID TESTING OF LENS STACK QUALITY

The sensor is an easy-to-use and customizable design working with our proprietary hardware and software that provides instantaneous absolute difference and is ideal for rapid testing of optical stack quality. Developed and rigorously tested by Sandia National Labs scientists, Lumetrics Wavefront Sensors are versatile and configurable to fit any measurement needs.

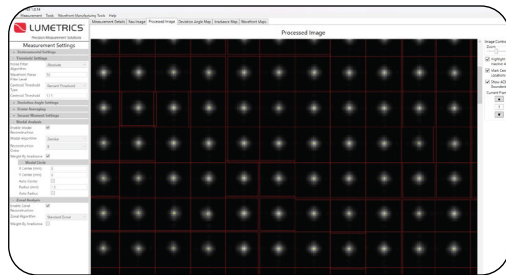
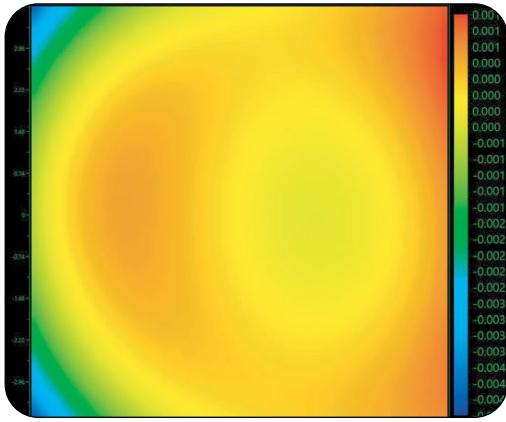
- Single pass simplicity
- Vibration isolation not required
- Easy integration with collimated source
- Interferometer level sensitivities
- Configurable to your needs
- LAN Communication
- Customizable lenslets
- Integrated CMOS Camera



	Visible	Visible&IR
Sensor	Si	InGaAs
Shutter	Global	Global
Sensor Cover Glass***	Yes	Yes
Camera Frame Rate	50 Hz	94 Hz
Resolution (H x V)	1920px x 1200px	1280px x 1024px
Pixel Size (H x V)	5.86 x 5.86	5 x 5
Total Lenslet Area	7mm x 7mm	5.1mm x 5.1mm
Wavelengths	320-1100 nm	390-1700 nm
Bit depth	12	12

Nominal Specs					
Lenslet Effective Focal Length	2.1mm	4.6mm	8mm	15.5mm	25mm
Lenslet Diameter*	100	108	144	198	252
Lenslet Array	108x108	68x68	51x51	37x37	29x29
Wavefront Accuracy/Sensitivity** (@ 620nm)	1/30 wave	1/50 wave	1/100 wave	1/150 wave	1/200 wave
Wavefront Range	120 waves	80 waves	60 waves	40 waves	30 waves

*Each lenslet extends its refractive surface to all corners of the square area it occupies, resulting in the most efficient beam focusing with no corner losses.
 **Maximum single frame capability, built-in averaging may improve the best possible accuracy and sensitivity. Accuracy may be limited by the test and measurement setup.
 ***Cover glass removed option available.



Wavefront Control Center

IMPROVE YOUR WAVEFRONT MEASUREMENT CAPABILITIES

Lumetrics Wavefront Control Center software is offering a more efficient setup evaluation and improved visibility of real-time parameters. Focusing on several key elements, Wavefront Control Center software has a simplified single-window interface that is intuitive and easy to use.

- Zernike polynomial coefficients (modal analysis)
- Zonal phase map
- Selectable analysis wavelength (vis, IR)
- Selectable or automatic analysis aperture and center
- Masking
- Reference file generation for custom setup
- API (examples in Python, Matlab, .NET)

The wavefront sensor when combined with wavefront control software and Wavefront API provides the end user with an unparalleled product suite.



Wavefront-API

The Wavefront API provides a 100% customizable and easy-to-learn API layer for any and all Wavefront programming needs. This allows users to create applications including:

- Wavefront profile
- Deviation angles
- Raw and processed images
- Centroid locations

ABOUT LUMETRICS

Since 2003, Lumetrics has provided precision measurement solutions to leading-edge companies throughout the world. Our systems are deployed in quality, R&D labs, and production floors.

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