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WaveSensor®

Shack-Hartmann Wavefront Sensors with a Wide Dynamic Range

WaveSensor® is the Shack-Hartmann sensor developed by TRIOPTICS providing real time-wavefront measurement and analysis of spherical and aspherical optics.

Key Features

- Maximum dynamic range up to 2000 λ and accuracy up to < λ /20 (depending on model)
- Lenses up to diameter 15 mm (without additional optics)
- Surface topography measurement up to 7° deviation from the sphere (with optional reflex module)
- Compact and robust design
- Flexible wavefront measurement in the laboratory and in production
- Integration into existing laboratory or production facilities
- Communicates WaveMaster® software via CameraLink or IEEE 1394b

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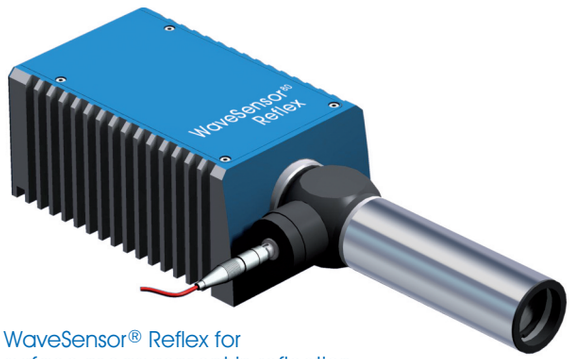
Applications

Range of Applications of Shack-Hartmann Sensors

- Measurement of the wavefront (PV, RMS)
- Determination of the Zernike coefficients
- Measurement of the Point Spread Function (PSF)
- Measurement of the Modulation Transfer Function (MTF)
- Measurement of the Strehl ratio
- Wedge angle



WaveSensor® Reflex for
surface measurement in reflection

Software

Wavefront Measurement with Shack-Hartman Sensors

The WaveSensor® software is clearly structured, easy to use and contains all functions to measure and analyze plano, spherical and aspherical samples with the WaveSensor®.

The software communicates with the Shack-Hartmann sensor and analyzes the measured wavefront in real time.

Advantages of the Software

- Menu-driven operator guidance
- Simple and intuitive measurement and analysis of wavefronts and surfaces
- One software package for everything: Data collection, data calculation, calibration, display of data, real-time analysis
- Load theoretical data from ZEMAX and Code V and compare in real time during measurements

Specifications

	Unit	WaveSensor® 150	WaveSensor® 100	WaveSensor® 80	WaveSensor® 60
Sensor area	mm	15x15	15x15	6.6x8.8	4.8x6.4
Lateral resolution		138x138	100x100	60x80	45x60
Wavefront accuracy		<λ/20 (RMS)	<λ/20 (RMS)	<λ/20 (RMS)	<λ/20 (RMS)
Wavefront repeatability		<λ/200 (RMS)	<λ/200 (RMS)	<λ/200 (RMS)	<λ/200 (RMS)
Dynamic range	λ	2000	>1500	>1000	>800
Measurement frequency	Hz	up to 12	up to 12	up to 16	up to 16
Wavelength range	nm	405-1100	405-1100	405-1100	405-1100

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