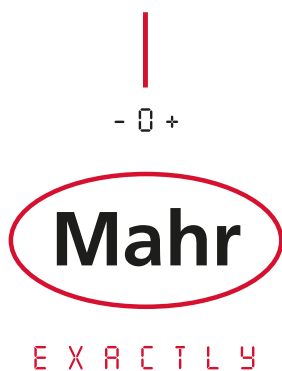


MarOpto



MarOpto TWI 60 Tilted Wave Interferometer for Fast and Flexible Measurement and Analysis of Aspheric Lenses



- Flexible interferometric measurement of aspheric lenses without CGH
- Measurement without any need for lateral or axial stitching
- Short data acquisition time approx. 30 s
- Test beam 100 mm
- Allowed aspheric departure from best-fit sphere up to approx. 1.5 mm

MarOpto TWI 60

Description

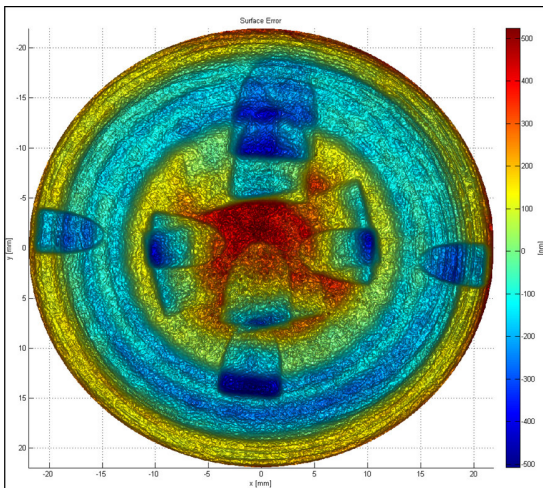
System

The Tilted Wave Interferometer (TWI) constitutes a novel, promising and highly flexible interferometer to measure aspheres quickly and with high precision.

The figure below shows the measured surface error of the A5 demonstrator asphere (clear aperture 50 mm, best-fit radius 40.8 mm, best-fit deviation 600 μm , gradient deviation 8°).

The lateral resolution of about 30 μm can be achieved. Within a data acquisition time of approx. 30 seconds an entire asphere surface can be measured with high lateral resolution and low measurement uncertainty. Most importantly, no CGH or stitching is necessary.

Analysis



Technical Data

Resolution

Lateral < 30 μm (2048 x 2048 Pixel)
Axial < 1 nm

Reproducibility

< 20 nm (PV); < 1 nm (RMS)

Accuracy

< \pm 25 nm (PV)

Size of image field

\varnothing 60 mm with f/0.74 objective
 \varnothing 80 mm with f/1.35 objective

Workpiece

Geometry Aspheric lens
Diameter max. 200 mm
High max. 100 mm
Reflectivity 0.5 to 100 %
Weight max. 15 kg with mount
Interface Cylinder
Diameter \varnothing 25 mm

Max. aspheric departure

ca. 1.5 mm

Max. gradient

10°

Calibration

Validity of the calibration 2 weeks in 2-shift operation
Calibration duration < 1 hour / objective

Acquisition time

ca. 30 s

Evaluation time

< 2 min

Mount

hydraulic expansion chuck

\varnothing 25 mm



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