

kolibri LensShape III

Optical 3D measurement system for inspection of aspheres

Conceptual design

- Automated optical 3D digitizer for non-contact shape record of aspheres, concave and convex spheres, cylinder lenses etc.
- Special correction of lens aberration effects for accuracy in the lower micrometer and sub-micrometer range
- Quality assurance by comparison with mathematical master surface
 - Determination of deviations over the entire measurement object
 - Determination of radial error
 - Analysis of deviation for matters of reverse engineering
- Minimizing of error propagation by pivoted measuring object
- Very robust against environmental influences (long term shifts) because of self-calibration
- High ability for reproduction because of predefined measuring schemes
- Easy handling

Fields of application

- Testing the contour accuracy of optical lenses, esp. injection-moulded lenses and blank-moulded precision spheres and aspheres
- Universal and fast inspection of milled aspheric components in production process
- Measuring of precision tools and flat industrial parts

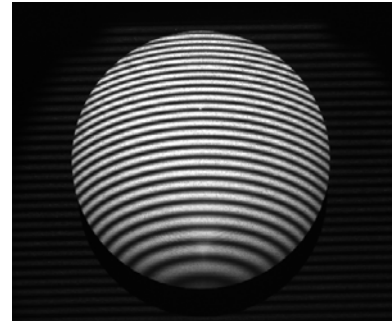
Measuring principle

- Triangulation with the help of digital fringe projection in combination with photogrammetric methods
→ Phasogrammetry

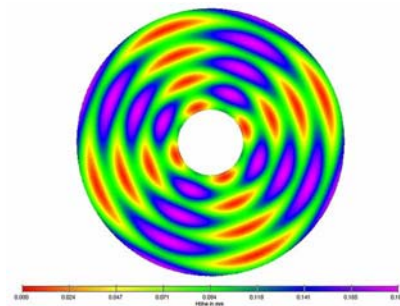
Technical parameter

- Measurement volume: max. Ø 70mm, height 20mm
- Max. inclination of normal vector: $\pm 60^\circ$
- Measurement time: ≤ 2 min
- Surface profile error (pv): $\leq 2 \mu\text{m}$
- Dimensions: 530 x 400 x 480 mm³

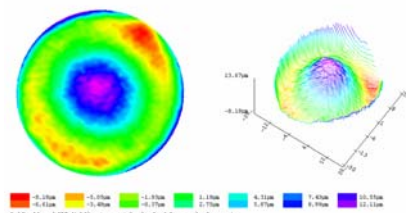
Competence in optical measuring technology



Projected fringe pattern on convex lens



Sinusoidal profile of a free form



Display of deviation of a scanned PMMA- lens against the master shape



IVB GmbH

Tatzendpromenade 2
07745 Jena, Germany
Tel.: +49 (0)3641 / 609794
Fax: +49 (0)3641 / 609795
Email: info@ivb-jena.de
web: www.ivb-jena.de