BERLINER GLAS

BERLINER GLAS GROUP

Spherical Optics

Product

BERLINER GLAS manufactures precision spherical optics (lenses, achromatic lenses, encapsulated systems, mirrors) for applications in

- laser technology
- reproduction engineering
- metrology
- research and other fields

Material

Optical materials such as quartz, glass ceramics, borosilicate glass, CaF2, MgF2 and filter glass are used.

Specifications

- **Dimensions:** Up to Ø 500 mm
- **Radii:** 1.2 mm up to ∞
- **Centering accurancy:** Up to 10“ according to ISO 10110, Part 6 or DIN 3140, Part 6
- **Fitting error:** Up to λ/30 measured at 632.8 nm depending on the critical area in reflection and wavefont depending also on material.
- **Evaluation:** According to ISO 10110, Part 5 or DIN 3140 Part 5
- **Surface defects:** ISO 10110, Part 7 or DIN 3140, Part 7 up to 5/1 x 0.025 depending on the critical area
- **Micro-roughness:** RA up to 2 Å, depending on the material
- **Center thickness tolerance:** +/-5 µm
- **Diameter tolerance:** +/- 5 µm

Quality Assurance

In addition to permanent process and production control there is a final inspection for which sophisticated measurement devices are available.

Notes

We offer a special know-how in optical cementing, lacquered diaphragms, lacquered circumferences and special shaping of contours.

Measuring Instruments for Quality Assurance

Wavefront:	Interferometer 4-24”, Shack-Hartmann-Wavefront-Sensor (UV and DUV)
Resolution:	Computer-supported MTF measurement
Centering:	Objective metrology station, Laser centering station
Angle Precision:	Goniometer, interferometer
Transmission/ Reflection:	Spectrometer, diode array
Surface defects:	Automatic microscope
Micro-Roughness:	White light interferometer, AFM
Dimension:	3D Coordinate-measurement, caliper, CCD-Micrometer, Stitching interferometer

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