



Spherical Optics.

Ultimate imaging and beam quality.

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SwissOptic, a BERLINER GLAS GROUP company, manufactures precision spherical optics (lenses, achromatic lenses, encapsulated systems, mirror) for applications in laser technology, medical technology, semiconductor, metrology, research and other fields.

Specifications*

Material	Optical glass, quartz, glass ceramics, ceramics, borosilicate glass and filter
Dimensions	Ø 10 – 350 mm
Radii	5 mm up to ∞
Centering accuracy	10"
Defects in shape	$\lambda/100$ PV, measured at 546 nm
Micro roughness	0.2 nm
Surface defects	5/1 x 0.025
Center thickness tolerance	$\pm 3 \mu\text{m}$
Diameter tolerance	$\pm 3 \mu\text{m}$
Laser damage threshold	20 J/cm ²

Quality Assurance

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

Notes

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

Metrology

Wavefront	Interferometer (4 – 24"), Shack-Hartmann-wavefront sensor (UV, DUV, VIS, NIR), radii metrology, multiple area metrology, Stitching-interferometer
Form deviation	2D coordinate measuring devices, caliper, CCD micrometers, interferometer
Angle precision	Goniometer, interferometer, auto-collimators
Transmission/reflection	Spectral photometer, diode array
Surface defects	Various microscopic methods
Micro roughness	White light interferometer, atomic force microscope
Imaging/performance/resolution	Computer-supported MTF measurement, microscopic image resolution
Centering	Objective metrology system, laser centering station
Fine correcting procedure	Mechanical fine correction, ion beam process, robotic polishing, magnetorheological finishing
Additional functional measurement	Assembly-specific metrology station, environmental/climatic test acc. to ISO and MIL standards, abrasion and adhesion, various chemical and resistance testing, autoclaving, surface measurement, resistance measurement

* The following error and tolerance data indicate possible limit values. Specified and assessed according to ISO/MIL/DIN.