



Prisms & Prism Systems.

Light Refraction and Reflection Lead to the Goal.

Prisms & Prism Systems.

BERLINER GLAS produces prism optics and prism systems to the strictest tolerances according to ISO 10110 or customer specification for the following applications: semiconductor industry, laser technology, space technology, metrology and medical technology.

Specifications*

Prisms

Materials	Optical glass, quartz glass, glass ceramic and special materials
Dimensions	≥ 2–500 mm, other dimensions on request
Flatness	up to $\lambda/100$ PV (@633 nm)
Angular accuracy	≤ 0.5"
Pyramidal error	≤ 1"
Deflection accuracy	≤ 0.5"
Roughness	≤ 0.2 nm rms
Surface defects	From 5/1 x 0.004 (depending on the material)

Additional specifications for prism systems

Spectral range	193–5,000 nm
Wave front error	$\lambda/50$ PV (@633) Low-stress gluing techniques, deterministic system corrections
Assembly	Fine cemented/scattered in air-conditioned clean rooms
Active adjustment	With its own high-precision assembly tool with collimator or interferometer (≤ 0.5" deflection accuracy)

Fine Correcting Procedures

- Mechanical fine correction
- Ion beam figuring
- Portal-/robot polishing
- Magnetorheological finishing (MRF)
- Active system correction on an adjustment surface (deflection angle and wavefront deformation)

Prism Assemblies

Beam splitting prisms

- Cemented, scattered

Assemblies

- High quality cemented prism assemblies with the highest wavefront and deflection accuracy

Metrology

Wavefront	Interferometer (4–24"), Shack-Hartmann-wavefront sensor (UV, DUV, VIS, NIR), multiple area metrology, stitching-interferometer
Form deviation	3D coordinate measuring devices, caliper, CCD micrometers, interferometers
Angle precision	Goniometer, interferometer, auto-collimators
Surface defects	Various microscopic methods
Roughness	White light interferometer, atomic force microscope
Additional functional measurement	Environmental/climatic test acc. to ISO and MIL standards, abrasion and adhesion tests, various chemical and resistance testings, autoclaving, surface measurements, resistance measurements

* The following error and tolerance data indicates possible limit values. Specified and assessed according to ISO/MIL/DIN. Limit values cannot be combined freely.