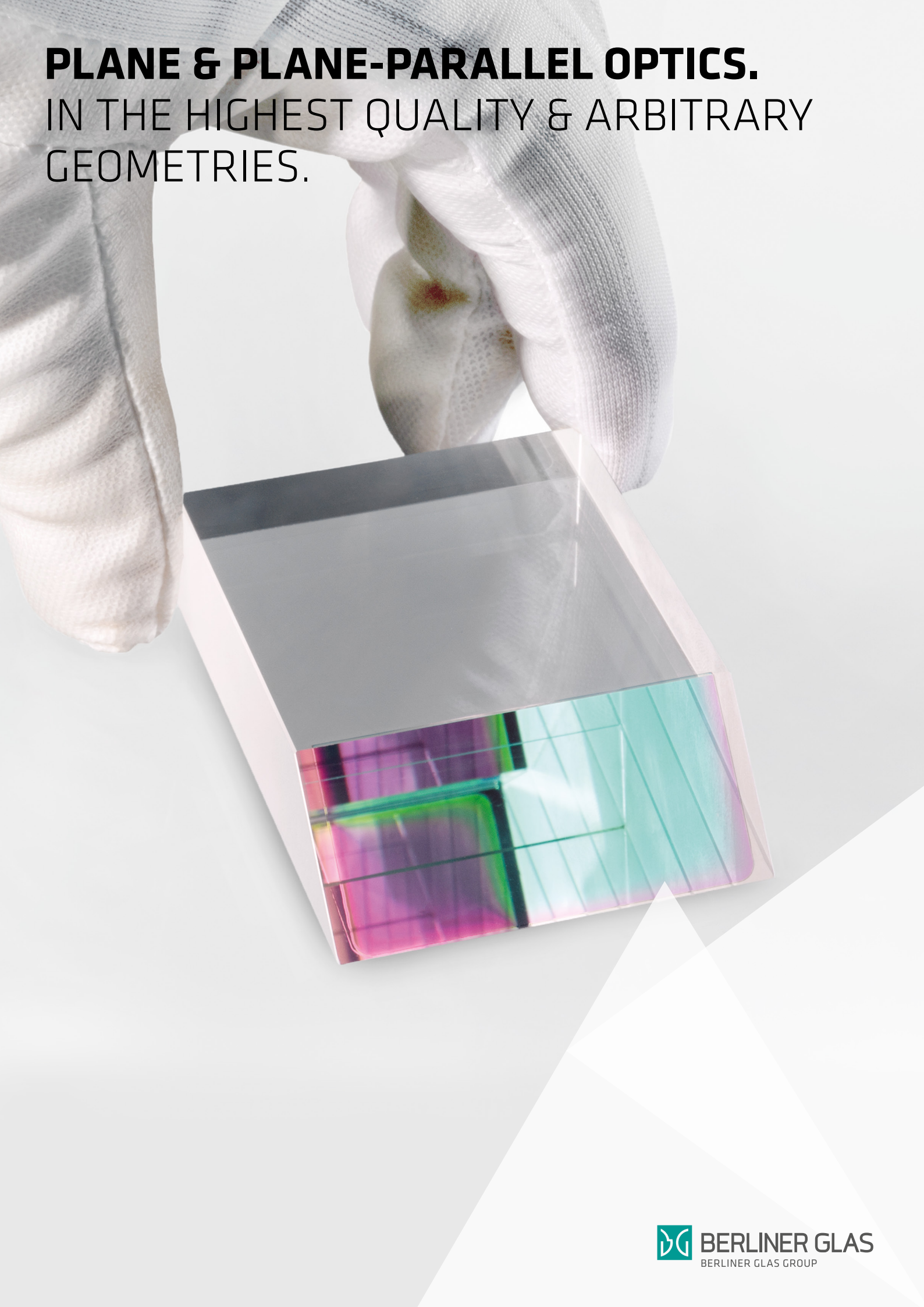


PLANE & PLANE-PARALLEL OPTICS.
IN THE HIGHEST QUALITY & ARBITRARY
GEOMETRIES.



PLANE & PLANE-PARALLEL OPTICS.

Berliner Glas manufactures precision plane and coplanar optics e. g. for applications in the semiconductor industry, laser and space technology, medical technology and metrology.

PRODUCTS

- ▶ Plane and coplanar plates with any exterior contours
- ▶ Wedge-shaped plates with customized shapes and angles
- ▶ Laser substrates as windows and mirrors

SPECIFICATIONS*

Material	Optical glass, quartz glass, glass ceramics, ceramic & special materials
Dimensions	20–1,500 mm, other dimensions on request
Flatness	$\lambda/100$ PV (@ 633nm)
Parallelism	$\leq 0.2''$
Angular accuracy	$\leq 0.5''$
Roughness	≤ 0.2 nm rms
Surface defects	From 5/1 x 0.004 (depending on the material)

FINE CORRECTING PROCEDURES

- ▶ Mechanical fine correction
- ▶ Ion beam figuring
- ▶ Portal-/robot polishing
- ▶ Magnetorheological finishing (MRF)

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, interferometers, autocollimators
Roughness	White light interferometer, atomic force microscope
Additional functional measurements	Environmental/climatic tests acc. to ISO and MIL standards, abrasion and adhesion tests, various chemical and resistance testings, autoclaving, surface measurements, resistance measurements, assembly-specific metrology stations

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