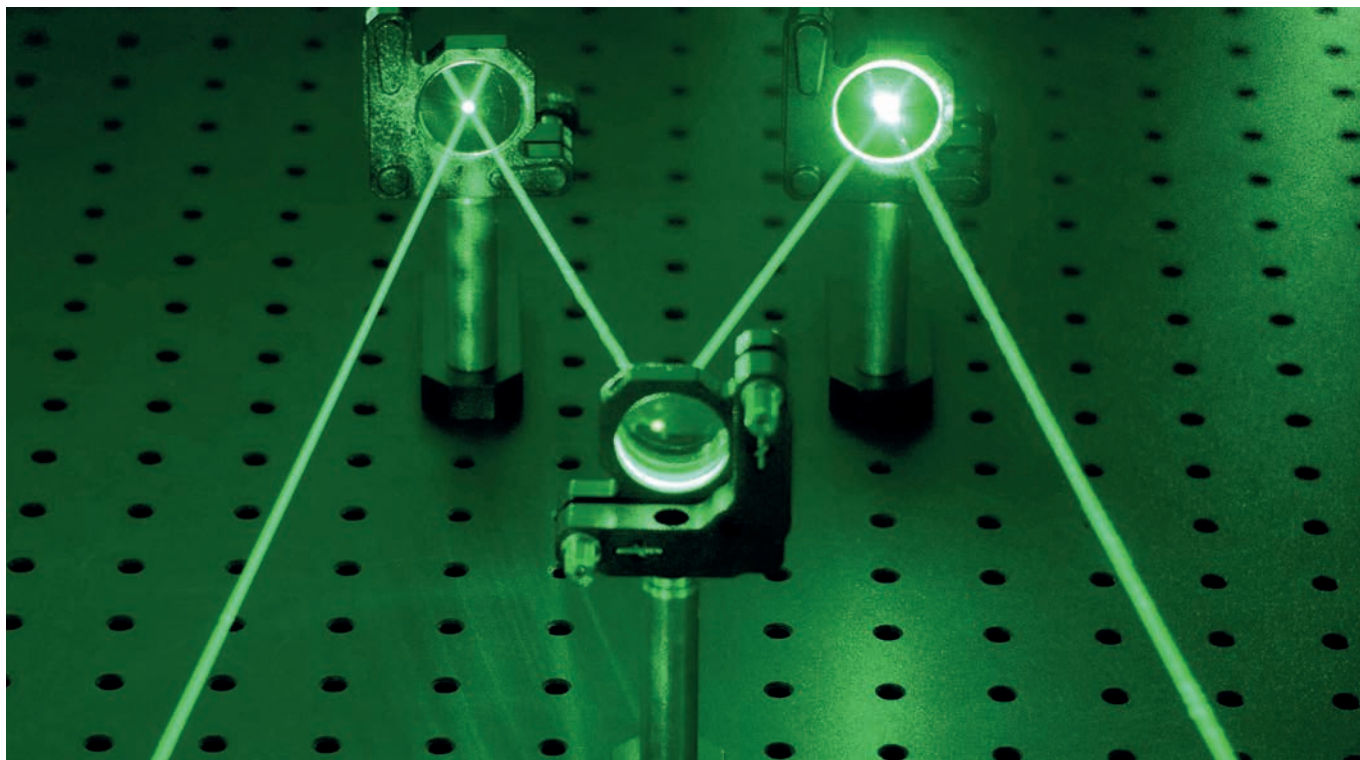


Optics for low loss coatings

Super-polished and Premium



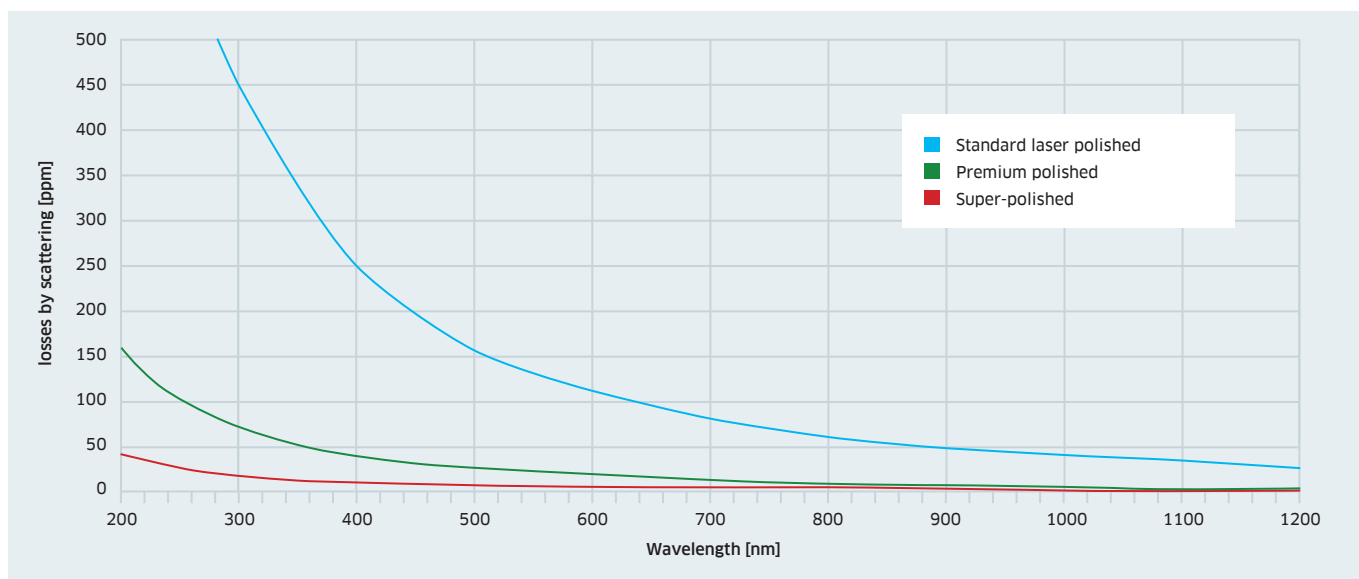
Straylight comparison of a super-polished mirror (left) and a standard mirror (right) at 532 nm and 100 mW

LASEROPTIK offers substrates with the best roughness to ensure lowest scatter for our IBS coatings. A wide range of stock optics is available with a roughness of $\text{RMS} < 0.2 \text{ nm}$ and a flatness of $< \lambda/20$. For the most advanced applications, super-polished substrates with $\text{RMS} < 0.1 \text{ nm}$ are available on request.

Available categories

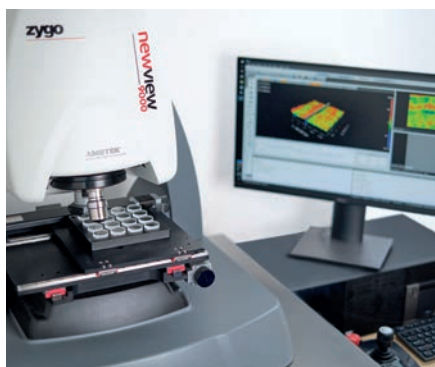
	Guaranteed Roughness	Flatness	Availability
Premium (FS)	$\text{RMS} < 0.2 \text{ nm}^* (< 2 \text{ \AA})$	$< \lambda/20$	\varnothing 12.7–25 mm always 2,000 pcs. on stock (various radii and plane)
Super-polished (FS)	$\text{RMS} < 0.1 \text{ nm}^* (< 1 \text{ \AA})$	$< \lambda/20$	on request

* Tested with Zygo NewView 9000 within sample length 3–1000 μm



Typical losses due to scattering indicated by the substrate surface for a low loss IBS mirror coating

Inhouse test equipment



3D Optical Profiler (Zygo NewView 9000)



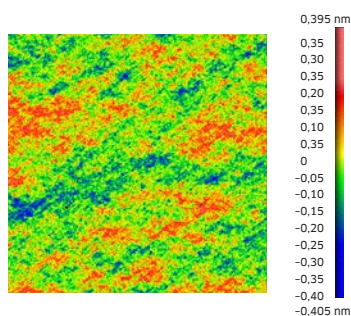
Automated roughness testing



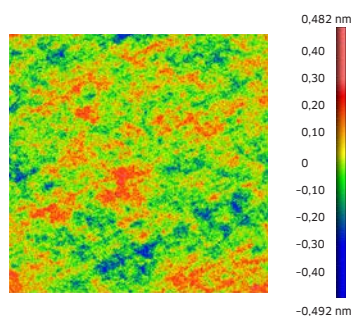
Laser testing lab

Consistently low roughness values over all spatial frequencies

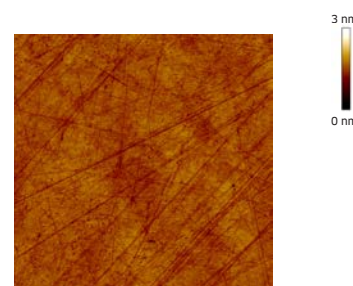
The exemplary roughness measurements of a Premium substrate with different magnifications proves the high quality no matter what the sampling length is.



RMS 0.113 nm
WLI Measurement
Field of view: 1000 x 1000 μm
Magnification: 5.5 x



RMS 0.129 nm
WLI Measurement
Field of view: 170 x 170 μm
Magnification: 50 x



RMS 0.130 nm
AFM Measurement*
Field of view: 10 x 10 μm
*conducted at Fraunhofer IOF