Home of high power optics and coatings

PRODUCT HIGHLIGHTS

Dispersive coatings, including chirped mirrors and matched pairs

Extremely low loss laser optics



As part of our recently enlarged program for ultrafast laser applications, **LASEROPTIK** offers all kinds of dispersive coatings, including chirped mirrors and matched pairs. In addition, the use of high-quality substrates with superior roughness from our product lines Premium (< 2 Å rms) and Super-polished (< 1 Å rms) helps to achieve lowest losses for these critical components. A variety of standard sizes is available from stock.

For example, chirped mirrors compensate for the dispersion introduced by other elements like the laser crystal in a laser cavity. Or they serve as compressors in chirped pulse amplification systems (CPA). They include types like

- mirrors with low or optimized GDD
- GTI mirrors, i.e. highly dispersive narrow bandwidth mirrors
- · chirped mirrors and matched mirror pairs
- octave-spanning broadband chirped mirrors with moderate GDD
- partial reflectors
- coatings used within an OPO



For any application which requires coated optics with extremely low losses **LASEROPTIK** manufactures mirrors with up to R > 99.999% and total losses < 10 ppm. These so called supermirrors are used in ring laser gyroscope assemblies or certain scientific and commercial applications.

LASEROPTIK uses modified IBS machines that are capable to produce low absorption and low scattercoatings on superpolished substrates. The cleanliness of these machines and environment is maintained in dedicated super-clean rooms, where also the extensive substrate pre and after treatment takes place.

Measurement devices such as white light profilometers and high resolution microscopes for the inspection procedures are in place. A custom built cavity ring-down setup allows to determine the reflection with a precision of up to four decimal places and to refer back to the losses.

The use of super-polished substrates with a surface roughness < 1 Å rms is essential for the values mentioned above. Their quality is inspected with a white light profilometer to assure best performance of the finished mirror.