

PRESS RELEASE

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High-damage threshold UV-Optics for laser application

June 2005, Berliner Glas offers a full range of high-damage threshold UV-optics with optimum scratch and dig specification and highest surface accuracy made of fused silica and several fluorides like calcium fluoride or magnesium fluoride.

The best-known application of high-damage threshold UV-optics is in projection lithography with the highest power density in Excimer laser modules and in the beam delivery system. Currently most systems use 248nm sources, but there is a move towards 193nm systems. These challenging applications demand highest surface quality and typically require a scratch and dig specification of 10-5.

BERLINER GLAS supplies the industries with best results for calcium fluoride – a material which is easily chipped and scratched during polishing. To achieve the highest damage-thresholds special processes involving magnetorheological finishing (MRF) and acid etching have been developed. Highest damage threshold levels were achieved with these methods. The MRF-process leaves nearly no residual pits and scratches.

Most DUV-optical components require coatings, which will be supported by BERLINER GLAS too. For anti-reflection coatings oxides and fluorides are typically used such as SiO₂ and Al₂O₃ for the ArF and KrF wavelengths. For the wavelength of 157nm we offer fluorides like MgF₂.

Typical applications including UV-lithography, micromachining, astronomy, synchrotron radiation optics, materials processing, TFT annealing or medicine.

BERLINER GLAS GROUP supplies precision optical components, assemblies and systems, technical glass and WLP for MEMS for the entire sector of industry that uses light. The company employs around 720 people in Germany, Switzerland and the USA.

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