200 mm master wafer carrying Fresnel lenses.

Diffractive optical element for chromatic aberration control.

Large-area hexagonal dense-packed micro-lens array.

With outstanding flexibility, direct writing grayscale photo-lithography enables the generation of high precision microstructures for the implementation into optical systems. Thus, individual solutions for micro refractive and diffractive optical elements, even on non-standard or non-flat surfaces, can be realized in close collaboration with design and integration.

Technical data

- Lithography system specially designed for generation of micro optical elements
- High dynamic dosage control at 405 nm exposure wavelength
- Resolution down to ≤ 1 μm
- Maximum writing field size: 0.5 × 0.5 m²

Realization of micro optical elements

- Layout data and generation of exposure data for various applications
- Fabrication of micro structures in photo resist:
  - Master for replication processes
  - Masks for RIE proportional transfer into diverse materials
  - Masks for structuring functional layers

Typical applications

- (A)spherical lenses and lens arrays in regular or chirped arrangement
- Micro-prism, Fresnel lenses, kinoforms
- Beam shaping elements
- Efficient (blazed) gratings und CGHs
- Diffractive correcting elements for spherical and chromatic aberrations
- Lithography (also multilayer) on almost every substrate geometry