

ASPHERICAL LENSES FOR SUPERIOR PERFORMANCE



OUR ASPHERICAL LENSES

Aspherical lenses have Aspheric surface (parabolic, elliptical or hyperbolic) combined with a second surface, which can be spherical, flat or aspherical (Bia-spherical lens) and are normally used when an element must collimate or concentrate light.

Custom optical Design and Manufacturing:

- Diameters between \varnothing 10 mm and \varnothing 310 mm with different radius of curvature and shape
- Different optical glass and Fused Silica
- Diverse range of rotationally symmetric Aspheric profiles
- Focus light without producing spherical aberration

OPTICAL ADVANTAGES

- Minimum residual of spherical aberration
- Compact product reduced dimension and weight compared to the multi-lens design
- Superior performance
- Sharper focusing
- Larger aperture size
- Improved efficiency in light focusing and collection
- Cost-effectiveness



DESIGN AND MANUFACTURING

The design and manufacture of Aspherical lenses can be challenging, however, leveraging modern machinery and advanced measuring technologies, it is now possible to produce Aspherical lenses in series with consistent and reproducible accuracy.

The manufacturing technologies for Aspherical lenses primarily include molding, polishing, and grinding methods.

PRECISION POLISHING MANUFACTURING

Our Polishing machine is equipped with Adaptive Deterministic Advanced Polishing Technology (ADAPT) with 2D and 3D correction mode.

PRECISION GRINDING

We utilize a highly flexible Grinding machine with an extended Y-axis and a modular spindle concept for processing wider workpiece geometries.

COMPUTER-NUMERICAL CONTROL

Computer-numerical-control (CNC) equipment is necessary to shape and polish the radius of curvature, not constant over the clear aperture of the lens.

METROLOGY OF ASPHERES

Profilometry, a contactless precision measuring instrument for capturing the dimensions of Aspheres, annular and segmented lenses in 2D and 3D, measures the change in height of a lens by moving a probe across the surface.

COATING

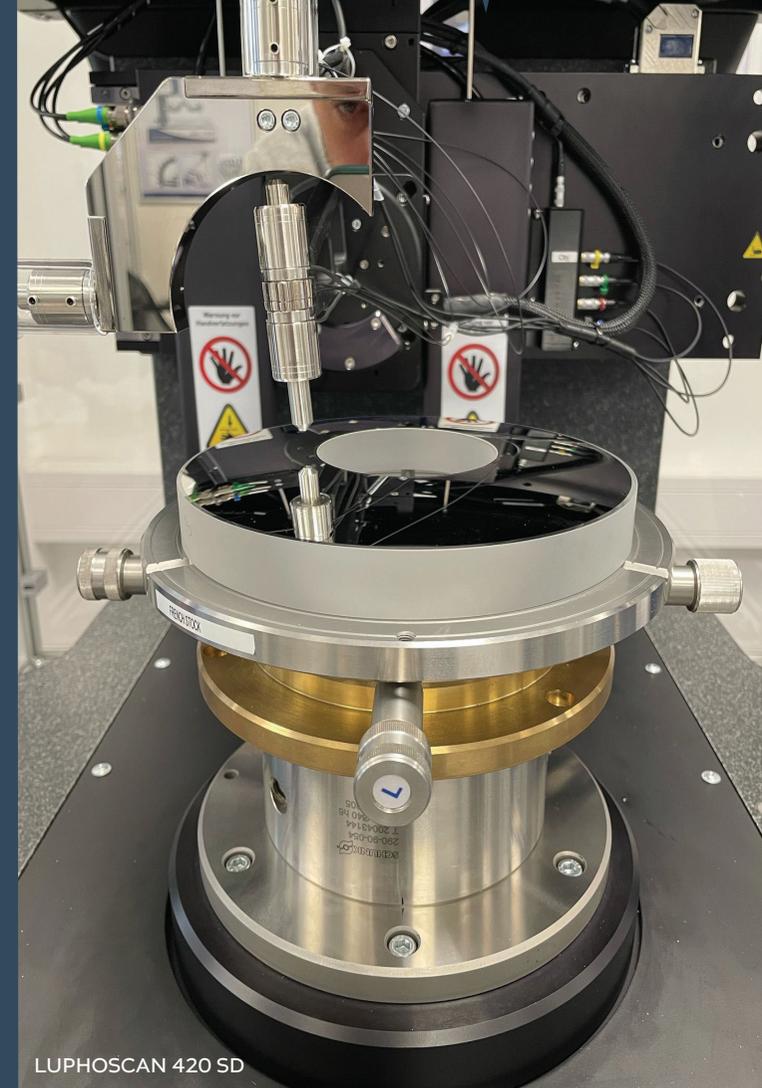
Our Aspherical lenses are also available with any kind of Anti-Reflection, Mirror or Dichroic Coating, meticulously optimized to provide specific spectral bandwidths as defined by our customers.

APPLICATION FIELDS

- Astronomy
- Biomedical/medical
- Communications
- Industrial
- Defense and Security
- Scientific research

APPLICATION ACROSS DEVICES

- Video surveillance cameras
- Optical Instruments
- Eyeglasses and contact lenses (Ophthalmic)
- Fiber Optics & Photonics
- Laser applications
- Tablets and smart phones



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