

Aspherical Optical Components

Know-how:

- Technology und Manufacturing Equipment:
Conventional polishing, CNC grinding, CNC polishing, computer controlled polishing, diamond turning, MRF
- Measurement:
2D/3D tactile, noncontacting contour, interferometric (Computer Generated Hologram*), compensating system
- Design:
Optical Design Department
- Coating:
Development and manufacturing of custom coatings from 157 nm to 25 μm
- Application:
Imaging lenses, alignment systems, mirrors, energy power measurement, telescope optics

* Proprietary know-how and technology for design and manufacture of CGHs.



Aspherical Optical Components

Specifications

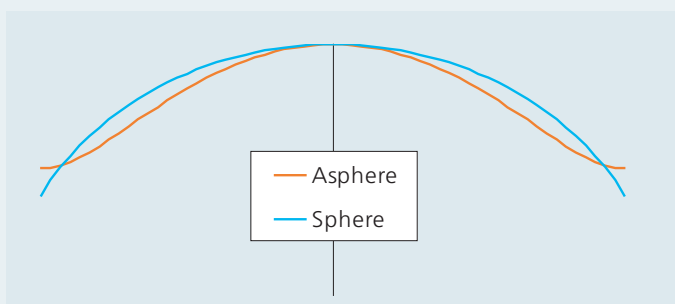
Manufacturing Range

Diameter:	5 mm - 200 mm
Material:	Wide variety of materials (glasses, crystals, metals) for IR, VIS, UV, DUV
Edge Shape:	On customer's request

Manufacturing Tolerances**

Attribute	Units of measure	Standard Quality	Precision Quality
Total Error	µm	± 1.5	± 0.5
Sagitta Error	µm	± 1.0	± 0.3
Irregularity	µm	0.6 PV	0.2 PV
Slope Error	µm / mm	0.2	0.1
Surface Quality	ISO 10110-7	5/ 3 x 0.1	5/ 3 x 0.063
Centricity (T.I.R.)	µm	4	4

** Tighter tolerances on request.



Aspherical Component:

$$|z| = \sqrt{R^2 - h^2}$$

Spherical Component:

$$z(h) = \frac{h^2}{R(1 + \sqrt{1 - (1+k)\frac{h^2}{R^2}})} + \sum_{i=2}^n (A_{zi} h^{2i})$$

It is our policy to constantly improve the design and specifications of our products. Accordingly, the details represented herein cannot be regarded as final and binding..