



Hybrid optical IR Components

Compact Design. Simple Adjustment. Lower Costs.



Benefits:

The combination of standard spherical, aspherical or plane refractive surfaces with diffractive structures is ideal for compact optical devices in broadband applications. The reduction of components, materials and simpler mechanical mounting offers cost savings compared to conventional systems.

The fabrication of hybrid components using ultra-precision diamond turning is available for typical IR materials and enables cost-efficient production in high quantities.

Applications:

- IR lenses and systems
- Image acquisition and target recognition
- IR camera technology

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Specifications

Manufacturing range:

Diameters:	10 mm ... 200 mm
Shapes:	Concave, convex, plane, spherical, aspherical
Structure size:	Up to two increments / mm
Materials:	Germanium, zinc sulfide, (silicon)
IR spectral range:	3 μm ... 12 μm
Special coatings:	Highly durable and efficient AR coatings

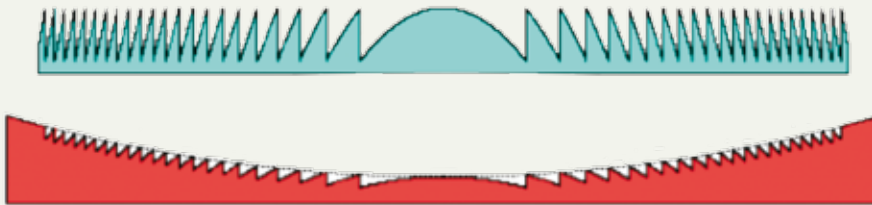
Parameters:

Minimized axial chromatic aberration.	
Diffraction efficiency:	$\approx 92\%$ (average in the wavelength range 3 ... 5 μm , physical limit)
Surface roughness:	$R_q = 15 \text{ nm}$ (Ge), $R_q = 20 \text{ nm}$ (ZnS)

Expertise:

Technology and manufacturing equipment:	Ultra precision diamond turning
Measurement:	2D/3D tactile For aspheres, interferometric using Computer Generated Holograms* Extensive test and measurement facilities to verify environmental resistance
Design:	In-house or custom optical design Manufacturing quality and coatings according to customer's requirements

* Proprietary expertise and technology for design and manufacture of CGHs.



Aspherical diffractive structure on a spherical lens surface.

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



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