Technologies

Diamond turning

Ultra-precise cutting using monocrystalline diamond is the key technology for manufacturing virtually any optical functional surface with the utmost precision. This enables the processing of non-ferrous metals, nickel-phosphorus coatings, plastics, crystals and IR lenses.

### Manufacturing dimensions [ISO 10110-1]

<table>
<thead>
<tr>
<th>Achievable diameters</th>
<th>mm</th>
<th>1 - 350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center thickness</td>
<td>mm</td>
<td>from 0.5*</td>
</tr>
</tbody>
</table>

### Surface shape [ISO 10110-1; 12]

| Shape accuracies PV | nm | up to 100 |
| Shape accuracies RMS | nm | 20 |
| Surface roughness – Rq | nm | 1 |

* dependent on diameter

### Available technologies

- Diamond turning with 2 and 3 linear axes
- Fly cutting
- Slow tool servo

### Processable materials

- Copper, aluminum, brass, nickel silver, nickel
- Nickel-phosphorus layers
- Polycarbonate, PMMA
- Silicon, germanium, zinc sulfide
- IR lenses

### Achievable optical component geometries

- Aspheres
- Spheres
- Cylinders
- Toroids
- Microlenses
- Fresnel structures
- Diffractive optical elements
- Freeforms

asphericon GmbH
Stockholmer Str. 9 | 07747 Jena | Germany

+49 (0) 3641 - 3100 560  +49 (0) 3641 - 3100 561  sales@asphericon.com

www.asphericon.com