

**TECHSPEC® 12.5mm Dia x 37.5mm FL 3-12µm Coated, Ge Aspheric Lens**



Stock #22-778 CLEARANCE **3 In Stock**

⊖ 1 ⊕ **\$1,813.00**

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Volume Pricing	
Qty 1+	<b>\$1,813.00</b> each
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**Physical & Mechanical Properties**

12.50 +0.00/-0.10	<b>Diameter (mm):</b>
≤5	<b>Centering (arcmin):</b>
11.25	<b>Clear Aperture CA (mm):</b>
2.83	<b>Edge Thickness ET (mm):</b>
3.00 ±0.10	<b>Center Thickness CT (mm):</b>

Protective as needed	<b>Bevel:</b>
Diamond Turned	<b>Edges:</b>
Plano	<b>Shape of Back Surface:</b>
<b>Optical Properties</b>	
37.50 @ 8000nm	<b>Effective Focal Length EFL (mm):</b>
0.16	<b>Numerical Aperture NA:</b>
36.75	<b>Back Focal Length BFL (mm):</b>
Germanium (Ge)	<b>Substrate:</b> <input type="checkbox"/>
$\lambda/6$	<b>Asphere Figure Error, RMS @ 632.8nm:</b>
BBAR (3000-12000nm)	<b>Coating:</b>
$R_{avg} < 5.0\%$ @ 3 - 12 $\mu$ m	<b>Coating Specification:</b>
60-40	<b>Surface Quality:</b>
3.00	<b>f#:</b>
4.002 @ 11 $\mu$ m	<b>Index of Refraction (<math>n_d</math>):</b>
Infinite	<b>Radius <math>R_2</math> (mm):</b>
3000 - 12000	<b>Wavelength Range (nm):</b>
Infinite	<b>Conjugate Distance:</b>
8000	<b>Focal Length Specification Wavelength (nm):</b>

<b>Material Properties</b>	
6.1	<b>Coefficient of Thermal Expansion CTE (<math>10^{-6}/^{\circ}\text{C}</math>):</b>

<b>Regulatory Compliance</b>	
<a href="#">Compliant</a>	<b>RoHS 2015:</b>
<a href="#">View</a>	<b>Certificate of Conformance:</b>
<a href="#">Compliant</a>	<b>REACH 241:</b>

## Product Details

- Diffraction Limited Performance
- Variety of Coating Options
- Full Prescription Data Available
- Due to material supply chain disruptions with germanium, there may be increased lead times and price changes on our germanium products. For more information, please contact our [customer service team](#).
- Edmund Optics has limited remaining inventory of this part number and no raw material available to supply more once this is depleted. Please contact our Product Support Engineers to help with an alternate solution for your needs. Customer Service can provide you the latest price and availability.

TECHSPEC® Germanium Infrared (IR) Aspheric Lenses provide diffraction-limited focusing performance over a broad spectral range in the Mid and Long Wave infrared regions. Ideal for monochromatic light sources, such as quantum cascade lasers, these lenses offer a high-performance alternative to standard plano-convex lenses.

The lenses are available in a 12.5, 25, or 50mm diameter. TECHSPEC® Germanium Infrared (IR) Aspheric Lenses are available uncoated, or with BBAR coating options.

Uncoated germanium has transmission of <50%, so custom anti-reflection (AR) coatings should be considered if specifying an uncoated lens. Each BBAR coated lens offers >95% transmission, making it ideal for integration into a variety of OEM applications. For custom design or coating options, please contact our [Sales Department](#).

## Technical Information



AR COATED GERMANIUM	
<p><b>Ge with 3-5µm AR Coating</b> <b>Typical Transmission</b></p> <p>The graph shows typical transmission T (%) from 2 to 16 µm. A blue shaded region highlights the design range from 3 to 5 µm, where transmission is consistently above 90%. Outside this range, transmission drops significantly, reaching ~40% at 16 µm.</p>	<p>Typical transmission of a 3mm thick Ge window with BBAR (3000-5000nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} &lt; 3\%</math> @ 3000 - 5000nm</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>
<p><b>Ge with 3-12µm AR Coating</b> <b>Typical Transmission</b></p> <p>The graph shows typical transmission T (%) from 2 to 16 µm. A blue shaded region highlights the design range from 3 to 12 µm, where transmission is consistently above 90%. Outside this range, transmission drops, reaching ~60% at 16 µm.</p>	<p>Typical transmission of a 3mm thick Ge window with BBAR (3000-12000nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} &lt; 5.0\%</math> @ 3 - 12µm</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>
<p><b>8-12µm AR Coated Germanium</b> <b>Typical Transmission</b></p> <p>The graph shows typical transmission T (%) from 2 to 16 µm. A blue shaded region highlights the design range from 8 to 12 µm, where transmission is consistently above 90%. Outside this range, transmission is lower, with a notable dip at 3 µm and a peak at 4 µm, reaching ~70% at 16 µm.</p>	<p>Typical transmission of a 3mm thick Ge window with BBAR (8000-12000nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} &lt; 3.0\%</math> @ 8 - 12µm</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>

## Special Handling

### Germanium Optics Handling and Cleaning Guidelines

Germanium optics require special handling and cleaning procedures. Always wear gloves during handling to prevent contamination, and wash hands afterward. Avoid contact between Germanium dust and the eyes, skin, or clothing. When not in use, store optics sealed and covered at temperatures between 20°C and 25°C. Do not expose them to temperatures exceeding 100°C when in use.

#### Handling Guidelines

- Always wear **gloves** to prevent damage from skin oils.
- If Germanium dust is present, take the following precautions:
  - Wear safety glasses to protect eyes.
  - Use a dust mask or face mask to avoid inhalation.
  - Wear **gloves** to prevent skin contact.
- Maintain storage temperature between 20°C and 25°C with humidity below 30%.
- Wrap Germanium optics in a **lens cloth** or **pouch** and seal in a **container** when not in use.

- Germanium is brittle and heavy—always place it on soft surfaces and avoid dropping it.

### Approved Cleaning Solvents

- Ethanol
  - Isopropyl Alcohol
  - Methanol
  - Reagent-Grade Acetone
  - Liquid CO<sub>2</sub>
  - [Shop Now](#)
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