

TECHSPEC®

50mm Dia. x 1mm Thick, Uncoated, Ge Window



Germanium (Ge) Windows

Stock **#83-345** **13 In Stock**

-

1

+

€1.380⁰⁰

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Volume Pricing	
Qty 1+	€1.380,00 each
Need More?	Request Quote

ⓘ Prices shown are exclusive of VAT/local taxes

Product Downloads

SPECIFICATIONS

General

Type:

Protective Window

Physical & Mechanical Properties

Bevel:

Protective as needed	
90.00	Clear Aperture (%):
45.00	Clear Aperture CA (mm):
50.00 +0.0/-0.1	Diameter (mm):
1.00 ±0.1	Thickness (mm):
Fine Ground	Edges:
780.00	Knoop Hardness (kg/mm²):
<1	Parallelism (arcmin):
0.28	Poisson's Ratio:
102.7	Young's Modulus (GPa):

Optical Properties

Uncoated	Coating:
4.002 @ 11µm	Index of Refraction (n _d):
Germanium (Ge)	Substrate:
λ/10 @ 10.6µm	Surface Flatness (P-V):
60-40	Surface Quality:
2000 - 14000	Wavelength Range (nm):

Material Properties

6.1	Coefficient of Thermal Expansion CTE (10 ⁻⁶ /°C):
5.33	Density (g/cm³):

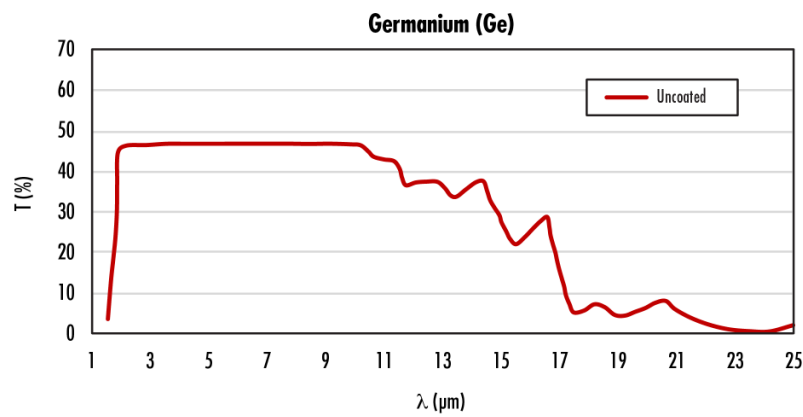
Regulatory Compliance

Compliant	RoHS 2015:
View	Certificate of Conformance:
Compliant	REACH 241:

PRODUCT DETAILS

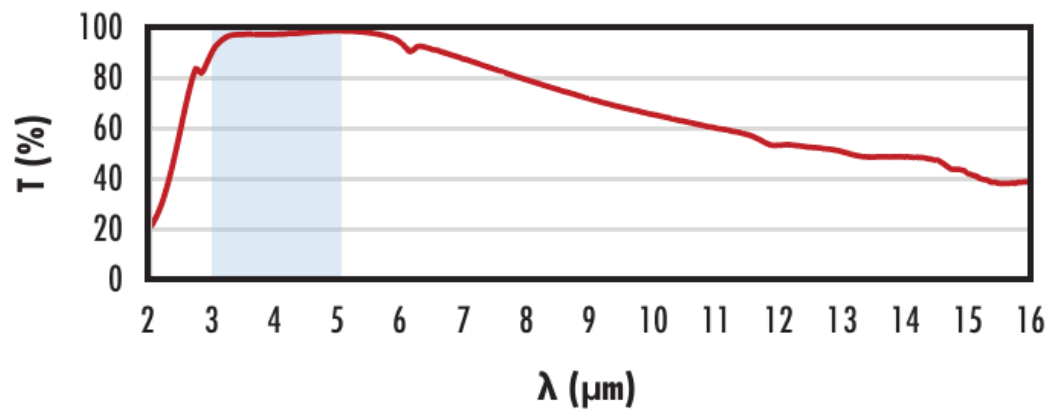
- Uncoated or with AR Coatings Designed for a Variety of IR Ranges
 - Minimal Chromatic Aberration Due to Low Dispersion
 - Ideal for Infrared Applications Requiring Rugged Optics
 - **DLC Coated Germanium Windows** are also Available
 - Due to material supply chain disruptions with germanium, there 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 (Ge) Windows are available off-the-shelf with three anti-reflection coating options: 3 - 5µm for mid-infrared applications, 3 - 12µm for broadband multispectral applications, or 8 - 12µm for thermal imaging applications. Due to its high index of refraction (around 4.0 from 2 - 14µm), an anti-reflection coating is recommended on these germanium windows for sufficient transmission in the region of interest. Germanium is subject to thermal runaway, meaning the transmission decreases as temperature increases. As such, TECHSPEC Germanium (Ge) Windows should be used at temperatures below 100°C. Germanium’s high density (5.33 g/cm3) should be considered when designing for weight-sensitive systems. The Knoop Hardness of germanium (780) is approximately twice that of magnesium fluoride, making it ideal for infrared applications requiring rugged optics.

TECHNICAL INFORMATION



AR COATED GERMANIUM

Ge with 3-5 μm AR Coating
Typical Transmission



Typical transmission of a 3mm thick Ge window with BBAR (3000-5000nm) coating at 0° AOI.

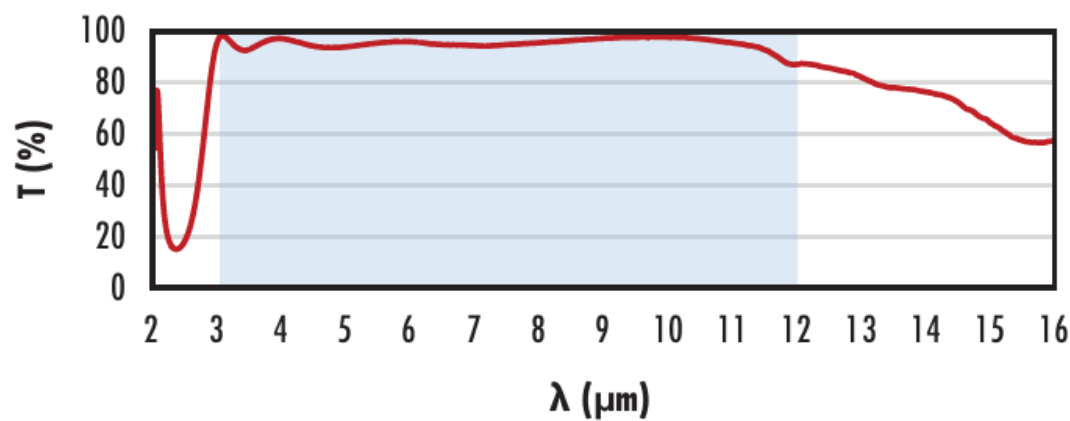
The blue shaded region indicates the coating design wavelength range, with the following specification:

$R_{\text{avg}} < 3\%$ @ 3000 - 5000nm

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

Ge with 3-12 μm AR Coating
Typical Transmission



Typical transmission of a 3mm thick Ge window with BBAR (3000-12000nm) coating at 0° AOI.

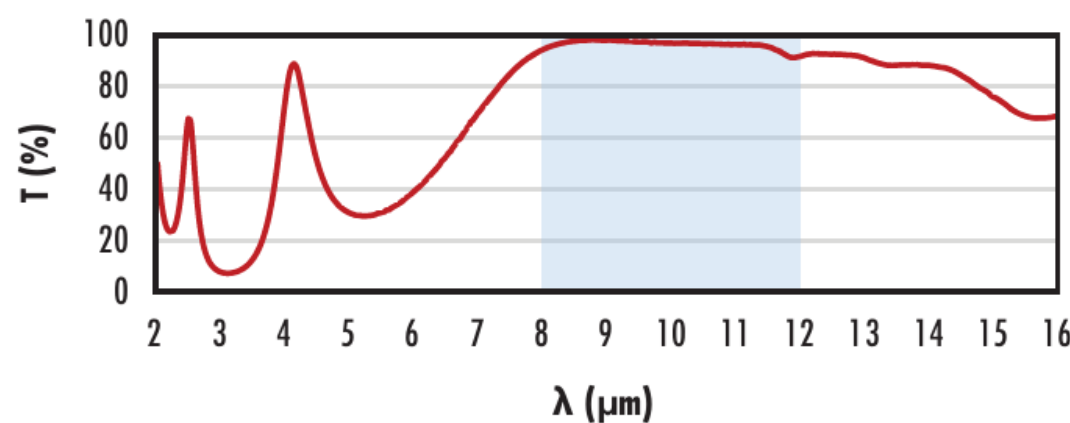
The blue shaded region indicates the coating design wavelength range, with the following specification:

$R_{\text{avg}} < 5.0\%$ @ 3 - 12 μm

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

8-12 μm AR Coated Germanium
Typical Transmission



Typical transmission of a 3mm thick Ge window with BBAR (8000-12000nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength range, with the following specification:

$R_{\text{avg}} < 3.0\%$ @ 8 - 12 μm

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

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 CO₂
- [Shop Now](#)

CUSTOM

Edmund Optics offers comprehensive custom manufacturing services for optical and imaging components tailored to your specific application requirements. Whether in the prototyping phase or preparing for full-scale production, we provide flexible solutions to meet your needs. Our experienced engineers are here to assist—from concept to completion.

Our capabilities include:

- Custom dimensions, materials, coatings, and more
- High-precision surface quality and flatness
- Tight tolerances and complex geometries
- Scalable production—from prototype to volume

Learn more about our [custom manufacturing capabilities](#) or submit an inquiry [here](#).

COMPATIBLE MOUNTS
