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# 38.1mm Dia., 3mm Thick, 8-12µm AR Coated & DLC Coated, ISP Optics Germanium (Ge) Window | DLC812-GE-W-38-3

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Stock #24-578 **20+ In Stock**

1  C\$1,323<sup>00</sup>

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#### General

DLC812-GE-W-38-3 **Model Number:**

Protective Window **Type:**

#### Physical & Mechanical Properties

32.38 **Clear Aperture CA (mm):**

38.10 +0.00/-0.13	<b>Diameter (mm):</b>
3.00 ±0.13	<b>Thickness (mm):</b>
<3	<b>Parallelism (arcmin):</b>
Protective as needed	<b>Bevel:</b>
85	<b>Clear Aperture (%):</b>
Fine Ground	<b>Edges:</b>
0.28	<b>Poisson's Ratio:</b>
102.7	<b>Young's Modulus (GPa):</b>
780.00	<b>Knoop Hardness (kg/mm<sup>2</sup>):</b>

## Optical Properties

S1: DLC Coating S2: BBAR (8000-12000nm)	<b>Coating:</b>
<a href="#">Germanium (Ge)</a>	<b>Substrate:</b> <input type="checkbox"/>
4.002 @ 11µm	<b>Index of Refraction (n<sub>d</sub>):</b>
40-20	<b>Surface Quality:</b>
T <sub>avg</sub> ≥90.0% @ 8 - 12µm T <sub>min</sub> ≥80.0% @ 8 - 12µm	<b>Coating Specification:</b>
2000 - 14000	<b>Wavelength Range (nm):</b>
M10 @ 10.6µm	<b>Surface Flatness (P-V):</b>
AR: -80 to +160 per ML-C-48497C DLC: -80 to +160 per ML-C-48497C	<b>Coating Temperature (°F):</b>

## Material Properties

5.33	<b>Density (g/cm<sup>3</sup>):</b>
6.1	<b>Coefficient of Thermal Expansion CTE (10<sup>-6</sup>/°C):</b>

## Environmental & Durability Factors

AR: Moderate, per ML-C-48497C DLC: Severe, per ML-C-48497C	<b>Coating Abrasion:</b>
AR: per ML-C-48497C DLC: per ML-C-48497C	<b>Coating Adhesion:</b>
AR: 24 Hours per ML-C-48497C DLC: 24 Hours per ML-C-48497C	<b>Coating Humidity:</b>
AR: N/A DLC: ≥72 Hours per ML-C-675	<b>Coating Salt Spray:</b>
AR: N/A DLC: ≥24 Hours Immersion per ML-C-675C	<b>Coating Salt Solubility:</b>
AR: per ML-C-48497C DLC: per ML-C-48497C	<b>Coating Solubility and Cleaning:</b>
AR: N/A DLC: ≥1,000 Wipes of Sand/Slurry per TS-1888	<b>Coating Wiper Durability:</b>

## Regulatory Compliance

<a href="#">Compliant</a>	<b>RoHS 2015:</b>
<a href="#">View</a>	<b>Certificate of Conformance:</b>
<a href="#">Compliant</a>	<b>Reach 240:</b>

## Product Details

- Minimal Chromatic Aberration Due to Low Dispersion
- Uncoated Transmission from 2 – 16µm
- Available with BBAR or DLC Coating for 8 – 12µm
- 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.

ISP Optics Germanium (Ge) Windows provide transmission and low absorption through the Long-Wave Infrared (LWR) spectrum, making it useful for thermal imaging applications. Germanium features a Knoop Hardness of 780, making it ideal for infrared applications requiring rugged optics. These windows are available uncoated, Broadband Anti-Reflection (BBAR) coated for 8 – 12µm, or Diamond-Like Carbon (DLC) coated for 8 – 12µm. ISP Optics Germanium Windows are ideal for integration into thermal imaging systems, especially those that require rugged optics. Germanium is subject to thermal runaway, meaning that the transmission decreases as temperature increases. As such, these germanium windows should be used at temperatures below 100°C.

## 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>
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