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38.1mm Dia. x 2mm Thick, 3-5µm AR Coated & DLC Coated, ISP Optics Silicon (Si) Window | DLC35-SI-W-38-2

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Diamond-Like Carbon (DLC) Coated Silicon Windows

Stock #24-647 **CLEARANCE** 5 In Stock

⊖ 1 ⊕ S\$611⁰⁰

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General

DLC35-SI-W-38-2 **Model Number:**

Protective Window **Type:**

Crystal **Type of Window:**

Arrow on substrate edge points towards DLC coated **Note:**

surface

Physical & Mechanical Properties

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

38.10 +0.00/-0.13 **Diameter (mm):**

2.00 ±0.13 **Thickness (mm):**

<3 **Parallelism (arcmin):**

Protective as needed **Bevel:**

85 **Clear Aperture (%):**

Fine Ground **Edges:**

0.27 **Poisson's Ratio:**

140 **Young's Modulus (GPa):**

1,150.00 **Knoop Hardness (kg/mm²):**

Optical Properties

S1: DLC Coating
S2: BBAR (3000-5000nm) **Coating:**

[Silicon \(Si\)](#) **Substrate:**

3.422 @ 5µm **Index of Refraction (n_d):**

40-20 **Surface Quality:**

AR: R_{avg} ≤0.5% @ 3000 - 5000nm **Coating Specification:**

3000 - 5000 **Wavelength Range (nm):**

M10 @ 10.6µm **Surface Flatness (P-V):**

AR: -80 to +160 per ML-C-48497C
DLC: -80 to +160 per ML-C-48497C **Coating Temperature (°F):**

Material Properties

2.33 **Density (g/cm³):**

2.55 **Coefficient of Thermal Expansion CTE (10⁻⁶/°C):**

Environmental & Durability Factors

AR: Moderate, per ML-C-48497C
DLC: Severe, per ML-C-48497C **Coating Abrasion:**

AR: per ML-C-48497C
DLC: per ML-C-48497C **Coating Adhesion:**

AR: 24 Hours per ML-C-48497C
DLC: 24 Hours per ML-C-48497C **Coating Humidity:**

AR: N/A
DLC: ≥72 Hours per ML-C-675 **Coating Salt Spray:**

AR: N/A
DLC: ≥24 Hours Immersion per ML-C-675C **Coating Salt Solubility:**

AR: per ML-C-48497C
DLC: per ML-C-48497C **Coating Solubility and Cleaning:**

AR: N/A
DLC: ≥1,000 Wipes of Sand/Slurry per TS-1888 **Coating Wiper Durability:**

Regulatory Compliance

[Compliant](#) **RoHS 2015:**

[View](#) **Certificate of Conformance:**

Reach 240:

Need different specs or modifications?

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

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Product Details

- Meets Severe Abrasion Requirements of MIL-F-48616 and MIL-C-48497C
- High Transmission from 3 – 5µm
- Ideal for Harsh Environments
- [Diamond-Like Carbon \(DLC\) Coated Germanium Windows](#) Also Available

ISP Optics Diamond-Like Carbon (DLC) Coated Silicon Windows provide anti-reflection coating on one surface and a specially designed DLC coating on the other surface, making these windows highly durable and ideal for harsh environments. The DLC Coated surface is designed to withstand temperature cycling from -80 to +160°F, salt spray for a continuous period of 72 hours, and 1,000 wiper oscillations in a sand and slurry mixture. Further, these windows meet the MIL-F-48616 and MIL-C-48497C requirements for severe abrasion. Silicon features a Knoop Hardness of 1150 and low density, making it tougher than germanium substrates and suitable for weight-sensitive applications, respectively. ISP Optics Diamond-Like Carbon (DLC) Coated Silicon Windows are engineered for 3 to 5µm, making them ideal for infrared defense applications such as thermal imaging.

Technical Information

Specification	AR Coating	DLC Coating
Adhesion	per MIL-C-48497C	per MIL-C-48497C
Abrasion	Moderate, per MIL-C-48497C	Severe, per MIL-C-48497C
Humidity	24 Hours per MIL-C-48497C	24 Hours per MIL-C-48497C
Salt Solubility	-	≥24 Hours Immersion per MIL-C-675C
Salt Spray	-	≥72 Hours per MIL-C-675
Temperature (°F)	-80 to +160 per MIL-C-48497C	-80 to +160 per MIL-C-48497C
Solubility and Cleaning	per MIL-C-48497	per MIL-C-48497
Wiper	-	≥1,000 Wipes of Sand/Slurry per TS-1888
Coating Temperature (°F)	-80 to +160 per MIL-C-48497C	-80 to +160 per MIL-C-48497C