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5mm Dia., 0.5mm Thick, 400-1100nm, High Durability AR Coated Sapphire Window



High Durability Anti-Reflection (AR) Coated Sapphire Windows

Stock #18-461 **8 In Stock**

⊖ 1 ⊕ £103²⁰

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Volume Pricing	
Qty 1-10	£103.20 each
Qty 11-25	£89.60 each
Qty 26-49	£87.20 each
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ⓘ Prices shown are exclusive of VAT/local taxes

Product Downloads

General

Protective Window **Type:**

Crystal **Type of Window:**

Physical & Mechanical Properties

Clear Aperture CA (mm):

4.50	
5.00 ±0.05	Diameter (mm):
0.50 ±0.05	Thickness (mm):
≤3.5	Parallelism (arcmin):
Protective as needed	Bevel:
90	Clear Aperture (%):
Fine Ground	Edges:
0.27	Poisson's Ratio:
435	Young's Modulus (GPa):
1,900.00	Knoop Hardness (kg/mm²):

Optical Properties

Hardened MS-NIR (400-1100nm)	Coating:
Sapphire (Al ₂ O ₃)	Substrate: <input type="checkbox"/>
1.77	Index of Refraction (n_d):
80-50	Surface Quality:
72.24	Abbe Number (v_d):
0.008 for Visible Light Orthogonal to Optical Axis	Birefringence (n_o-n_e):
Random	Axis Orientation:
R _{avg} <1.5% @ 400 - 1100nm R _{abs} <2.0% @ 400 - 1100nm	Coating Specification:
400 - 1100	Wavelength Range (nm):
2λ (typical)	Surface Flatness (P-V):
-80 to +160 per MIL-M-13508C Paragraph 4.4.4	Coating Temperature (°F):

Material Properties

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

Environmental & Durability Factors

Severe, per MIL-C-675C Paragraph 4.5.10	Coating Abrasion:
Per MIL-M-13508C Paragraph 4.4.6	Coating Adhesion:
≥24 Hours per MIL-C-675C paragraph 4.5.8	Coating Humidity:
≥24 Hours per MIL-C-675C paragraph 4.5.9	Coating Salt Spray:
≥24 Hours Immersion per MIL-C-675C paragraph 4.5.7	Coating Salt Solubility:

Regulatory Compliance

View	Certificate of Conformance:
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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

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

Product Details

- Achieves Severe Abrasion Requirements of ML-C-675C
- Low Reflection Coatings for 400 - 1100nm or 2000 - 5000nm
- Ideal for Harsh Environments Requiring Thin Optics
- [Uncoated Sapphire Windows](#) are Also Available

High Durability Anti-Reflection (AR) Coated Sapphire Windows are designed for applications requiring the ruggedness of sapphire with AR coatings designed to survive severe abrasion. The AR coatings on these sapphire windows are designed to withstand temperature cycling from -80 to +160°F, salt spray for a continuous period of 24 hours, and salt solubility for an immersion period of 24 hours. Coating designs achieving the severe abrasion requirements of ML-C-675C for VS-NIR and MMIR applications are available, making them ideal for use in harsh environments. High Durability Anti-Reflection (AR) Coated Sapphire Windows are used in aerospace, defense, and industrial applications, as well as any optical application requiring thin, durable protective windows.