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TECHSPEC® 12.7mm Dia., 0.5mm Thick, NIR I AR Coated Sapphire Window



Stock #20-850 **5 In Stock**

⊖ 1 ⊕ S\$102⁰⁰

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Volume Pricing	
Qty 1-24	S\$102.00 each
Qty 25-50	S\$78.00 each
Qty 51-99	S\$77.00 each
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Product Downloads

General

Protective Window **Type:**
Crystal **Type of Window:**

Physical & Mechanical Properties

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

12.70 ±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

NIR I (600-1050nm)	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} ≤0.5% @ 600 - 1050nm	Coating Specification:
600 - 1050	Wavelength Range (nm):
2λ (typical)	Surface Flatness (P-V):

Material Properties

3.97	Density (g/cm³):
5.4 (Parallel to C-Axis) 4.3 (Perpendicular to C-Axis)	Coefficient of Thermal Expansion CTE (10⁻⁶/°C):

Regulatory Compliance

Compliant	RoHS 2015:
View	Certificate of Conformance:
Compliant	Reach 235:

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

- Features Extreme Surface Hardness Chemical Resistance
- Transmits Wavelengths Ranging From UV to Mid-Infrared
- Thinner and Stronger than Standard Glass Windows
- Anti-Reflection Coating Options Covering 350 - 5000nm Available

TECHSPEC® Sapphire Windows are manufactured from single crystal sapphire, making them ideal for demanding applications (such as laser systems) because of their extreme surface hardness, high thermal conductivity, high

dielectric constant and resistance to common chemical acids and alkalis. Sapphire is the second hardest crystal next to **diamond** and, because of their structural strength, sapphire windows can be made much thinner than other common windows with improved transmittance. Chemically, sapphire is single crystal aluminum oxide (Al_2O_3) and is useful in a transmission range from UV to mid-infrared or 330 - 5500nm when uncoated. TECHSPEC® Sapphire Windows are available with anti-reflection (AR) coatings to improve performance in the visible, NIR, and IR spectra with coating options covering 350 - 5000nm.

Technical Information



Compatible Mounts