

**TECHSPEC® 15mm Dia., 2mm Thick, BBAR (1650-3000nm) AR Coated Sapphire Window**



Stock #15-993 **2 In Stock**

⊖ 1 ⊕ S\$143<sup>00</sup>

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Volume Pricing	
Qty 1-24	<b>S\$143.00</b> each
Qty 25-50	<b>S\$109.00</b> each
Qty 51-99	<b>S\$108.00</b> each
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**General**

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

**Physical & Mechanical Properties**

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

15.00 ±0.25	<b>Diameter (mm):</b>
2.00 ±0.10	<b>Thickness (mm):</b>
≤3.5	<b>Parallelism (arcmin):</b>
Protective as needed	<b>Bevel:</b>
≥90	<b>Clear Aperture (%):</b>
Fine Ground	<b>Edges:</b>
0.27	<b>Poisson's Ratio:</b>
435	<b>Young's Modulus (GPa):</b>
1,900.00	<b>Knoop Hardness (kg/mm<sup>2</sup>):</b>

## Optical Properties

BBAR (1650-3000nm)	<b>Coating:</b>
Sapphire (Al <sub>2</sub> O <sub>3</sub> )	<b>Substrate:</b> <input type="checkbox"/>
1.77	<b>Index of Refraction (n<sub>d</sub>):</b>
80-50	<b>Surface Quality:</b>
72.24	<b>Abbe Number (v<sub>d</sub>):</b>
0.1 per Inch	<b>Surface Roughness (µm):</b>
0.008 for Visible Light Orthogonal to Optical Axis	<b>Birefringence (n<sub>o</sub>-n<sub>e</sub>):</b>
Random	<b>Axis Orientation:</b>
R <sub>avg</sub> <1% @ 1650 - 3000nm R <sub>abs</sub> <2% @ 1650 - 3000nm	<b>Coating Specification:</b>
1650 - 3000	<b>Wavelength Range (nm):</b>
2λ (typical)	<b>Surface Flatness (P-V):</b>

## Material Properties

3.97	<b>Density (g/cm<sup>3</sup>):</b>
5.4 (Parallel to C-Axis) 4.3 (Perpendicular to C-Axis)	<b>Coefficient of Thermal Expansion CTE (10<sup>-6</sup>/°C):</b>

## Regulatory Compliance

<b>Compliant</b>	<b>RoHS 2015:</b>
<b>View</b>	<b>Certificate of Conformance:</b>
<b>Compliant</b>	<b>Reach 235:</b>

### 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

**Sapphire Typical Transmission**



**Standard Visible & NIR AR Coatings on Sapphire**



**Infrared BBAR Coatings on Sapphire**



**Infrared AR Coated Sapphire Windows  
1mm Thickness**



## Compatible Mounts