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**TECHSPEC® 20mm Diameter x 3.3mm Thickness, Uncoated, BOROFLOAT® Window**

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TECHSPEC BOROFLOAT Borosilicate Windows

Stock **#45-461** [CONTACT US](#)

⊖ 1 ⊕ £22<sup>40</sup>

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Volume Pricing	
Qty 1-5	£22.40 each
Qty 6-25	£17.60 each
Qty 26-99	£16.80 each
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ⓘ Prices shown are exclusive of VAT/local taxes

Product Downloads

**General**

Protective Window **Type:**

Glass **Type of Window:**

**Physical & Mechanical Properties**

18.00	<b>Clear Aperture CA (mm):</b>
20.00 ±0.5	<b>Diameter (mm):</b>
3.30 ±0.2	<b>Thickness (mm):</b>
Protective as needed	<b>Bevel:</b>
≥90	<b>Clear Aperture (%):</b>
Ground	<b>Edges:</b>
0.20	<b>Poisson's Ratio:</b>
64	<b>Young's Modulus (GPa):</b>
480.00	<b>Knoop Hardness (kg/mm<sup>2</sup>):</b>

## Optical Properties

Uncoated	<b>Coating:</b>
<b>BOROFLOAT®</b>	<b>Substrate:</b> □
1.472	<b>Index of Refraction (n<sub>d</sub>):</b>
80-50	<b>Surface Quality:</b>
90	<b>Transmission (%):</b>
65.41	<b>Abbe Number (v<sub>d</sub>):</b>
350 - 2000	<b>Wavelength Range (nm):</b>
4 - 6λ	<b>Surface Flatness (P-V):</b>

## Material Properties

2.23	<b>Density (g/cm<sup>3</sup>):</b>
525	<b>Transformation Temperature (°C):</b>
3.25 (+20 to +300°C)	<b>Coefficient of Thermal Expansion CTE (10<sup>-6</sup>/°C):</b>

## Environmental & Durability Factors

1 hour @ 500; >100 hours @ 450	<b>Operating Temperature (°C):</b>
Short Term, 1 hr: 110K 1 - 100 hrs: 90K Long Term, >100 hrs: 80K	<b>Resistance to Temperature Difference (K):</b>
Up to 4mm Thick: 175K 4 - 6mm Thick: 160K 6 - 15mm Thick: 150K	<b>Thermal Shock (K):</b>

## Regulatory Compliance

<b>Compliant</b>	<b>RoHS 2015:</b>
<b>Compliant</b>	<b>Reach 219:</b>
<b>View</b>	<b>Certificate of Conformance:</b>

## Product Details

- Low Coefficient of Thermal Expansion
- Visible to Near Infrared Transmission
- High Resistance to Thermal Shock

TECHSPEC® BOROFLOAT® Borosilicate Windows are ideal for high temperature and harsh environment applications. The windows have a low coefficient of thermal expansion of 3.25 (+20 to +300°C). TECHSPEC® BOROFLOAT® Borosilicate Windows feature visible to near infrared transmission. Unlike common borosilicate that is drawn flat, BOROFLOAT® is produced by a float technique that yields superior surface flatness — typically 4 - 6λ per inch. BOROFLOAT® is about three times more resistant to thermal shock than standard soda lime glass.

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## Technical Information



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**Compatible Mounts**