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TECHSPEC<sup>®</sup> 20mm Dia. x 50mm FL, VIS-EXT Coated, Double-Convex Lens



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-

1

+

A\$87<sup>.20</sup>

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General

Type:

Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):

20.00 +0.000/-0.025

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <1                                   | Centering (arcmin):                         |
| Protective as needed                 | Bevel:                                      |
| 3.50                                 | Center Thickness CT (mm):                   |
| ±0.10                                | Center Thickness Tolerance (mm):            |
| 1.52                                 | Edge Thickness ET (mm):                     |
| 19.00                                | Clear Aperture CA (mm):                     |
| Optical Properties                   |                                             |
| 48.84                                | Back Focal Length BFL (mm):                 |
| 50.00                                | Effective Focal Length EFL (mm):            |
| VIS-EXT (350-700nm)                  | Coating:                                    |
| R <sub>avg</sub> <0.5% @ 350 - 700nm | Coating Specification:                      |
| N-BK7                                | Substrate: □                                |
| 40-20                                | Surface Quality:                            |
| 1.5λ                                 | Power (P-V) @ 632.8nm:                      |
| λ/4                                  | Irregularity (P-V) @ 632.8nm:               |
| 51.08                                | Radius R <sub>1</sub> =R <sub>2</sub> (mm): |
| 2.5                                  | f/#:                                        |
| 587.6                                | Focal Length Specification Wavelength (nm): |
| ±1                                   | Focal Length Tolerance (%):                 |
| 0.20                                 | Numerical Aperture NA:                      |
| 350 - 700                            | Wavelength Range (nm):                      |

|                       |                             |
|-----------------------|-----------------------------|
| Regulatory Compliance |                             |
| Compliant             | RoHS 2015:                  |
| View                  | Certificate of Conformance: |
| Compliant             | Reach 235:                  |

Product Details

- AR Coated to Provide <0.5% Reflectance per Surface for 350 - 700nm
  - Minimize Aberrations Including Spherical and Coma
  - [UV Fused Silica DCX Lenses](#) Available
  - Other Coating Options Available: [Uncoated](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR I](#), [NIR II](#), [VIS-NIR](#), and [YAG-BBAR](#)
- TECHSPEC® VIS-EXT Coated Double-Convex (DCX) Lenses, also referred to as bi-convex lenses, have two positive, symmetrical faces with equal radii on both sides. These lenses are generally recommended for finite imaging applications with a conjugate ratio (ratio between object distance and image distance) between 0.2 and 5. At a conjugate ratio of 1, aberrations such as spherical aberration, chromatic aberration, coma, and distortion are minimized or cancelled due to the symmetric lens design. TECHSPEC VIS-EXT Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

Technical Information



|                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                    | <p>Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                                                                                                                                                                                                                                                                              |
| <p><b>N-BK7 with MgF<sub>2</sub> Coating</b><br/><b>Typical Transmission</b></p>  | <p>Typical transmission of a 3mm thick N-BK7 window with MgF2 (400-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 1.75\% @ 400 - 700\text{nm}</math> (N-BK7)</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                            |
| <p><b>N-BK7 with VIS-EXT Coating</b><br/><b>Typical Transmission</b></p>        | <p>Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 0.5\% @ 350 - 700\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                  |
| <p><b>N-BK7 with VIS-NIR Coating</b><br/><b>Typical Transmission</b></p>        | <p>Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{abs} \leq 0.25\% @ 880\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 400 - 870\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p> |
| <p><b>N-BK7 with VIS 0° Coating</b><br/><b>Typical Transmission</b></p>         | <p>Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 0.4\% @ 425 - 675\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div><div>N-BK7 with YAG-BBAR Coating</div><div>Typical Transmission</div></div><div><div><div>T (%)</div><div>100</div><div>95</div><div>90</div><div>85</div><div>80</div><div>75</div><div>70</div></div><div><div><div>200</div><div>400</div><div>600</div><div>800</div><div>1000</div><div>1200</div><div>1400</div><div>1600</div></div><div><div>Wavelength (nm)</div></div></div></div></div>                             | <div><div>Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.</div><div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div><div><div><div><math>R_{abs} \leq 0.25\%</math> @ 532nm</div><div><math>R_{abs} \leq 0.25\%</math> @ 1064nm</div><div><math>R_{avg} \leq 1.0\%</math> @ 500 - 1100nm</div></div></div><div>Data outside this range is not guaranteed and is for reference only.</div><div><a href="#">Click Here to Download Data</a></div></div>           |
| <div><div><div>N-BK7 with NIR I Coating</div><div>Typical Transmission</div></div><div><div><div>T (%)</div><div>100</div><div>95</div><div>90</div><div>85</div><div>80</div><div>75</div><div>70</div></div><div><div><div>200</div><div>400</div><div>600</div><div>800</div><div>1000</div><div>1200</div><div>1400</div><div>1600</div></div><div><div>Wavelength (nm)</div></div></div></div></div>                                | <div><div>Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.</div><div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div><div><div><math>R_{avg} \leq 0.5\%</math> @ 600 - 1050nm</div></div><div>Data outside this range is not guaranteed and is for reference only.</div><div><a href="#">Click Here to Download Data</a></div></div>                                                                                                                              |
| <div><div><div>N-BK7 with NIR II Coating</div><div>Typical Transmission</div></div><div><div><div>T (%)</div><div>100</div><div>95</div><div>90</div><div>85</div><div>80</div><div>75</div><div>70</div></div><div><div><div>200</div><div>400</div><div>600</div><div>800</div><div>1000</div><div>1200</div><div>1400</div><div>1600</div><div>1800</div><div>2000</div></div><div><div>Wavelength (nm)</div></div></div></div></div> | <div><div>Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.</div><div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div><div><div><div><math>R_{abs} \leq 1.5\%</math> @ 750 - 800nm</div><div><math>R_{abs} \leq 1.0\%</math> @ 800 - 1550nm</div><div><math>R_{avg} \leq 0.7\%</math> @ 750 - 1550nm</div></div></div><div>Data outside this range is not guaranteed and is for reference only.</div><div><a href="#">Click Here to Download Data</a></div></div> |

Compatible Mounts