

TECHSPEC<sup>®</sup> 10mm Dia. x 20mm FL, VIS-EXT, Inked, Double-Convex Lens



Stock **#89-144-INK** [CONTACT US](#)

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-

1

+

C\$84<sup>.00</sup>

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| Volume Pricing |                               |
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| Qty 1-9        | C\$84.00 each                 |
| Qty 10-24      | C\$75.60 each                 |
| Qty 25-99      | C\$67.55 each                 |
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General

Type:  
Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):  
10.00 ±0.025

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <1                                   | Centering (arcmin):                         |
| Protective as needed                 | Bevel:                                      |
| 2.50                                 | Center Thickness CT (mm):                   |
| ±0.05                                | Center Thickness Tolerance (mm):            |
| 1.25                                 | Edge Thickness ET (mm):                     |
| 9.00                                 | Clear Aperture CA (mm):                     |
| Optical Properties                   |                                             |
| 19.16                                | Back Focal Length BFL (mm):                 |
| 20.00                                | Effective Focal Length EFL (mm):            |
| VIS-EXT (350-700nm)                  | Coating:                                    |
| R <sub>avg</sub> <0.5% @ 350 - 700nm | Coating Specification:                      |
| N-BK7                                | Substrate: <input type="checkbox"/>         |
| 40-20                                | Surface Quality:                            |
| 1.5λ                                 | Power (P-V) @ 632.8nm:                      |
| λ/4                                  | Irregularity (P-V) @ 632.8nm:               |
| 20.24                                | Radius R <sub>1</sub> =R <sub>2</sub> (mm): |
| 2.00                                 | f/#:                                        |
| 587.6                                | Focal Length Specification Wavelength (nm): |
| ±1                                   | Focal Length Tolerance (%):                 |
| 0.25                                 | Numerical Aperture NA:                      |
| 350 - 700                            | Wavelength Range (nm):                      |
| Regulatory Compliance                |                                             |
| View                                 | Certificate of Conformance:                 |

## Product Details

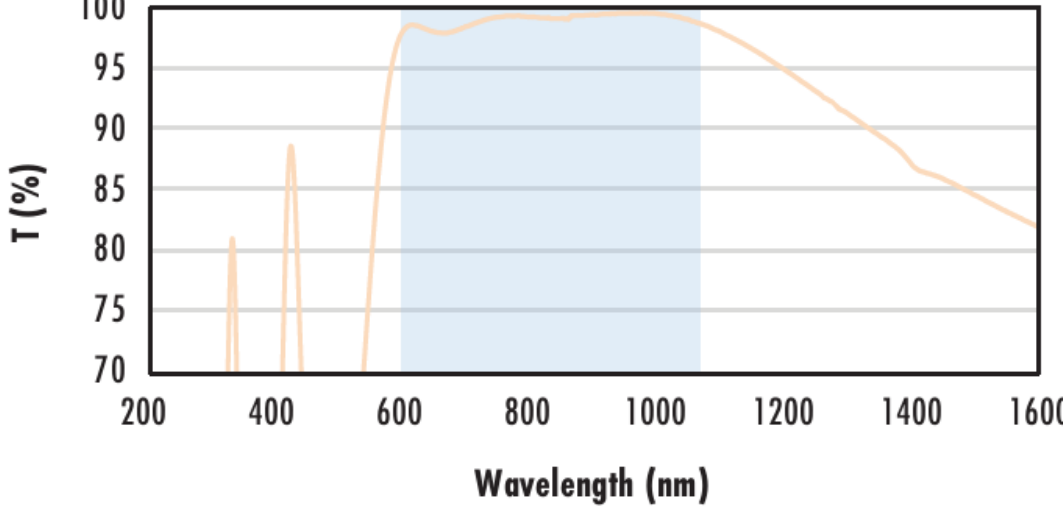
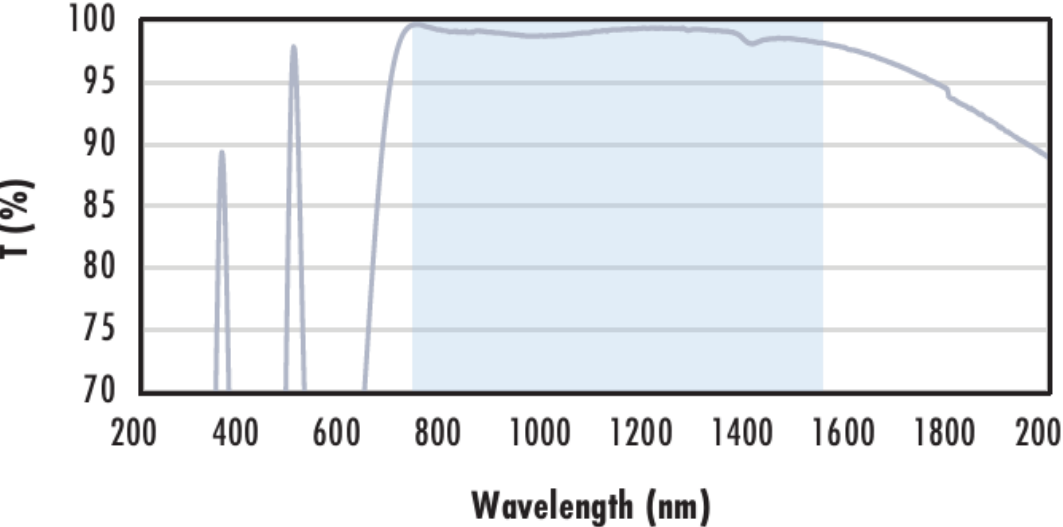
- AR Coated to Provide <0.5% Reflectance per Surface for 350 - 700nm
- Minimize Aberrations Including Spherical and Coma
- [UV Fused Silica DCX Lenses](#) Available
- Other Coating Options Available: [Uncoated](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR I](#), [NIR II](#), [VIS-NIR](#), and [YAG-BBAR](#)

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>75<br/>70</p> <p>200 400 600 800 1000 1200 1400 1600 1800 2000 2200</p> <p>Wavelength (nm)</p>                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>N-BK7 with MgF<sub>2</sub> Coating</b><br/><b>Typical Transmission</b></p>  <p>100<br/>95<br/>90<br/>85<br/>80<br/>75<br/>70</p> <p>200 400 600 800 1000 1200 1400 1600 1800 2000 2200</p> <p>Wavelength (nm)</p> | <p>Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (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 (N-BK7)}</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-EXT Coating</b><br/><b>Typical Transmission</b></p>  <p>100<br/>95<br/>90<br/>85<br/>80<br/>75<br/>70</p> <p>200 400 600 800 1000 1200</p> <p>Wavelength (nm)</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>100<br/>95<br/>90<br/>85<br/>80<br/>75<br/>70</p> <p>200 400 600 800 1000 1200 1400 1600</p> <p>Wavelength (nm)</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>100<br/>95<br/>90<br/>85<br/>80<br/>75<br/>70</p> <p>200 400 600 800 1000 1200</p> <p>Wavelength (nm)</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>                                                                                                                   |
| <p><b>N-BK7 with YAG-BBAR Coating</b><br/><b>Typical Transmission</b></p>  <p>100<br/>95<br/>90<br/>85<br/>80<br/>75<br/>70</p> <p>200 400 600 800 1000 1200</p> <p>Wavelength (nm)</p>                               | <p>Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                             | <p>BBAR (300-1600nm) 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\%</math> @ 532nm<br/><math>R_{abs} \leq 0.25\%</math> @ 1064nm<br/><math>R_{avg} \leq 1.0\%</math> @ 500 - 1100nm</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 NIR I Coating</b><br/><b>Typical Transmission</b></p>    | <p>Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) 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\%</math> @ 600 - 1050nm</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 NIR II Coating</b><br/><b>Typical Transmission</b></p>  | <p>Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) 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 1.5\%</math> @ 750 - 800nm<br/><math>R_{abs} \leq 1.0\%</math> @ 800 - 1550nm<br/><math>R_{avg} \leq 0.7\%</math> @ 750 - 1550nm</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> |

Compatible Mounts