

TECHSPEC<sup>®</sup> 20mm Dia. x 50mm FL, NIR I Inked, Double-Convex Lens



Stock **#63-648-INK** [CONTACT US](#)

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-

1

+

S\$85<sup>.40</sup>

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| Volume Pricing |                               |
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| Qty 1-9        | <b>S\$85.40</b> each          |
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General

Type:  
Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):  
20.00 ±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):                      |
|                                       |                                                       |
| NIR I (600-1050nm)                    | Coating:                                              |
|                                       |                                                       |
| R <sub>avg</sub> ≤0.5% @ 600 - 1050nm | 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:                         |
|                                       |                                                       |
| 51.08                                 | Radius R <sub>1</sub> =R <sub>2</sub> (mm):           |
|                                       |                                                       |
| 2.5                                   | f/#:                                                  |
|                                       |                                                       |
| 587.6                                 | Focal Length Specification Wavelength (nm):           |
|                                       |                                                       |
| 0.20                                  | Numerical Aperture NA:                                |
|                                       |                                                       |
| 600 - 1050                            | Wavelength Range (nm):                                |
|                                       |                                                       |
| 7 J/cm <sup>2</sup> @ 1064nm, 10ns    | Damage Threshold, By Design: <input type="checkbox"/> |
|                                       |                                                       |
| Regulatory Compliance                 |                                                       |
|                                       |                                                       |
| View                                  | Certificate of Conformance:                           |
|                                       |                                                       |

## Product Details

- AR Coated to Provide <0.5% Reflectance per Surface for 600 - 1050nm
  - Minimize Aberrations Including Spherical and Coma
  - [UV Fused Silica DCX Lenses](#) Available
  - Other Coating Options Available: [Uncoated](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR II](#), [VIS-EXT](#), [VIS-NIR](#), and [YAG-BBAR](#)
- TECHSPEC® NIR I 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® NIR I Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

## Technical Information



|                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Uncoated N-BK7 Typical Transmission</b></p>                       | <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 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 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 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 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>                                                                                                                   |

|                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p data-bbox="569 252 1037 350"><b>N-BK7 with YAG-BBAR Coating</b><br/><b>Typical Transmission</b></p>    | <p data-bbox="1341 385 1839 433">Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.</p> <p data-bbox="1331 448 1850 495">The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <div data-bbox="1472 507 1709 584"><p><math>R_{abs} \leq 0.25\% @ 532nm</math></p><p><math>R_{abs} \leq 0.25\% @ 1064nm</math></p><p><math>R_{avg} \leq 1.0\% @ 500 - 1100nm</math></p></div> <p data-bbox="1341 596 1839 644">Data outside this range is not guaranteed and is for reference only.</p> <p data-bbox="1472 658 1709 679"><a href="#">Click Here to Download Data</a></p>                     |
| <p data-bbox="617 878 1008 976"><b>N-BK7 with NIR I Coating</b><br/><b>Typical Transmission</b></p>      | <p data-bbox="1341 1047 1839 1095">Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.</p> <p data-bbox="1331 1110 1850 1157">The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <div data-bbox="1472 1169 1709 1193"><p><math>R_{avg} \leq 0.5\% @ 600 - 1050nm</math></p></div> <p data-bbox="1341 1207 1839 1255">Data outside this range is not guaranteed and is for reference only.</p> <p data-bbox="1472 1270 1709 1291"><a href="#">Click Here to Download Data</a></p>                                                                                                           |
| <p data-bbox="606 1525 1016 1623"><b>N-BK7 with NIR II Coating</b><br/><b>Typical Transmission</b></p>  | <p data-bbox="1341 1653 1839 1700">Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.</p> <p data-bbox="1331 1715 1850 1762">The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <div data-bbox="1472 1774 1709 1852"><p><math>R_{abs} \leq 1.5\% @ 750 - 800nm</math></p><p><math>R_{abs} \leq 1.0\% @ 800 - 1550nm</math></p><p><math>R_{avg} \leq 0.7\% @ 750 - 1550nm</math></p></div> <p data-bbox="1341 1887 1839 1935">Data outside this range is not guaranteed and is for reference only.</p> <p data-bbox="1472 1949 1709 1970"><a href="#">Click Here to Download Data</a></p> |

Custom

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
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Compatible Mounts