

TECHSPEC<sup>®</sup> 12mm Dia. x 48mm FL, NIR I Coated, Double-Convex Lens



Stock **#49-479** **5 In Stock**

☐ [Other Coating Options](#)

-

1

+

C\$67<sup>.90</sup>

ADD TO CART

| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-9        | C\$67.90 each                 |
| Qty 10-24      | C\$60.90 each                 |
| Qty 25-99      | C\$54.25 each                 |
| Need More?     | <a href="#">Request Quote</a> |

Product Downloads

General

Type:  
Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):  
12.00 +0.0/-0.025

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| <1                                    | Centering (arcmin):                                   |
| Protective as needed                  | Bevel:                                                |
| 2.74                                  | Center Thickness CT (mm):                             |
| ±0.05                                 | Center Thickness Tolerance (mm):                      |
| 2.00                                  | Edge Thickness ET (mm):                               |
| 11.00                                 | Clear Aperture CA (mm):                               |
| Optical Properties                    |                                                       |
| 47.09                                 | Back Focal Length BFL (mm):                           |
| 48.00                                 | 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:                         |
| 49.14                                 | Radius R <sub>1</sub> =R <sub>2</sub> (mm):           |
| 4.00                                  | f/#:                                                  |
| 587.6                                 | Focal Length Specification Wavelength (nm):           |
| 0.13                                  | 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                 |                                                       |
| Compliant                             | RoHS 2015:                                            |
| View                                  | Certificate of Conformance:                           |
| Compliant                             | Reach 235:                                            |

Product Details

• AR Coated to Provide <0.5% Reflectance per Surface for 600 - 1050nm

• Mnimize 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



N-BK7

Uncoated N-BK7 Typical Transmission



Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra.

[Click Here to Download Data](#)

N-BK7 with MgF<sub>2</sub> Coating Typical Transmission



Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength range, with the following specification:

$$R_{avg} \leq 1.75\% \text{ @ } 400 - 700\text{nm (N-BK7)}$$

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

N-BK7 with VIS-EXT Coating Typical Transmission



Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength range, with the following specification:

$$R_{avg} \leq 0.5\% \text{ @ } 350 - 700\text{nm}$$

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

N-BK7 with VIS-NIR Coating Typical Transmission



Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength range, with the following specification:

$$R_{abs} \leq 0.25\% \text{ @ } 880\text{nm}$$

$$R_{avg} \leq 1.25\% \text{ @ } 400 - 870\text{nm}$$

$$R_{avg} \leq 1.25\% \text{ @ } 890 - 1000\text{nm}$$

Data outside this range is not guaranteed and is for reference only.

[Click Here to Download Data](#)

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

## 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
  - Scalable production—from prototype to volume
- Learn more about our [custom manufacturing capabilities](#) or submit an inquiry [here](#).

## Compatible Mounts

;