

**TECHSPEC® 9mm Dia. x 45mm FL, NIR I, Inked, Double-Convex Lens**



Stock **#49-469-INK** [CONTACT US](#)

[Other Coating Options](#)

1  **\$79<sup>00</sup>**

**ADD TO CART**

Volume Pricing	
Qty 1-9	<b>\$79.80</b> each
Qty 10-24	<b>\$71.40</b> each
Qty 25-99	<b>\$64.05</b> each
Need More?	<a href="#">Request Quote</a>

Product Downloads

**SPECIFICATIONS**

**General**

Type:

## Physical & Mechanical Properties

9.00 ±0.025 **Diameter (mm):**

<1 **Centering (arcmin):**

Protective as needed **Bevel:**

2.50 **Center Thickness CT (mm):**

±0.05 **Center Thickness Tolerance (mm):**

2.06 **Edge Thickness ET (mm):**

8.1 **Clear Aperture CA (mm):**

## Optical Properties

44.17 **Back Focal Length BFL (mm):**

45.00 **Effective Focal Length EFL (mm):**

NIR I (600-1050nm) **Coating:**

$R_{avg} \leq 0.5\%$  @ 600 - 1050nm **Coating Specification:**

**N-BK7** **Substrate:**

40-20 **Surface Quality:**

1.5λ **Power (P-V) @ 632.8nm:**

λ/4 **Irregularity (P-V) @ 632.8nm:**

46.08 **Radius  $R_1=R_2$  (mm):**

5.00 **f#:**

587.6 **Focal Length Specification Wavelength (nm):**

0.10 **Numerical Aperture NA:**

600 - 1050 **Wavelength Range (nm):**

7 J/cm<sup>2</sup> @ 1064nm, 10ns **Damage Threshold, By Design:**

## Regulatory Compliance

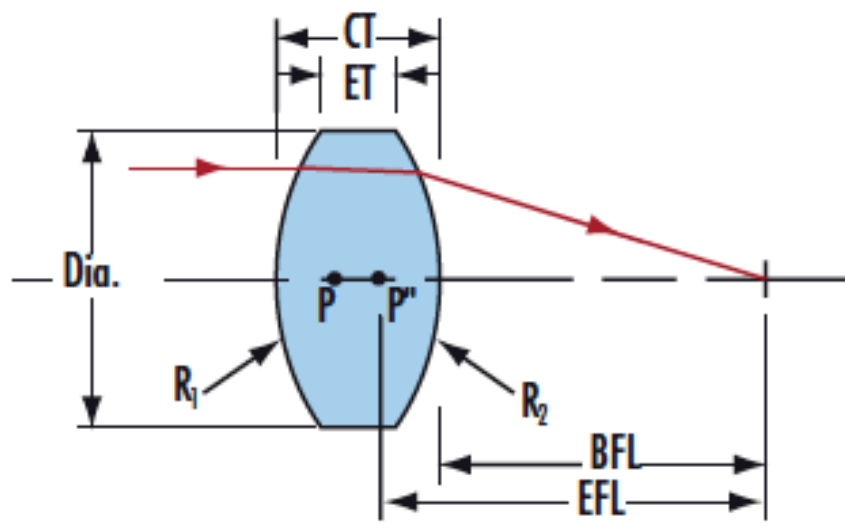
[View](#) **Certificate of Conformance:**

## 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](#)

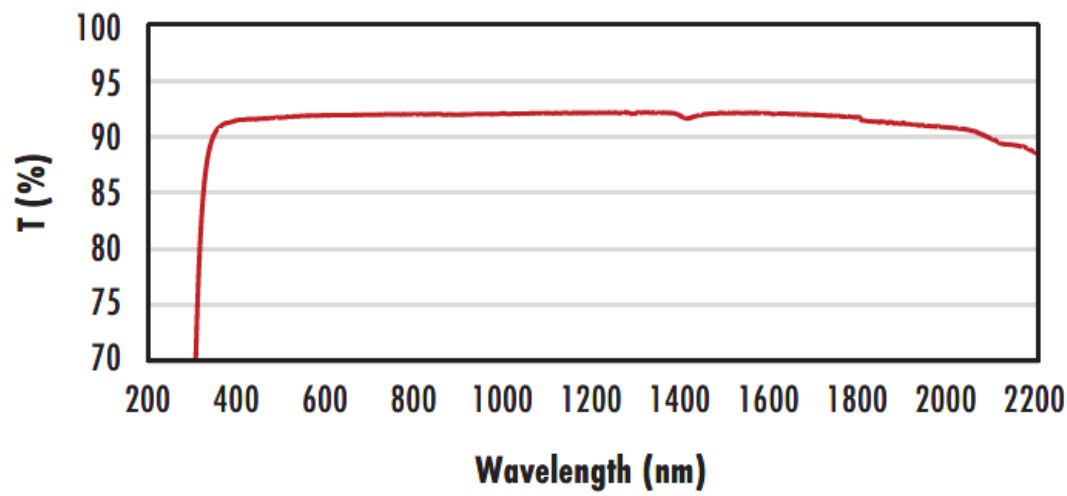
TECHSPEC® NIR I Coated Double-Convex (DCX) Lenses, also referred to as bi-convex lenses, have two positive, symmetrical faces with equal radii on both sides. These lenses are generally recommended for finite imaging applications with a conjugate ratio (ratio between object distance and image distance) 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



N-BK7

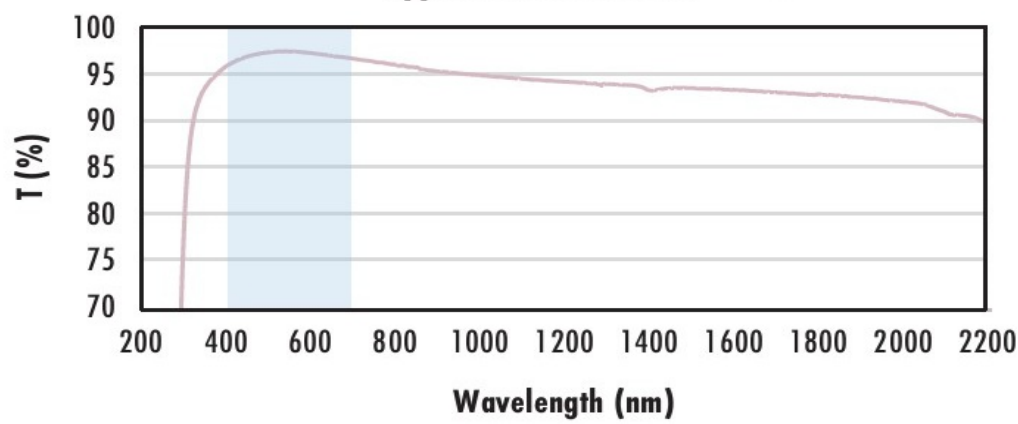
### Uncoated N-BK7 Typical Transmission



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.

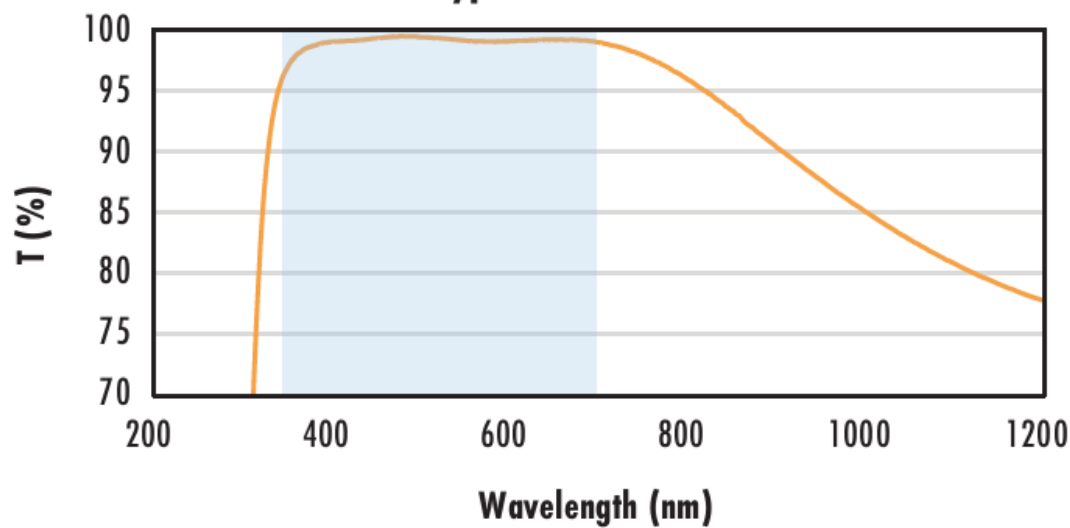
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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.

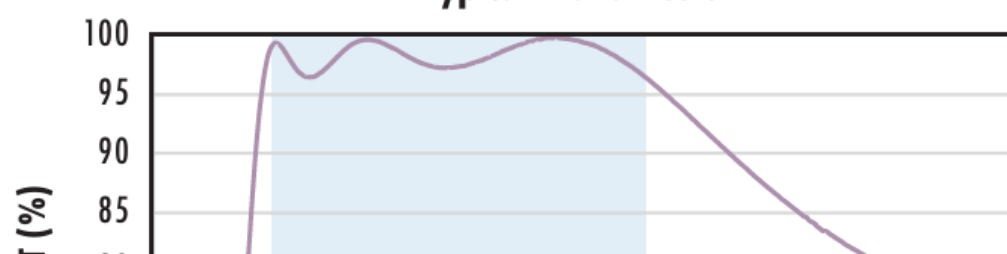
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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



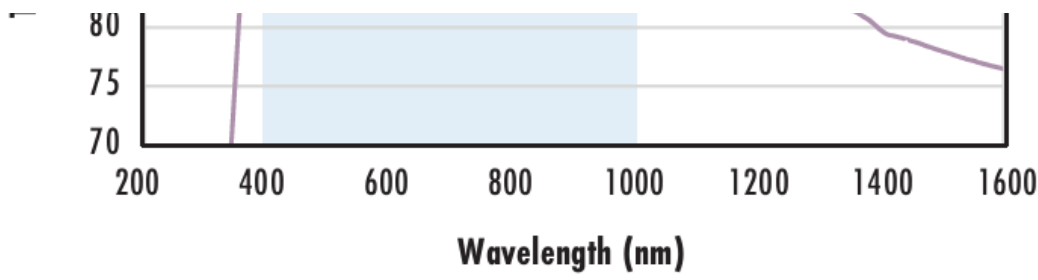
Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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

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

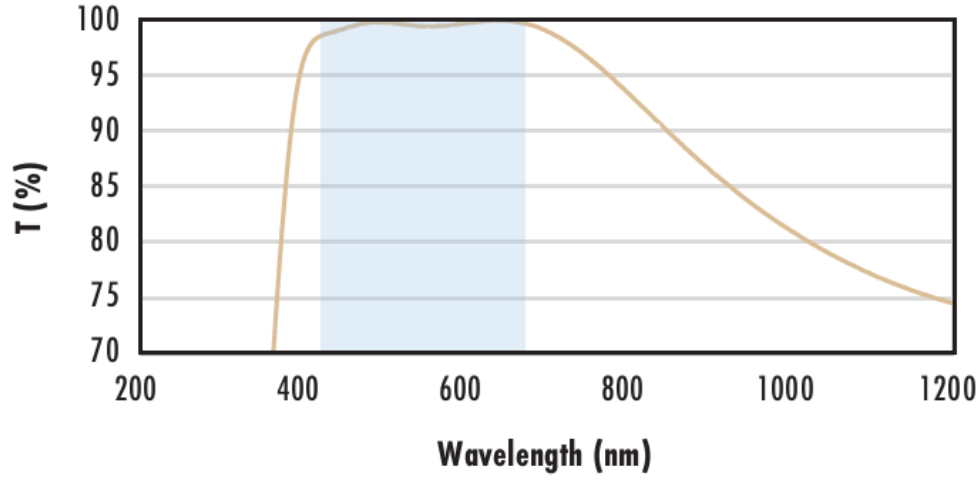
$$R_{avg} \leq 1.25\% @ 400 - 870\text{nm}$$

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



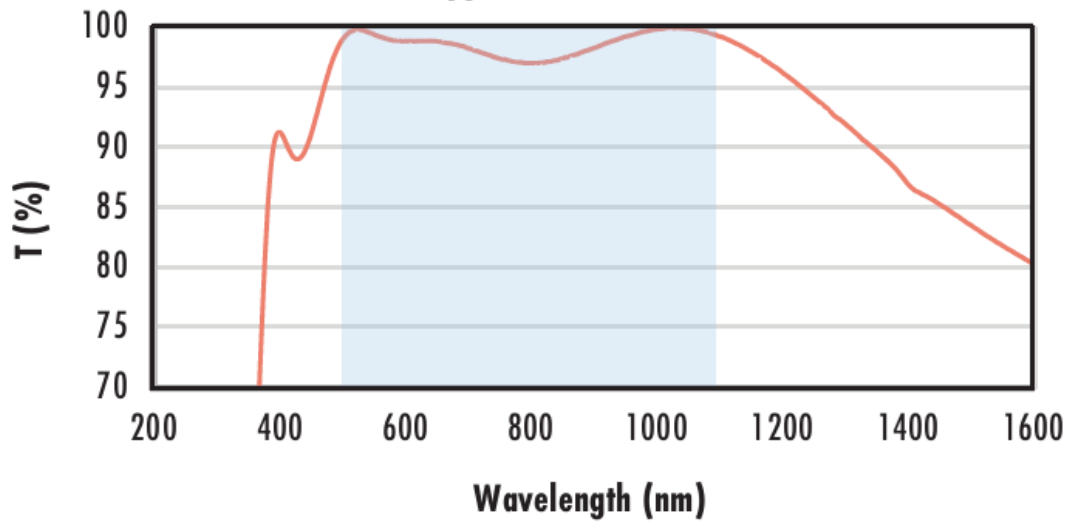
Data outside this range is not guaranteed and is for reference only.  
[Click Here to Download Data](#)

**N-BK7 with VIS 0° Coating  
Typical Transmission**



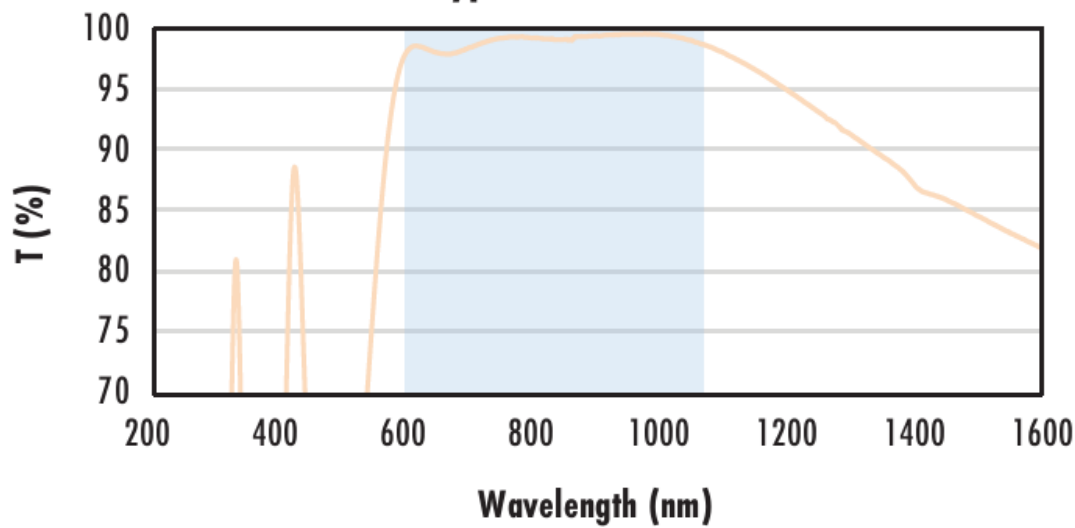
Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.  
 The blue shaded region indicates the coating design wavelength range, with the following specification:  
 $R_{avg} \leq 0.4\% @ 425 - 675nm$   
 Data outside this range is not guaranteed and is for reference only.  
[Click Here to Download Data](#)

**N-BK7 with YAG-BBAR Coating  
Typical Transmission**



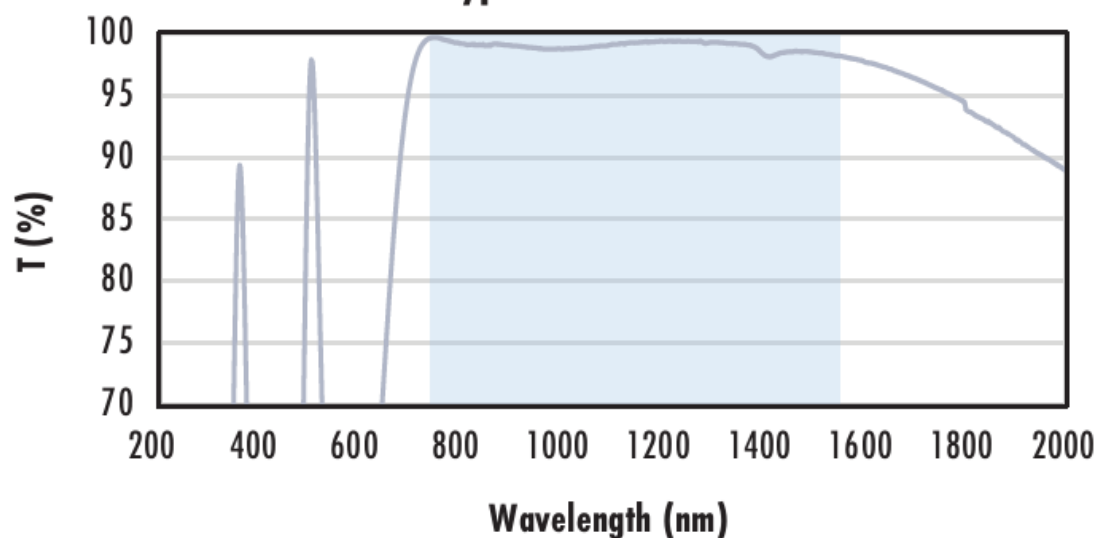
Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.  
 The blue shaded region indicates the coating design wavelength range, with the following specification:  
 $R_{abs} \leq 0.25\% @ 532nm$   
 $R_{abs} \leq 0.25\% @ 1064nm$   
 $R_{avg} \leq 1.0\% @ 500 - 1100nm$   
 Data outside this range is not guaranteed and is for reference only.  
[Click Here to Download Data](#)

**N-BK7 with NIR I Coating  
Typical Transmission**



Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.  
 The blue shaded region indicates the coating design wavelength range, with the following specification:  
 $R_{avg} \leq 0.5\% @ 600 - 1050nm$   
 Data outside this range is not guaranteed and is for reference only.  
[Click Here to Download Data](#)

**N-BK7 with NIR II Coating  
Typical Transmission**



Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.  
 The blue shaded region indicates the coating design wavelength range, with the following specification:  
 $R_{abs} \leq 1.5\% @ 750 - 800nm$   
 $R_{abs} \leq 1.0\% @ 800 - 1550nm$   
 $R_{avg} \leq 0.7\% @ 750 - 1550nm$   
 Data outside this range is not guaranteed and is for reference only.  
[Click Here to Download Data](#)

## 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

---