

TECHSPEC<sup>®</sup> 3mm Dia. x 4.5mm FL Uncoated, Double-Convex Lens



Stock **#32-022** 20+ In Stock

[Other Coating Options](#)

-

1

+

€52<sup>.53</sup>

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| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-9        | €52,53 each                   |
| Qty 10-24      | €47,38 each                   |
| Qty 25-99      | €41,97 each                   |
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Prices shown are exclusive of VAT/local taxes

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SPECIFICATIONS

General

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Double-Convex Lens               | Type:                                       |
| Physical & Mechanical Properties |                                             |
| 3.00 +0.0/-0.025                 | Diameter (mm):                              |
| 30-45, typical                   | Centering (arcmin):                         |
| Protective as needed             | Bevel:                                      |
| 2.00                             | Center Thickness CT (mm):                   |
| ±0.05                            | Center Thickness Tolerance (mm):            |
| 1.47                             | Edge Thickness ET (mm):                     |
| 2.5                              | Clear Aperture CA (mm):                     |
| Optical Properties               |                                             |
| 3.78                             | Back Focal Length BFL (mm):                 |
| 4.50                             | Effective Focal Length EFL (mm):            |
| Uncoated                         | Coating:                                    |
| N-BK7                            | Substrate: <input type="checkbox"/>         |
| 20-10                            | Surface Quality:                            |
| 1.5λ                             | Power (P-V) @ 632.8nm:                      |
| λ/4                              | Irregularity (P-V) @ 632.8nm:               |
| 4.29                             | Radius R <sub>1</sub> =R <sub>2</sub> (mm): |
| 1.5                              | f/#:                                        |
| 587.6                            | Focal Length Specification Wavelength (nm): |
| ±1                               | Focal Length Tolerance (%):                 |
| 0.33                             | Numerical Aperture NA:                      |
| 350 - 2200                       | Wavelength Range (nm):                      |
| Regulatory Compliance            |                                             |
| Compliant                        | RoHS 2015:                                  |
| View                             | Certificate of Conformance:                 |
| Compliant                        | Reach 235:                                  |

## PRODUCT DETAILS

- Ideal for Imaging Applications
- Minimize Aberrations Including Spherical and Coma
- [UV Fused Silica DCX Lenses](#) Available
- Anti-Reflection Coating Options: [MgF<sub>2</sub>](#), [VIS 0°](#), [VIS-NIR](#), [NIR I](#), [NIR II](#), [VIS-EXT](#), and [YAG-BBAR](#)

TECHSPEC® Uncoated 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 canceled due to the symmetric lens design. TECHSPEC® Uncoated Double-Convex Lenses resist the effects from various aberrations in a lens design that are ultimately seen in performance and affect modulation transfer function (MTF), spot size, telecentricity, depth of field (DOF), and others. These lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

## TECHNICAL INFORMATION



N-BK7

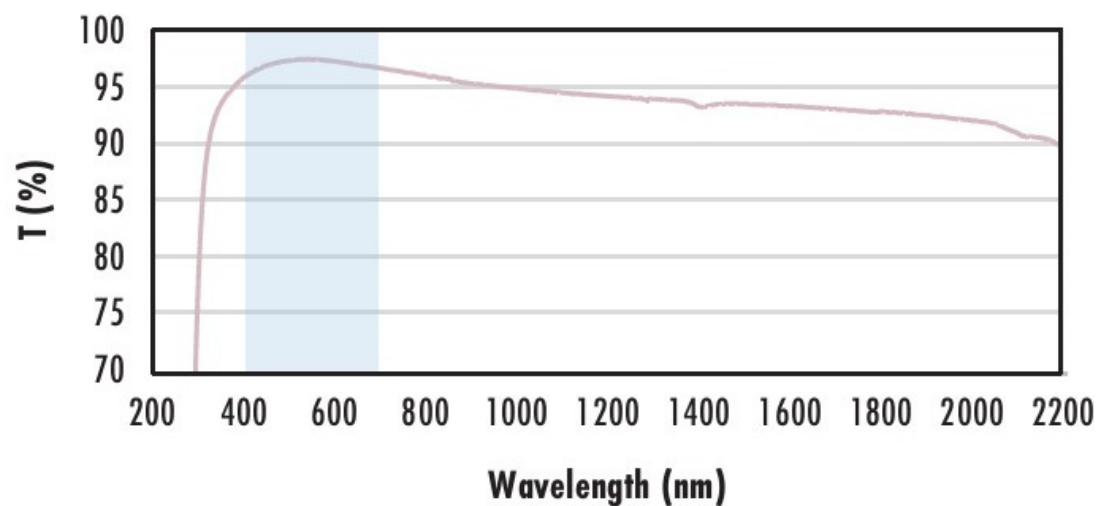
### Uncoated N-BK7 Typical Transmission



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.

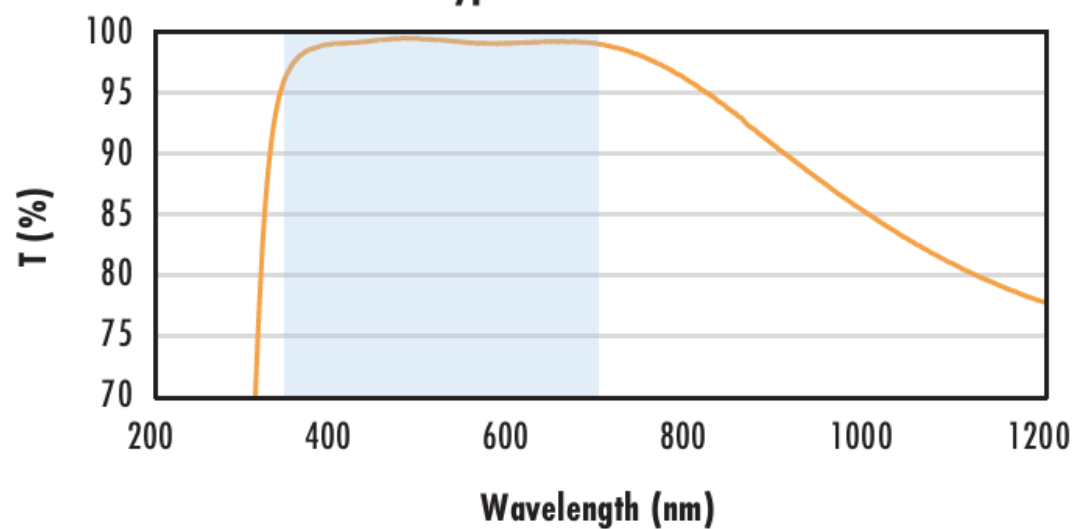
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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

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### 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.

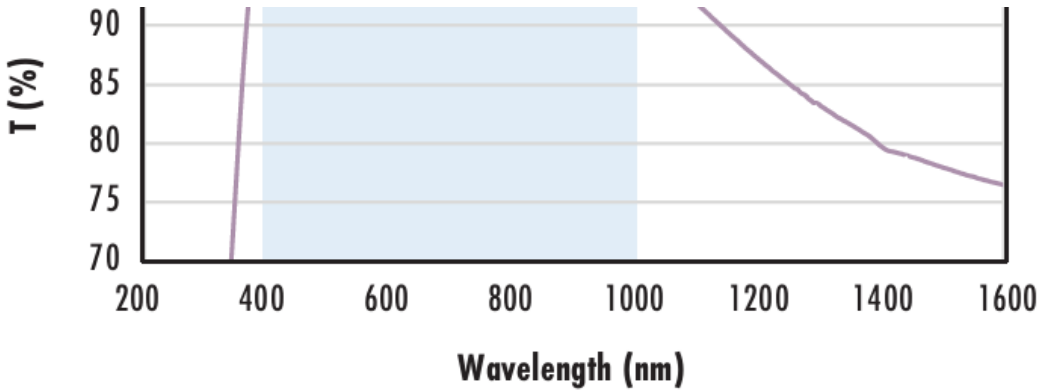
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### N-BK7 with VIS-NIR Coating Typical Transmission



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:

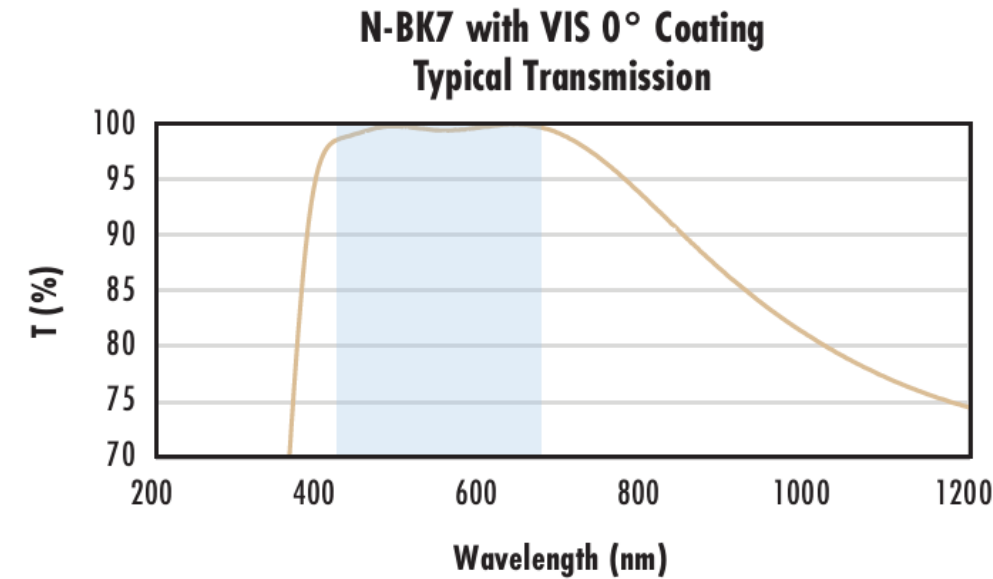


wavelength range, with the following specification:

$R_{abs} \leq 0.25\%$  @ 880nm  
 $R_{avg} \leq 1.25\%$  @ 400 - 870nm  
 $R_{avg} \leq 1.25\%$  @ 890 - 1000nm

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

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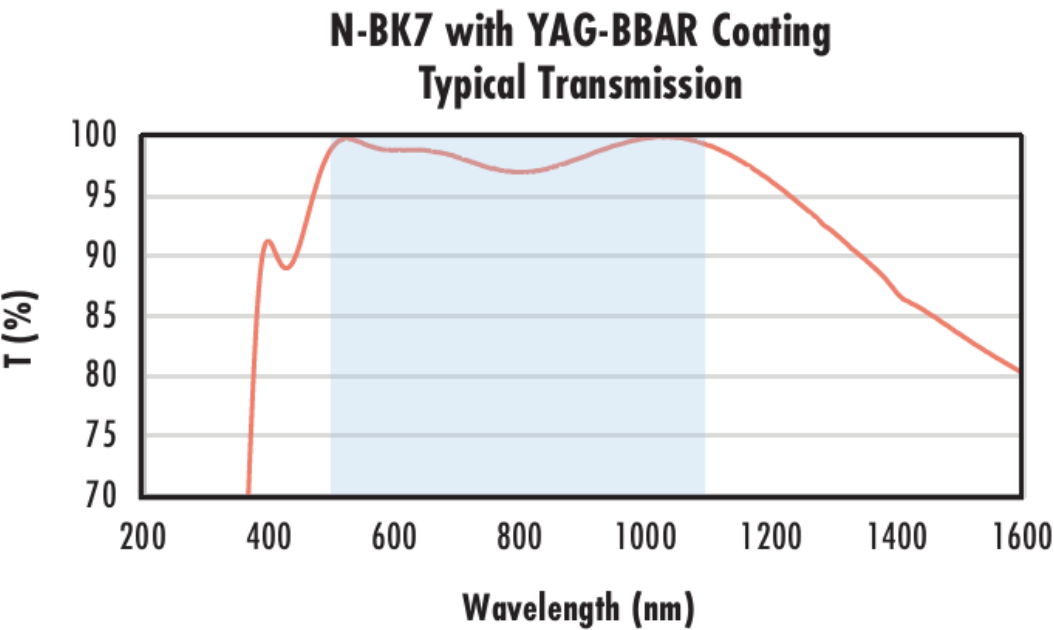
Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.

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.

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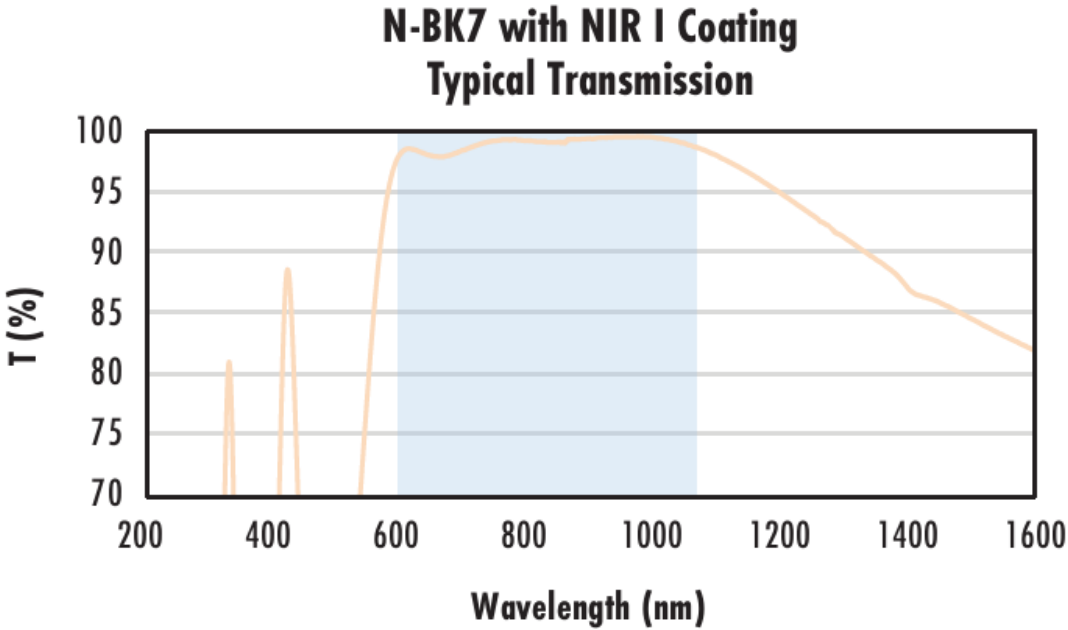
Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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.

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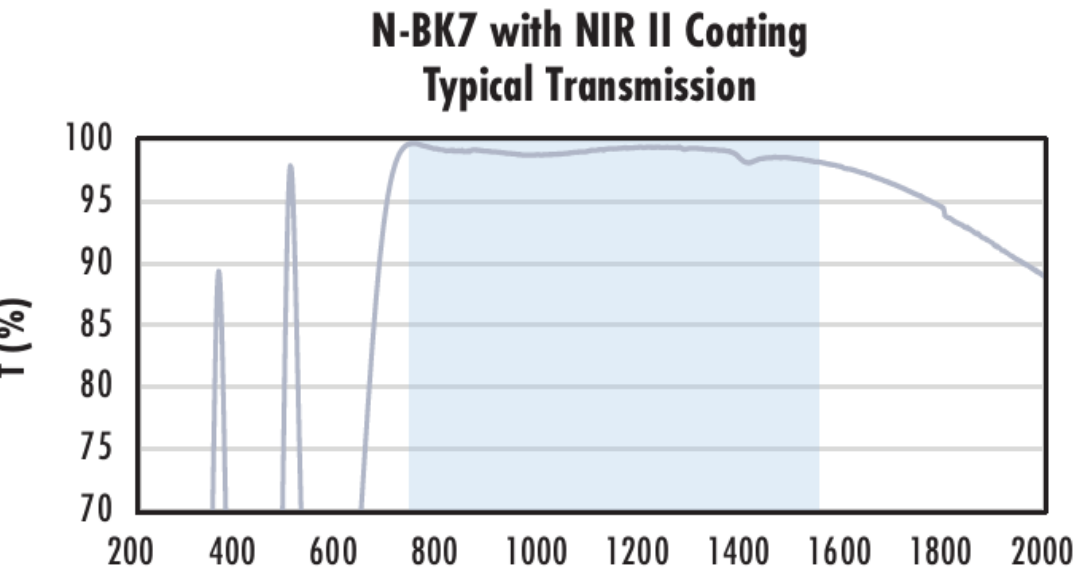
Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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](#)



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.

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Wavelength (nm)

## 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](#).