

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



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-

1

+

€47<sup>12</sup>

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| Qty 1-9        | €47,12 each                   |
| Qty 10-24      | €42,23 each                   |
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SPECIFICATIONS

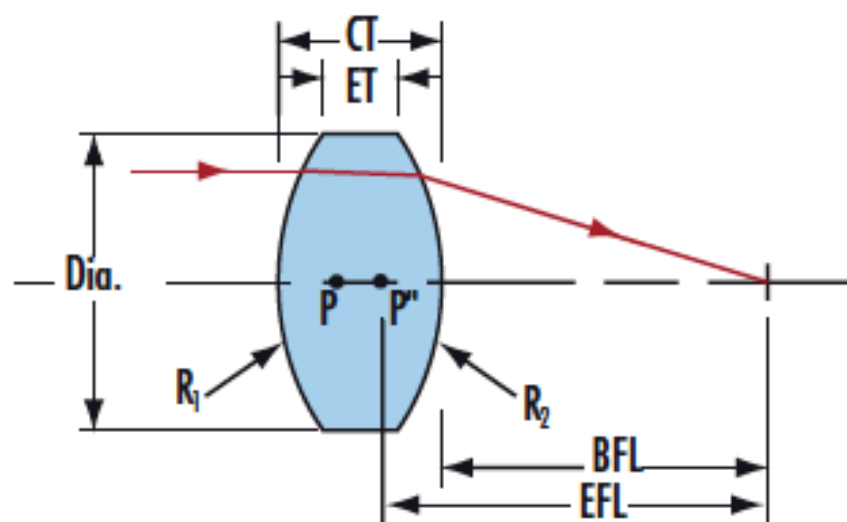
General

|                                                       |  |                                                                                                                        |
|-------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------|
| Double-Convex Lens                                    |  | Type:                                                                                                                  |
| Physical & Mechanical Properties                      |  |                                                                                                                        |
| Diameter (mm):                                        |  | 20.00 +0.0/-0.025                                                                                                      |
| Centering (arcmin):                                   |  | <1                                                                                                                     |
| Center Thickness CT (mm):                             |  | 3.50                                                                                                                   |
| Center Thickness Tolerance (mm):                      |  | ±0.10                                                                                                                  |
| Edge Thickness ET (mm):                               |  | 1.52                                                                                                                   |
| Clear Aperture CA (mm):                               |  | 19.00                                                                                                                  |
| Optical Properties                                    |  |                                                                                                                        |
| Back Focal Length BFL (mm):                           |  | 48.84                                                                                                                  |
| Effective Focal Length EFL (mm):                      |  | 50.00                                                                                                                  |
| Coating:                                              |  | NIR II (750-1550nm)                                                                                                    |
| Coating Specification:                                |  | R <sub>abs</sub> ≤1.5% @ 750 - 800nm<br>R <sub>abs</sub> ≤1.0% @ 800 - 1550nm<br>R <sub>avg</sub> ≤0.7% @ 750 - 1550nm |
| Substrate: <input type="checkbox"/>                   |  | N-BK7                                                                                                                  |
| Surface Quality:                                      |  | 40-20                                                                                                                  |
| Power (P-V) @ 632.8nm:                                |  | 1.5λ                                                                                                                   |
| Irregularity (P-V) @ 632.8nm:                         |  | λ/4                                                                                                                    |
| Radius R <sub>1</sub> =R <sub>2</sub> (mm):           |  | 51.08                                                                                                                  |
| f/#:                                                  |  | 2.5                                                                                                                    |
| Focal Length Specification Wavelength (nm):           |  | 587.6                                                                                                                  |
| Focal Length Tolerance (%):                           |  | ±1.00                                                                                                                  |
| Numerical Aperture NA:                                |  | 0.20                                                                                                                   |
| Wavelength Range (nm):                                |  | 750 - 1550                                                                                                             |
| Damage Threshold, Reference: <input type="checkbox"/> |  | 8 J/cm <sup>2</sup> @ 1064nm, 10ns                                                                                     |
| Regulatory Compliance                                 |  |                                                                                                                        |
| RoHS 2015:                                            |  | Compliant                                                                                                              |
| Certificate of Conformance:                           |  | View                                                                                                                   |
| Reach 235:                                            |  | Compliant                                                                                                              |

## PRODUCT DETAILS

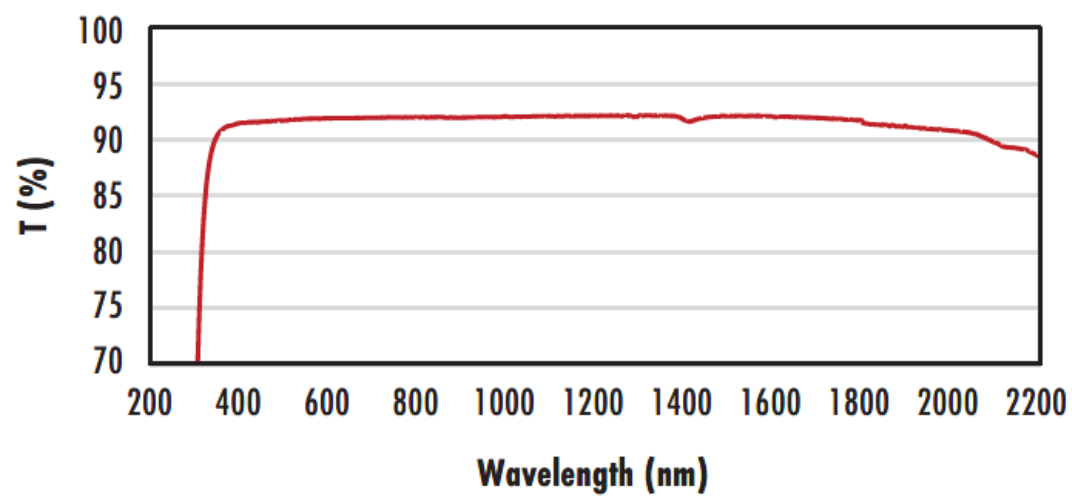
- AR Coated to Provide <0.7% Reflectance per Surface for 750 - 1550nm
  - Minimize Aberrations Including Spherical and Coma
  - [UV Fused Silica DCX Lenses](#) Available
  - Other Coating Options Available: [Uncoated](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR I](#), [VIS-EXT](#), [VIS-NIR](#), and [YAG-BBAR](#)
- TECHSPEC® NIR II 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 II Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

## TECHNICAL INFORMATION



## N-BK7

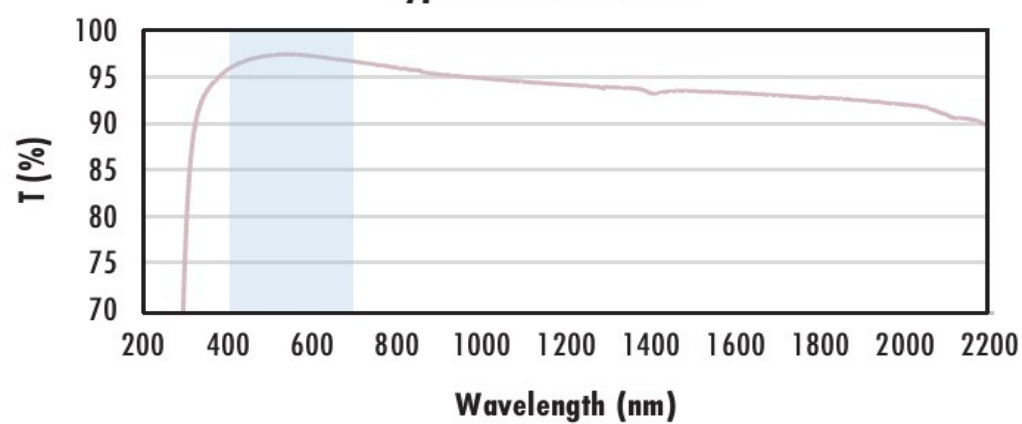
### Uncoated N-BK7 Typical Transmission



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

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### 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.

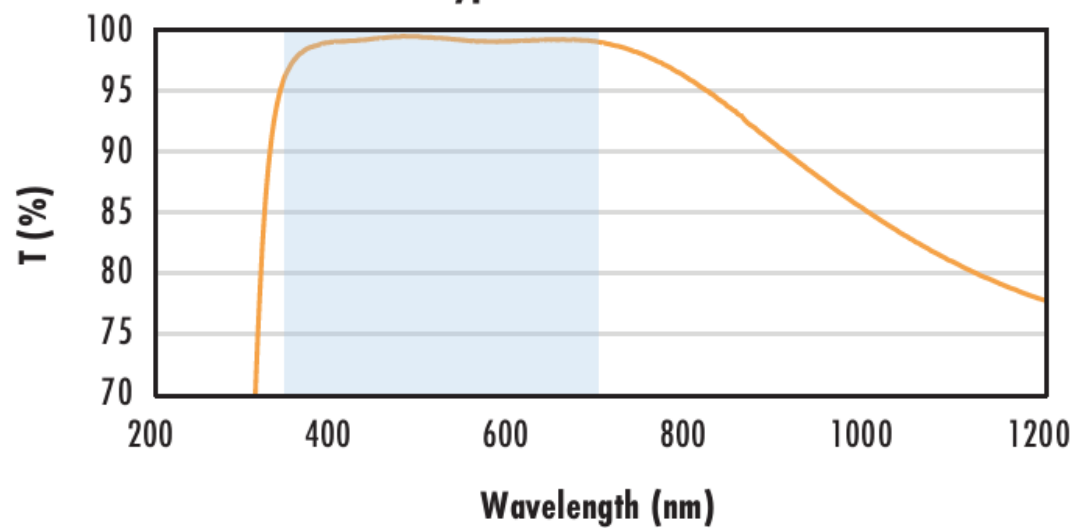
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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

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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.

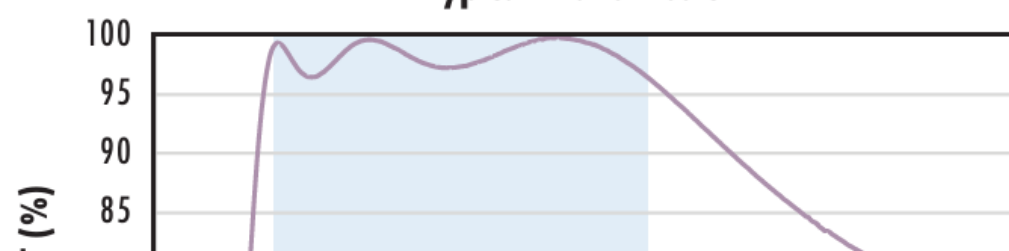
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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

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



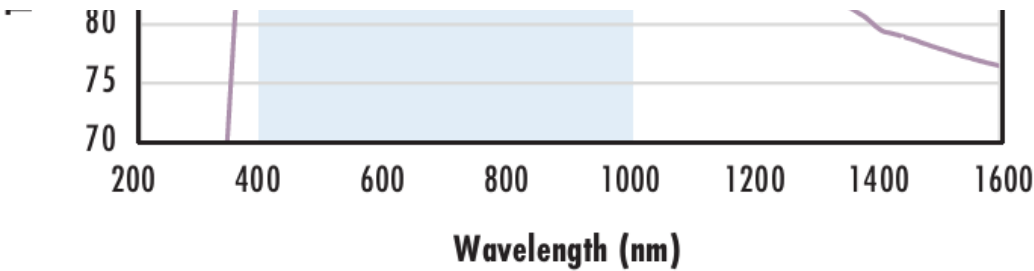
Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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

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

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

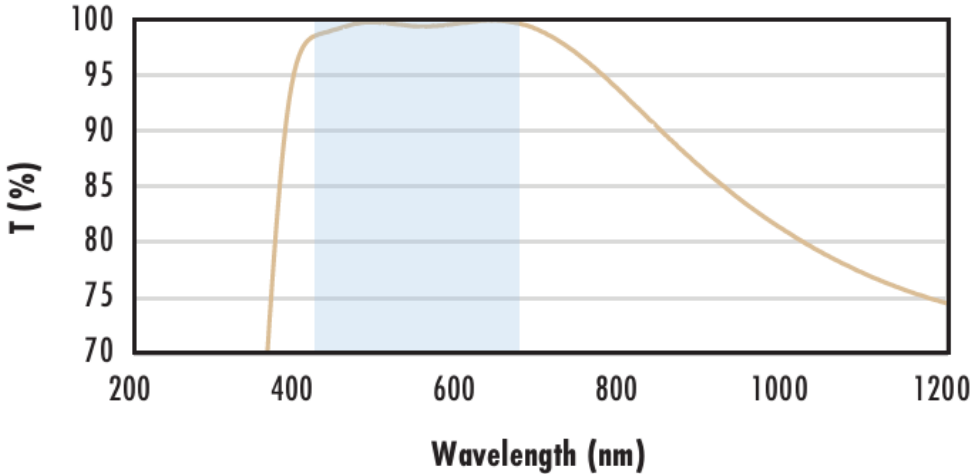
$R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}$



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

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**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.

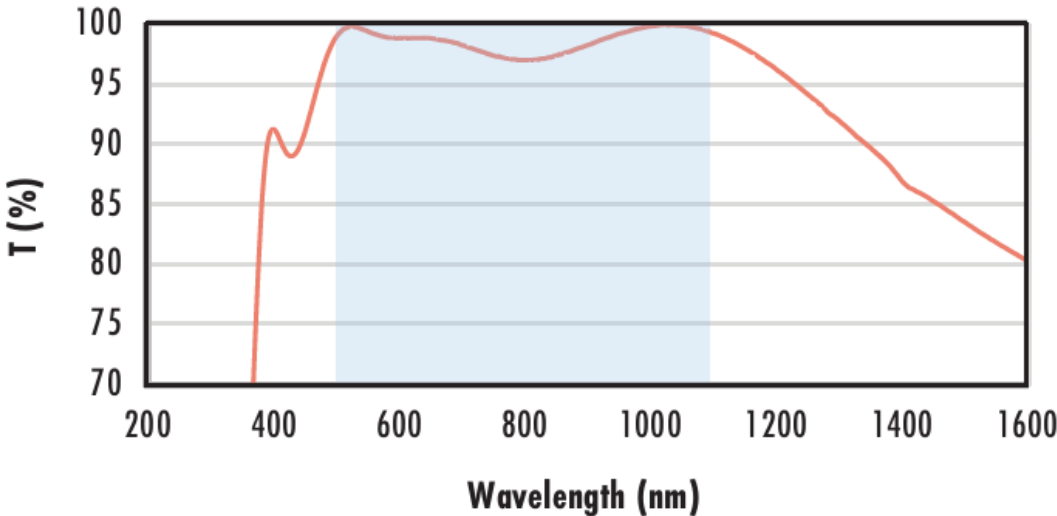
The blue shaded region indicates the coating design wavelength range, with the following specification:

$$R_{avg} \leq 0.4\% \text{ @ } 425 - 675\text{nm}$$

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

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**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:

$$R_{abs} \leq 0.25\% \text{ @ } 532\text{nm}$$

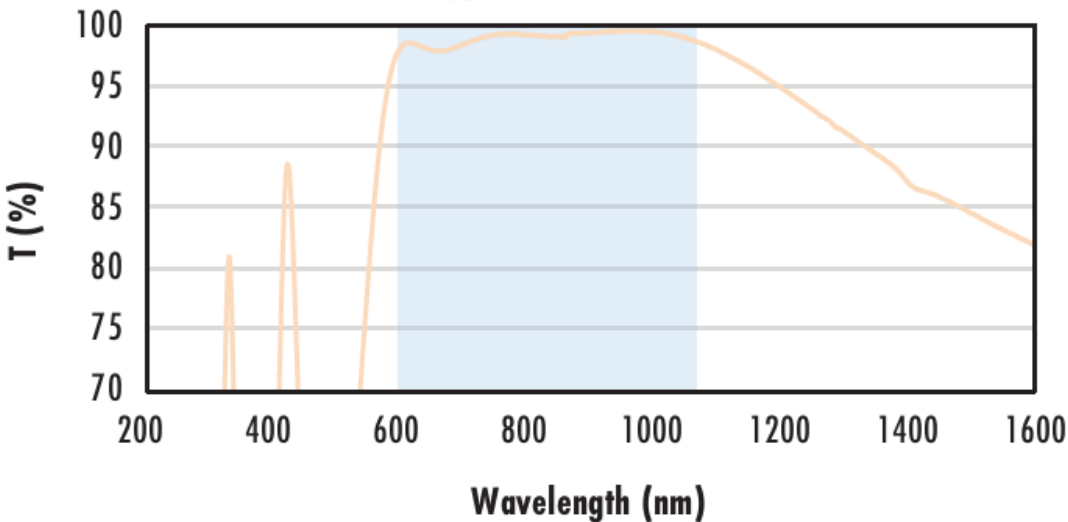
$$R_{abs} \leq 0.25\% \text{ @ } 1064\text{nm}$$

$$R_{avg} \leq 1.0\% \text{ @ } 500 - 1100\text{nm}$$

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

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**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.

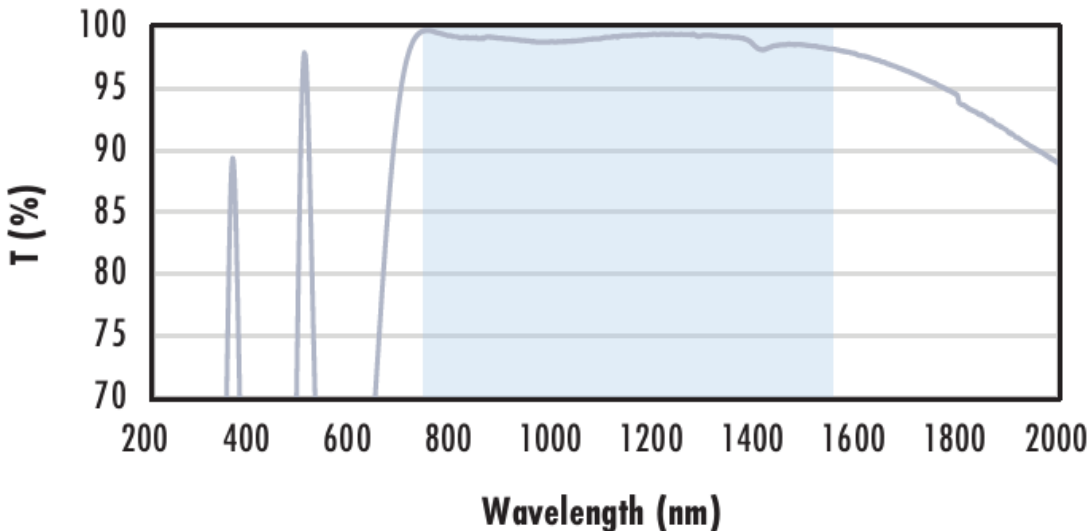
The blue shaded region indicates the coating design wavelength range, with the following specification:

$$R_{avg} \leq 0.5\% \text{ @ } 600 - 1050\text{nm}$$

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

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**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:

$$R_{abs} \leq 1.5\% \text{ @ } 750 - 800\text{nm}$$

$$R_{abs} \leq 1.0\% \text{ @ } 800 - 1550\text{nm}$$

$$R_{avg} \leq 0.7\% \text{ @ } 750 - 1550\text{nm}$$

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

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## 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

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