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/ [VIS-EXT Coated Double-Convex](#)

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**TECHSPEC®**

15mm Dia. x 60mm

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Stock #89-164-INK [CONTACT US](#) [Other Coating Options](#)

1 €62<sup>00</sup>

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Volume Pricing

Qty 1-9	each	€62,00
Qty 10-24	each	€56,00
Qty 25-99	each	€49,75
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Prices shown are exclusive of VAT/local taxes

Product Downloads

- STEP:stp
- Curve:pdf
- PDF Drawing:pdf
- ISO 10110 Drawing
- IGES:igs
- Curve (xlsx):xlsx
- Zemax:zar
- Zemax:zmx
- eDrawing:eprt
- Code V:seq
- EO Spec Sheet

General

Type: Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):	15.00 ±0.025	Centering (arcmin):	<1
Bevel:	Protective as needed	Center Thickness CT (mm):	3.00
Center Thickness Tolerance (mm):	±0.10	Edge Thickness ET (mm):	2.08
Clear Aperture CA (mm):	14.00		

Optical Properties

Back Focal Length BFL (mm):	59.00	Effective Focal Length EFL (mm):	60.00
Coating:	VIS-EXT (350-700nm)	Coating Specification:	R <sub>avg</sub> <0.5% @ 350 - 700nm
Substrate: ⓘ	<b>N-BK7</b>	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):	61.5	f/#:	4.00

<b>Focal Length Specification Wavelength (nm):</b>	587.6	<b>Focal Length Tolerance (%):</b>	±1
<b>Numerical Aperture NA:</b>	0.13	<div style="border: 1px solid black; padding: 5px; background-color: white;"> <p>Please select your shipping country to view the most accurate inventory information, and to determine the correct Edmund Optics sales office for your order.</p> <p><b>Select Your Country/Region:</b></p> </div>	
<b>Regulatory Compliance</b>			
<b>Certificate of Conformance:</b>	<a href="#">View</a>		

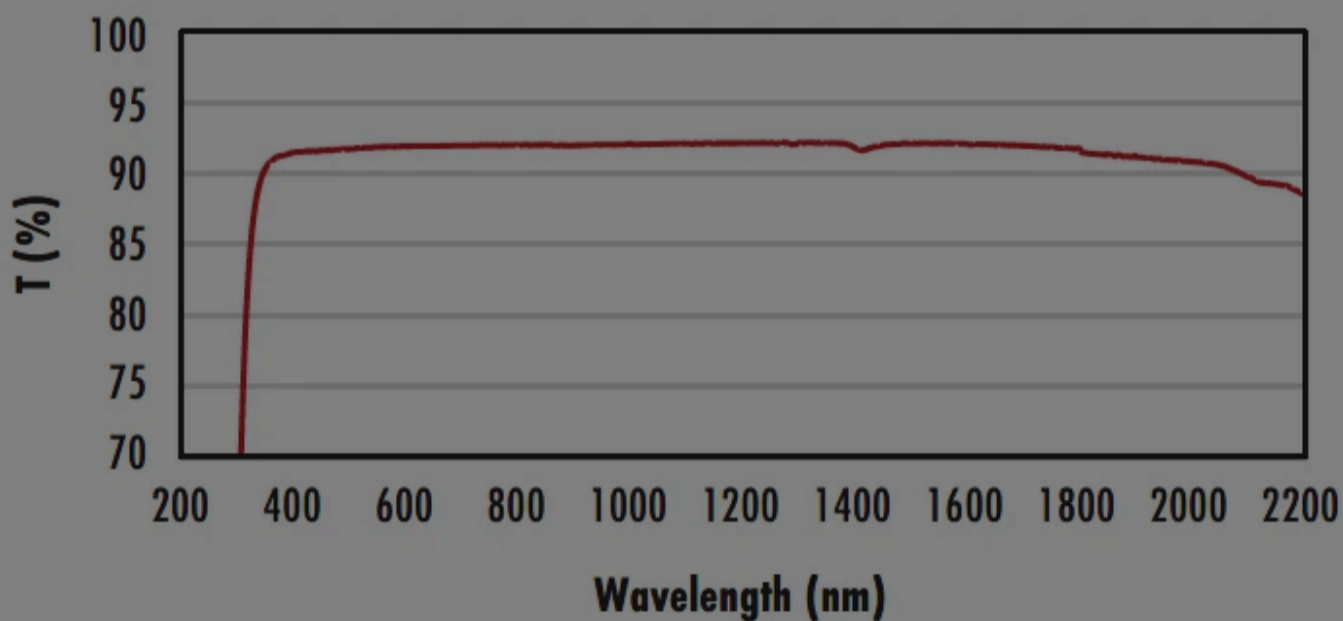
## Product Details

- AR Coated to Provide <0.5% Reflectance per Surface for 350 - 700nm
- 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, NIR II, VIS-NIR,** and **YAG-BBAR**

TECHSPEC® VIS-EXT 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 VIS-EXT Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

## Technical Information

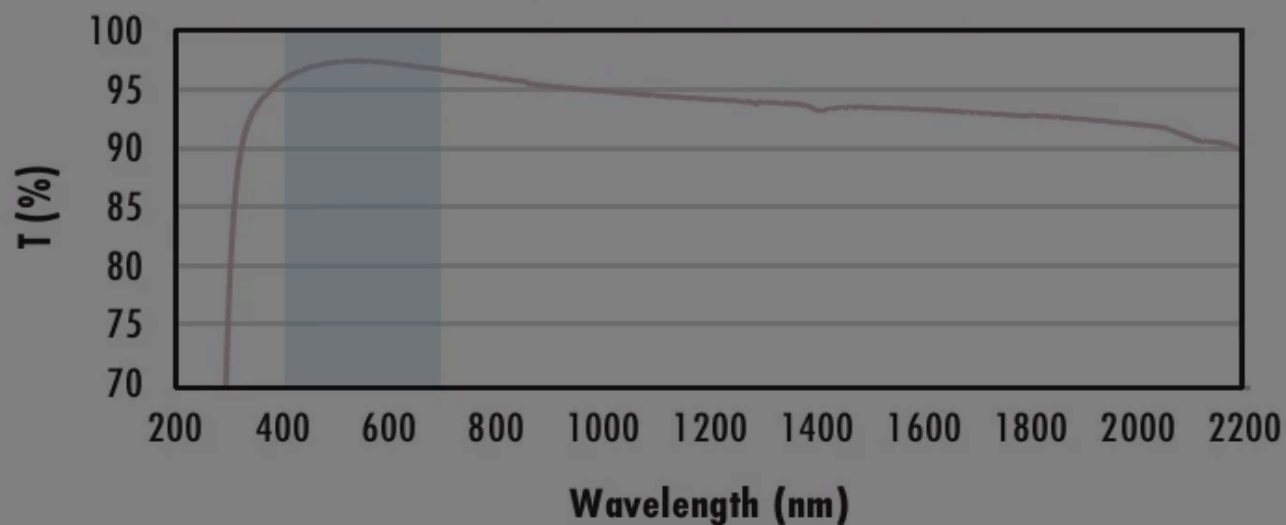
### Uncoated N-BK7 Typical Transmission



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.

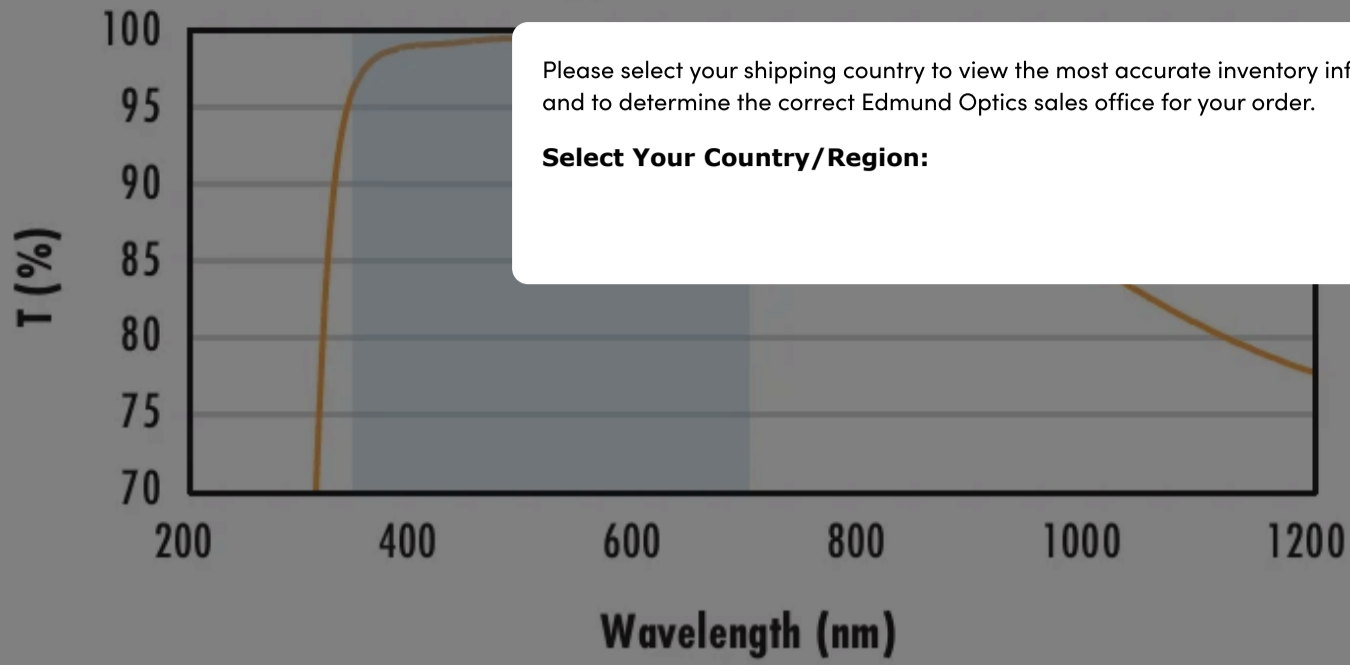
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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.

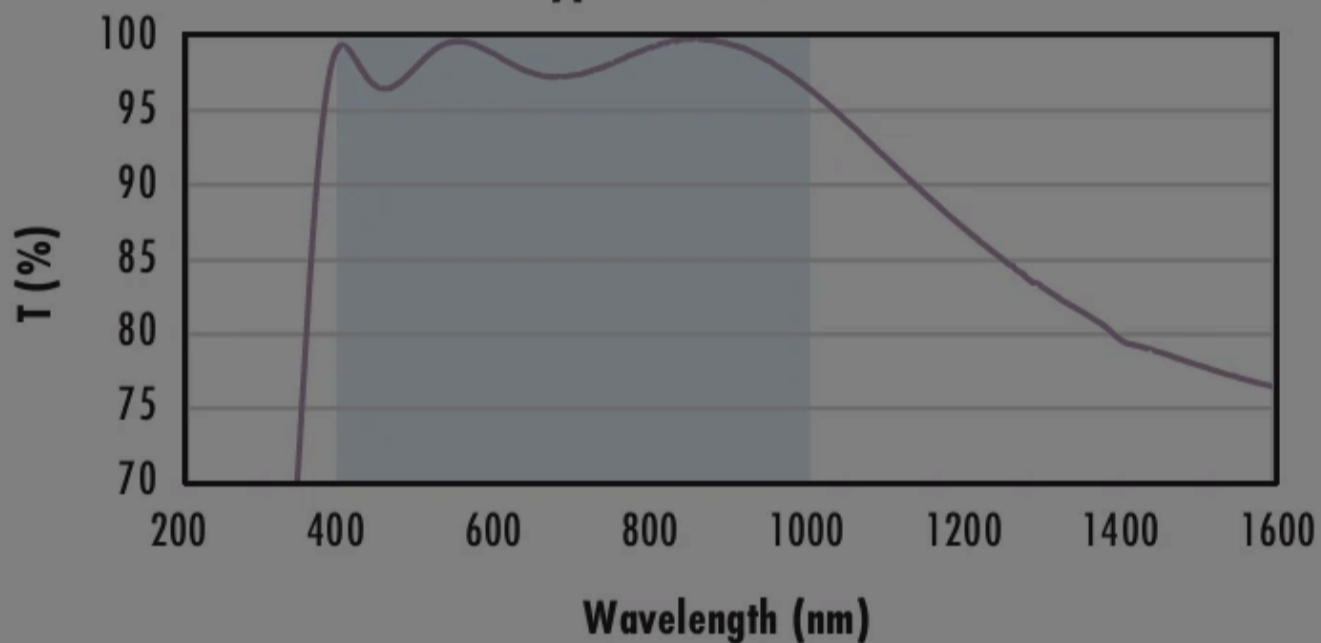
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

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

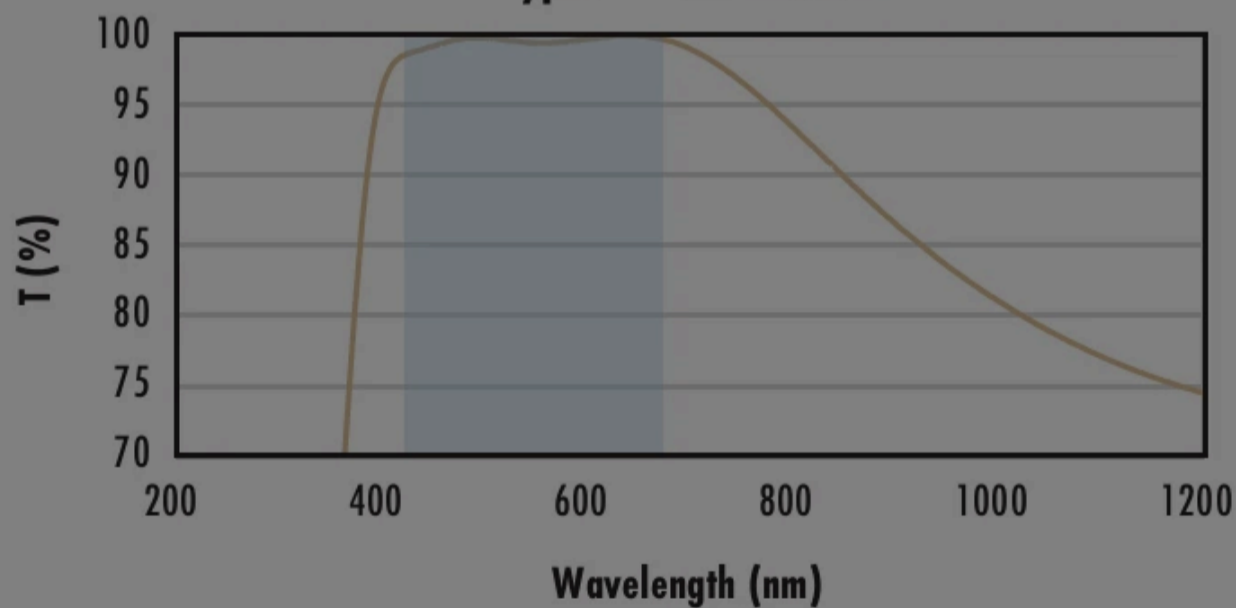
$$R_{avg} \leq 1.25\% \text{ @ } 400 - 870\text{nm}$$

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

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

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



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

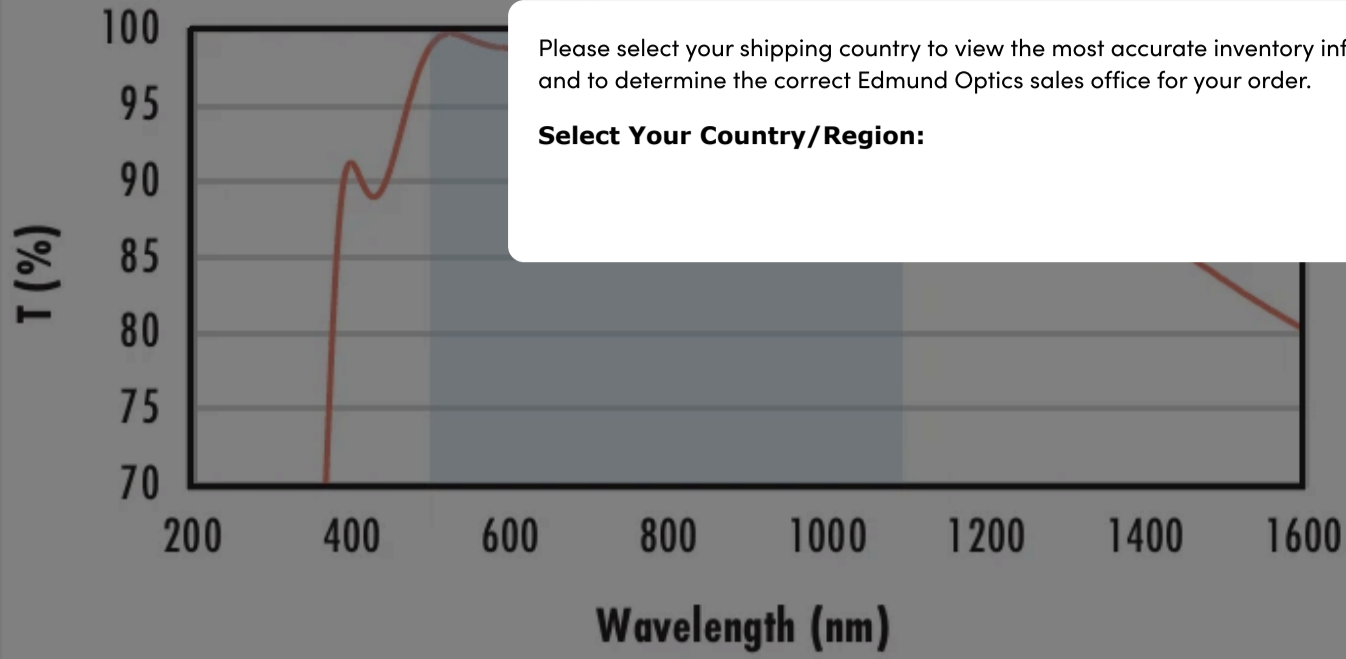
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

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

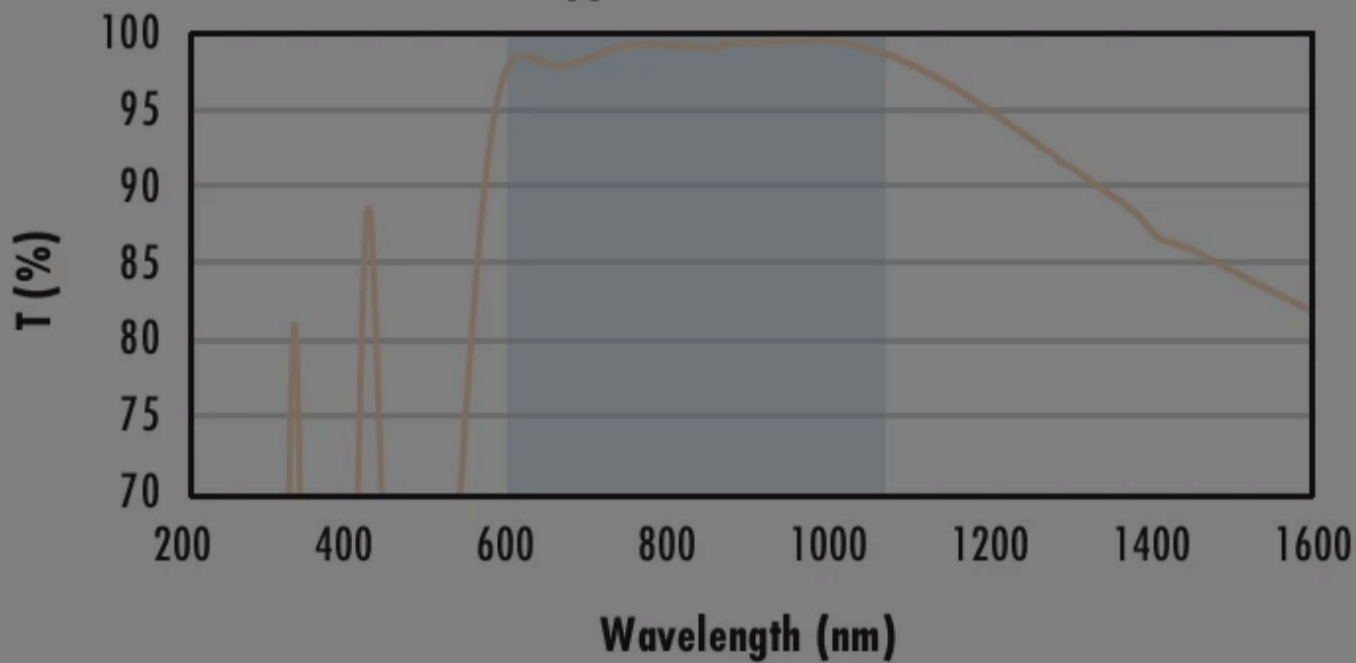
$$R_{abs} \leq 0.25\% @ 1064\text{nm}$$

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

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.

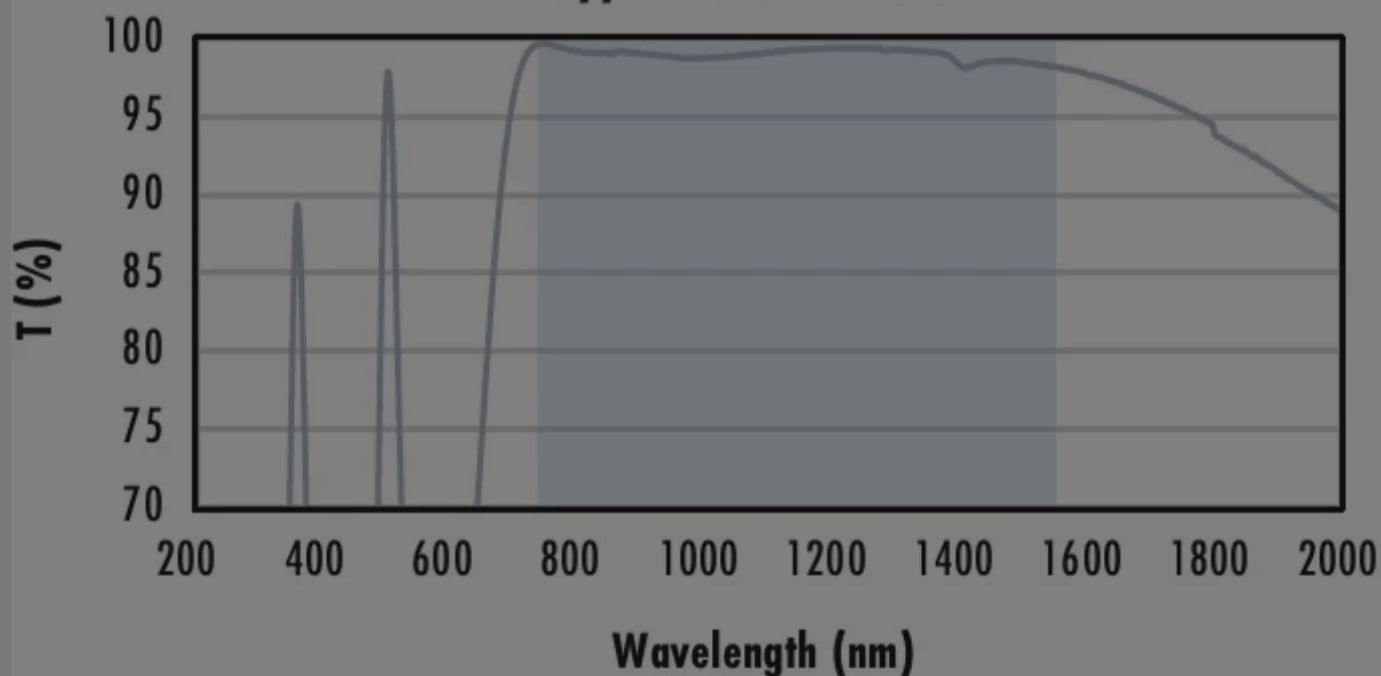
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

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

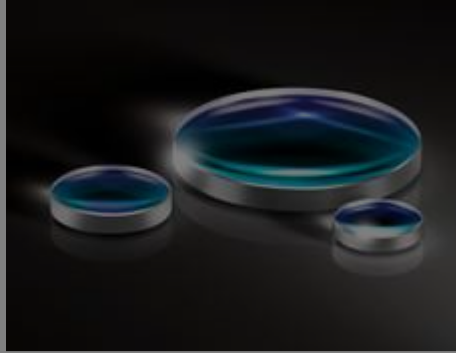
$$R_{abs} \leq 1.0\% @ 800 - 1550\text{nm}$$

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

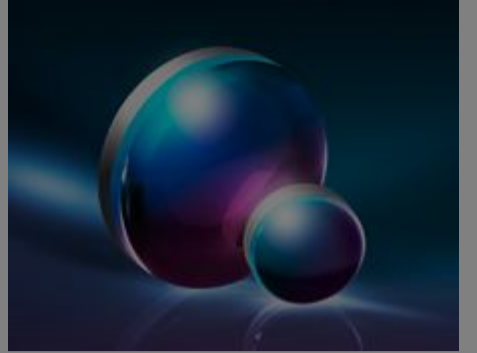
Data outside this range is not guaranteed and is for reference only.

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## Related Products



UV Fused Silica Double-Convex (DCX) Lenses



Double-Convex (DCX) Lenses

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### Compatible Mounts

	Title	Type	Compare	Stock Number	Price	Buy
		15.0mm Optic Dia., Optic Mount	Fixed	#64-557	€32,75 Request Quote	11 In Stock 1
		15mm Inner Single Optic Mount	Fixed	#38-752	€41,00 Request Quote	7 In Stock 1

Check out our full selection of mounts [here](#).

## Resources

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- Application Note
- Technical Tool
- Trending in Optics
- FAQ
- Glossary
- Video

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Anti-Reflection (AR) Coatings

**APPLICATION NOTE**  
An Introduction to Optical Coatings

**APPLICATION NOTE**  
Understanding Optical Specifications

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Lens Geometry Performance Comparison

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