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## TECHSPEC® 50mm Diameter NIR I, Ultra-Thin N-BK7 Window

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Ultra-Thin N-BK7 Windows

Stock **#22-051** **8 In Stock**

⊖ 1 ⊕ **\$327<sup>.00</sup>**

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Volume Pricing	
Qty 1-5	<b>\$327.60</b> each
Qty 6-25	<b>\$256.20</b> each
Qty 26-49	<b>\$246.40</b> each
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### General

Protective Window **Type:**

Glass **Type of Window:**

### Physical & Mechanical Properties

**Clear Aperture CA (mm):**

45.00	<b>Diameter (mm):</b>
50.00 +0.00/-0.10	
	<b>Thickness (mm):</b>
0.20 ±0.025	
	<b>Bevel:</b>
Protective as needed	
	<b>Edges:</b>
Fine Ground	
	<b>Parallelism (arcsec):</b>
<30	
	<b>Poisson's Ratio:</b>
0.21	
	<b>Young's Modulus (GPa):</b>
82	
	<b>Knoop Hardness (kg/mm<sup>2</sup>):</b>
610.00	

## Optical Properties

	<b>Coating:</b>
NIR I (600-1050nm)	
	<b>Substrate:</b> <input type="checkbox"/>
<b>N-BK7</b>	
	<b>Index of Refraction (n<sub>d</sub>):</b>
1.516	
	<b>Surface Quality:</b>
40-20	
	<b>Transmitted Wavefront, P-V:</b>
λ/2	
	<b>Abbe Number (v<sub>d</sub>):</b>
64.17	
	<b>Coating Specification:</b>
R <sub>avg</sub> ≤0.5% @ 600 - 1050nm	
	<b>Wavelength Range (nm):</b>
600 - 1050	
	<b>Damage Threshold, By Design:</b> <input type="checkbox"/>
7 J/cm <sup>2</sup> @ 1064nm, 10ns	

## Material Properties

	<b>Density (g/cm<sup>3</sup>):</b>
2.51	
	<b>Coefficient of Thermal Expansion CTE (10<sup>-6</sup>/°C):</b>
7.1 (-30 to +70°C)	
8.3 (+20 to +300°C)	

## Regulatory Compliance

	<b>RoHS 2015:</b>
<b>Compliant</b>	
	<b>Certificate of Conformance:</b>
<b>View</b>	
	<b>Reach 235:</b>
<b>Compliant</b>	

### Need different specs or modifications?

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](#).

## Product Details

- Ultra-Thin 0.20mm Thickness
- Precision N-BK7 Substrate
- Extremely Lightweight

TECHSPEC® Ultra-Thin N-BK7 Windows are our thinnest windows available and are at least 1/10 the thickness of our traditional N-BK7 windows. Their extremely thin designs make them ideal for both weight and size-sensitive applications. Additionally, their high tolerance design yields minimal beam distortion and scatter. TECHSPEC® Ultra-Thin N-BK7 Windows are available uncoated or with a MgF2 anti-reflection coating. For custom sizes or coating options, please contact our [Sales Department](#).

**Note:** The Ultra-Thin N-BK7 Windows are very fragile. Handle these windows with care.

# Technical Information

N-BK7

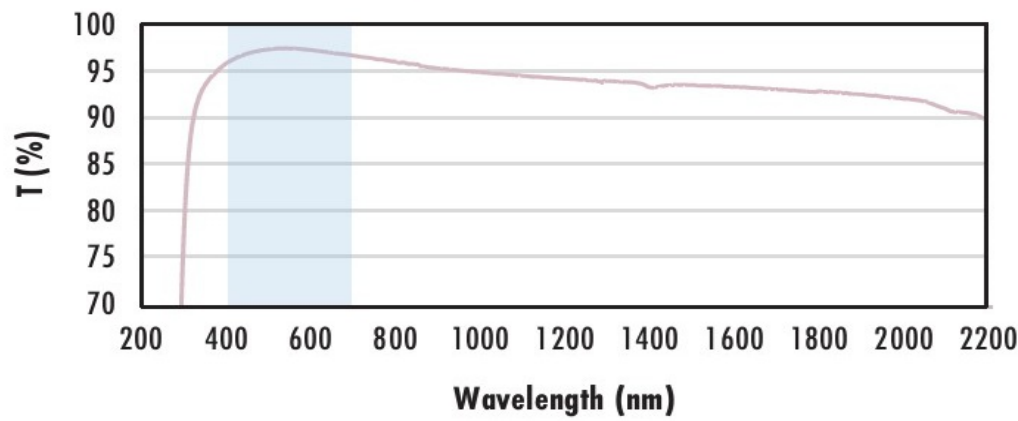
## Uncoated N-BK7 Typical Transmission



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.

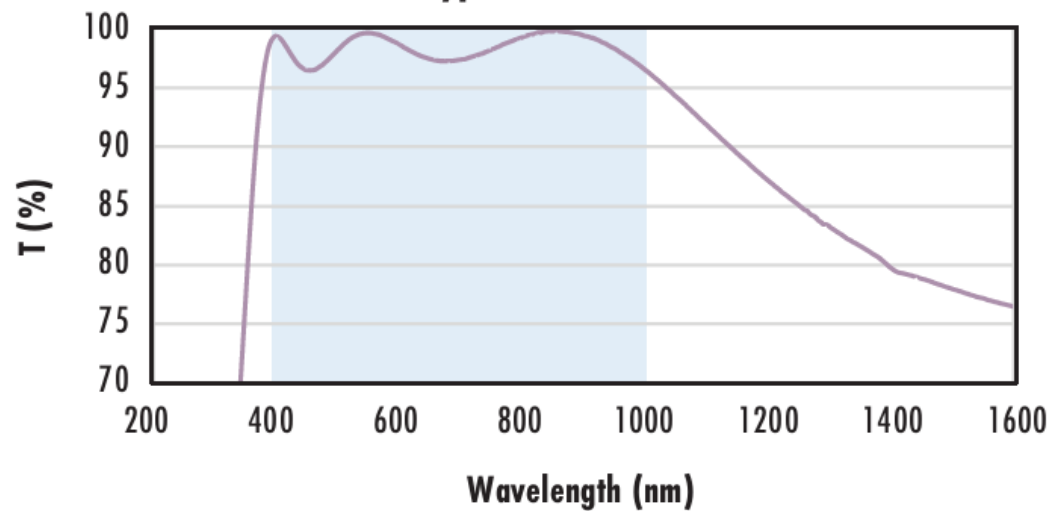
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

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

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

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

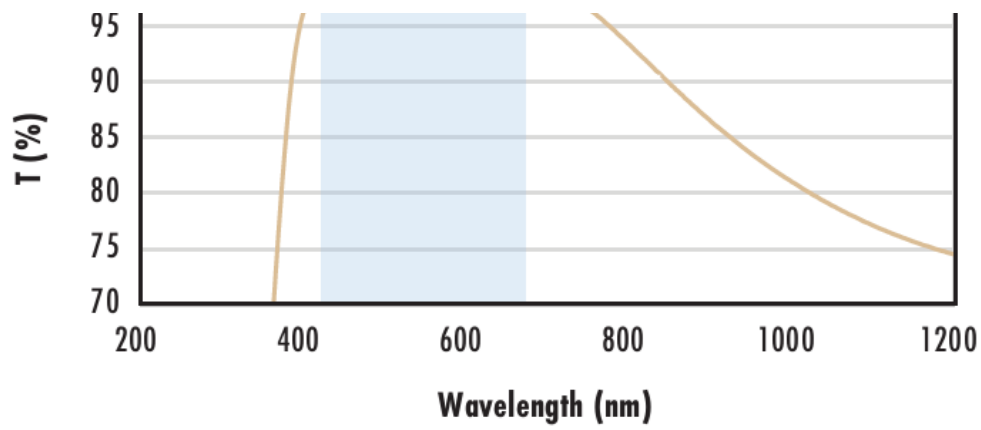
Data outside this range is not guaranteed and is for reference only.

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



Typical transmission of a 3mm thick N-BK7 window with VIS



0° (425-675nm) coating at 0° AOI.

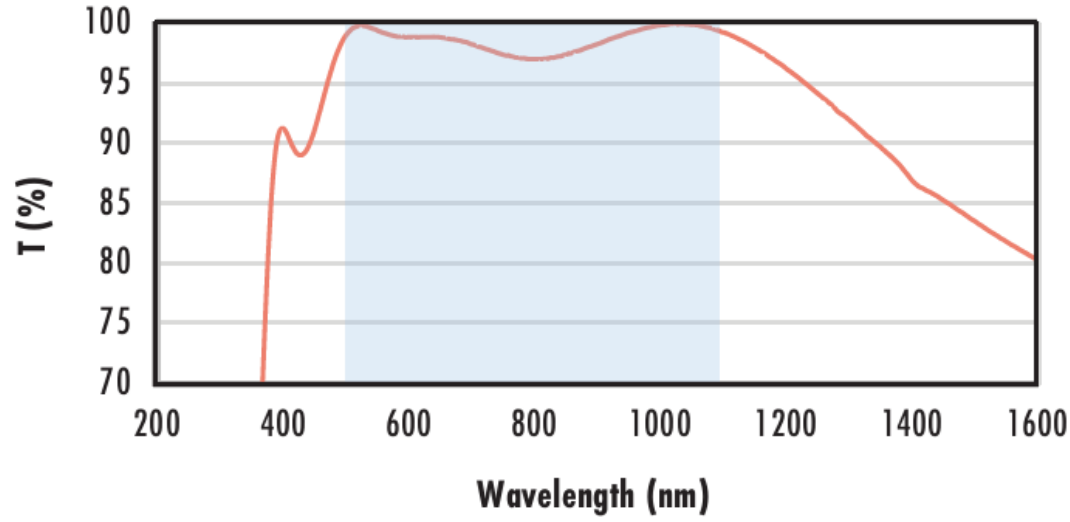
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

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

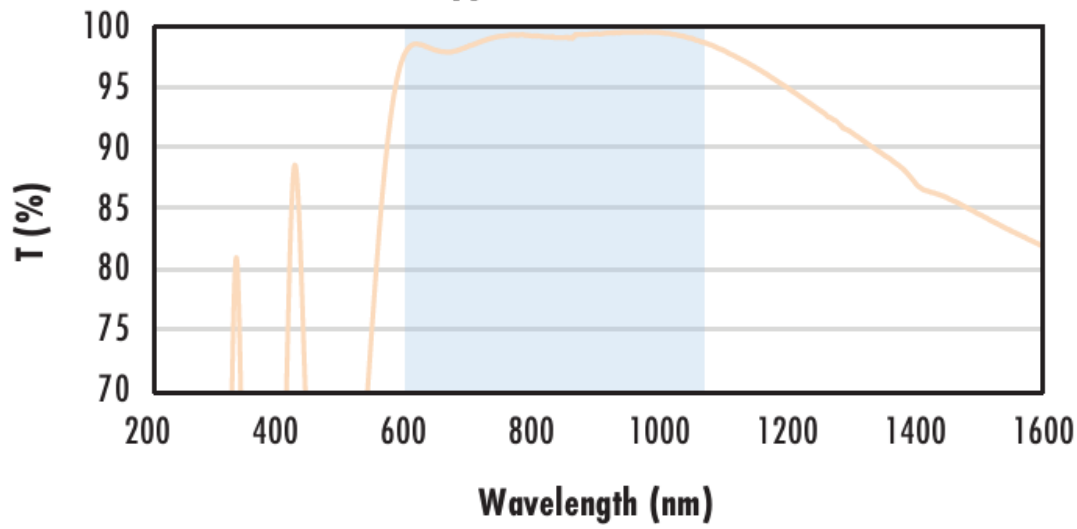
$$R_{abs} \leq 0.25\% @ 1064\text{nm}$$

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

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.

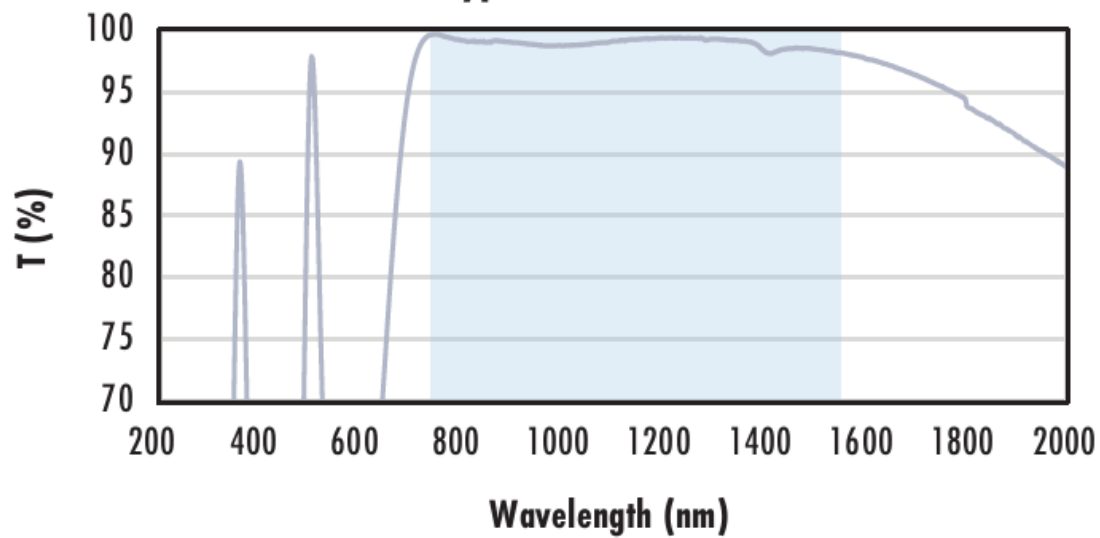
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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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