

TECHSPEC<sup>®</sup> 20mm Dia., 3mm Thick, VIS-EXT Coated,  $\lambda$ /4 N-BK7 Window



Stock #13-293 2 In Stock

-

1

+

S\$152<sup>.60</sup>

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| 139.00 | #Sorting: |
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General

|                   |       |
|-------------------|-------|
| Protective Window | Type: |
|-------------------|-------|

Physical & Mechanical Properties

|       |                         |
|-------|-------------------------|
| 18.00 | Clear Aperture CA (mm): |
|-------|-------------------------|

|                      |                          |
|----------------------|--------------------------|
| 20.00 +0.0/-0.25     | Diameter (mm):           |
| 3.00 ±0.20           | Thickness (mm):          |
| <1                   | Parallelism (arcmin):    |
| Protective as needed | Bevel:                   |
| 90                   | Clear Aperture (%):      |
| Fine Ground          | Edges:                   |
| 0.21                 | Poisson's Ratio:         |
| 82                   | Young's Modulus (GPa):   |
| 610.00               | Knoop Hardness (kg/mm²): |

| Optical Properties                   |                                        |
|--------------------------------------|----------------------------------------|
| VS-EXT (350-700nm)                   | Coating:                               |
| N-BK7                                | Substrate: □                           |
| 1.516                                | Index of Refraction (n <sub>d</sub> ): |
| 60-40                                | Surface Quality:                       |
| 64.17                                | Abbe Number (v <sub>d</sub> ):         |
| R <sub>avg</sub> <0.5% @ 350 - 700nm | Coating Specification:                 |
| 350 - 700                            | Wavelength Range (nm):                 |
| λ/4                                  | Surface Flatness (P-V):                |
| 5 J/cm² @ 532nm, 10ns                | Damage Threshold, By Design:           |

| Material Properties                       |                                                              |
|-------------------------------------------|--------------------------------------------------------------|
| 2.51                                      | Density (g/cm³):                                             |
| 7.1 (-30 to +70°C)<br>8.3 (+20 to +300°C) | Coefficient of Thermal Expansion CTE (10 <sup>-6</sup> /°C): |

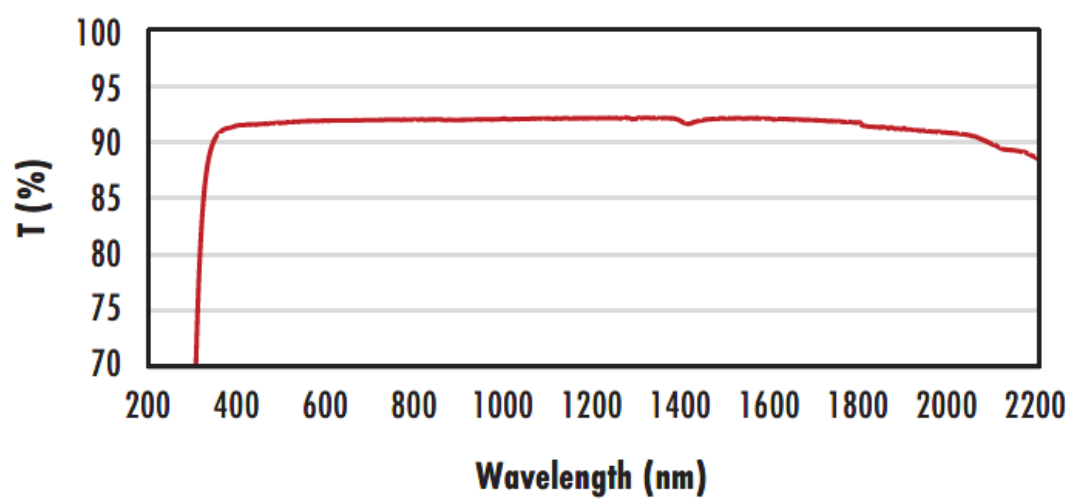
| Regulatory Compliance |                             |
|-----------------------|-----------------------------|
| Compliant             | RoHS 2015:                  |
| View                  | Certificate of Conformance: |
| Compliant             | Reach 235:                  |

## Product Details

- Circular and Rectangular Sizes from 2mm to 200mm
  - 8 Broadband Anti-Reflection Coating Options Available
  - World's Largest Selection of Standard N-BK7 Windows
  - Also Available with [Ultra-Thin N-BK7 Windows](#)
- TECHSPEC® λ/4 N-BK7 Precision Windows are ideally suited for industrial and low-power laser applications. The high tolerance design yields minimal beam distortion and scatter. Broadband coating options extend the range of these precision windows through the visible and near-infrared spectra. TECHSPEC® λ/4 N-BK7 Precision Windows are offered in circular and rectangular sizes ranging from 2mm to 200mm.
- Note:** New additions to this product family may be specified with a transmitted wavefront distortion (TWD) specification instead of a surface flatness. For more information on the difference between these two specifications, see our application note on [Understanding Optical Windows](#).

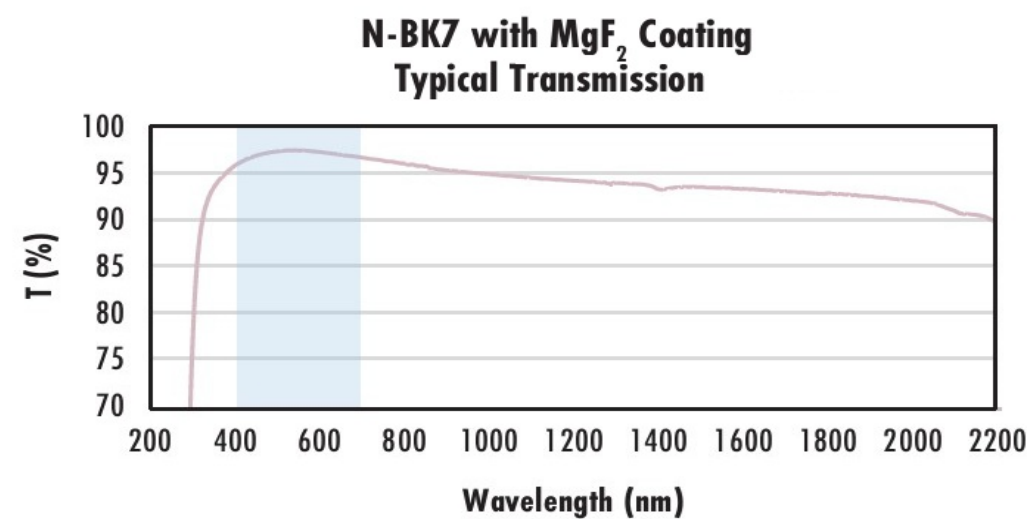
## Technical Information

| 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](#)



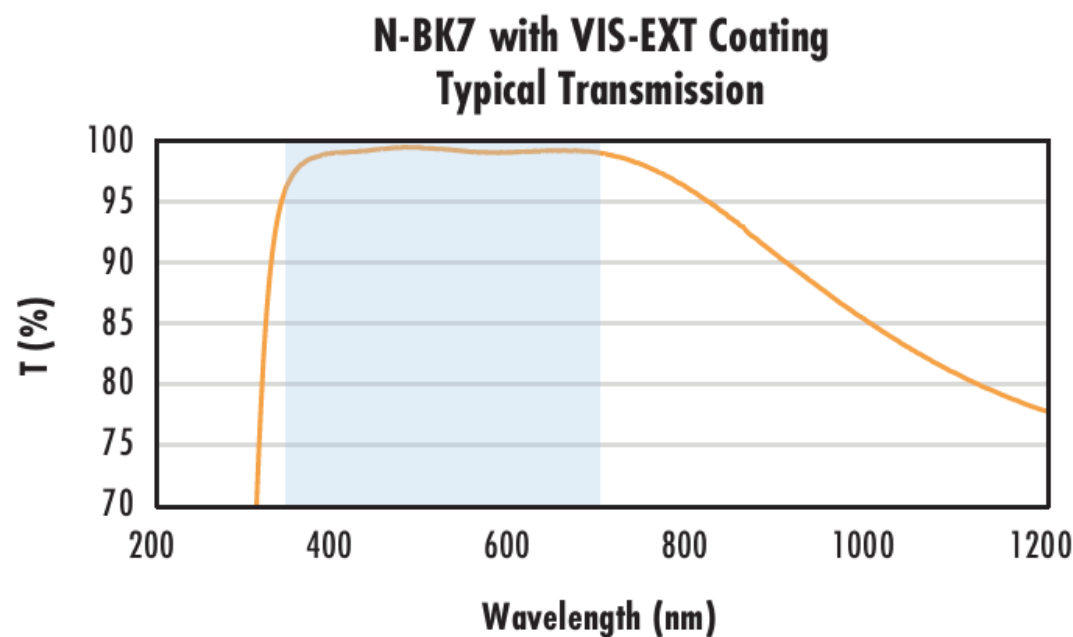
Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.

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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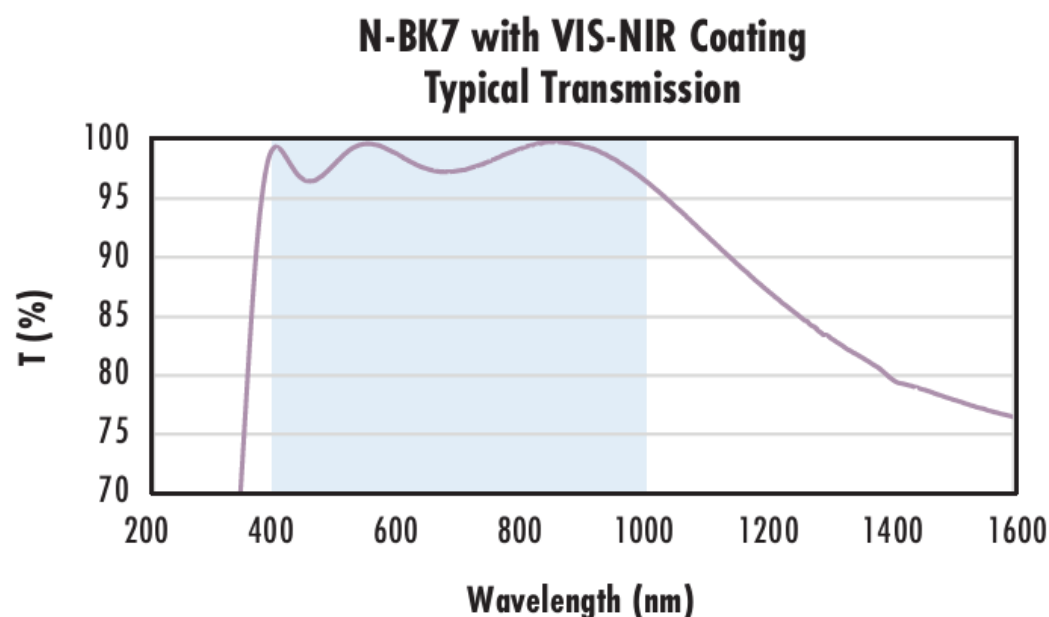
Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

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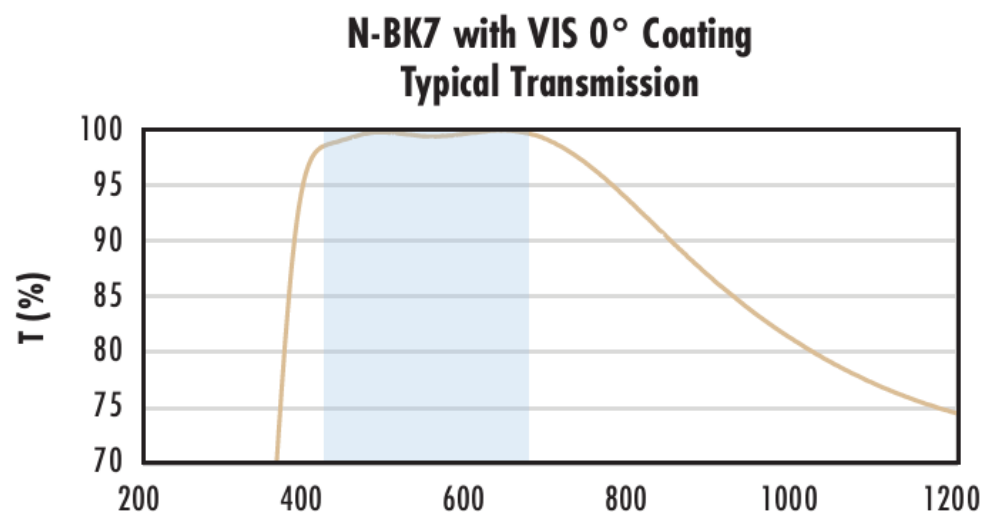
Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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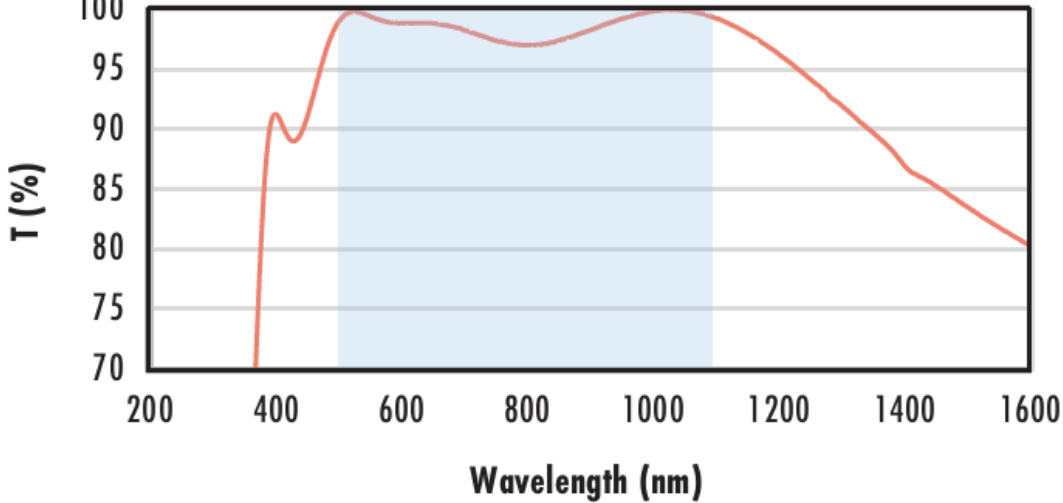
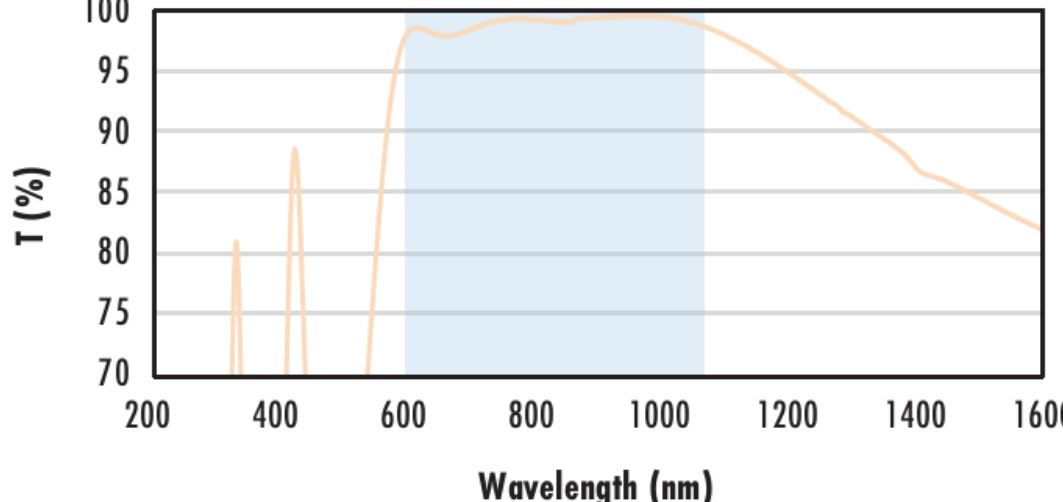
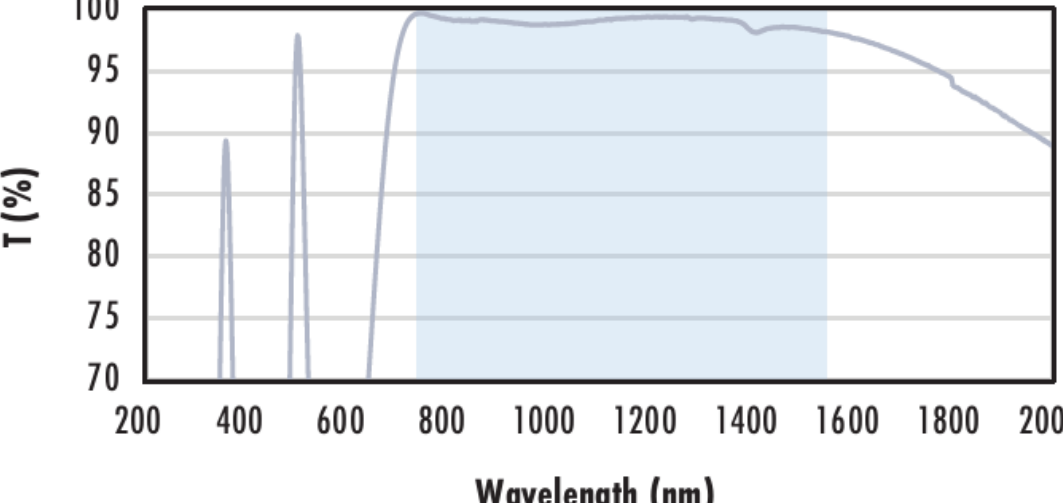
Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.

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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|                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>Wavelength (nm)</div><div><div>N-BK7 with YAG-BBAR Coating</div><div>Typical Transmission</div><div>T (%)</div><div>Wavelength (nm)</div></div></div> | <div>Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.</div> <div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div> <div><div><math>R_{abs} \leq 0.25\% \text{ @ } 532\text{nm}</math></div><div><math>R_{abs} \leq 0.25\% \text{ @ } 1064\text{nm}</math></div><div><math>R_{avg} \leq 1.0\% \text{ @ } 500 - 1100\text{nm}</math></div></div> <div>Data outside this range is not guaranteed and is for reference only.</div> <div><a href="#">Click Here to Download Data</a></div>           |
| <div><div>Wavelength (nm)</div><div><div>N-BK7 with NIR I Coating</div><div>Typical Transmission</div><div>T (%)</div><div>Wavelength (nm)</div></div></div>   | <div>Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.</div> <div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div> <div><math>R_{avg} \leq 0.5\% \text{ @ } 600 - 1050\text{nm}</math></div> <div>Data outside this range is not guaranteed and is for reference only.</div> <div><a href="#">Click Here to Download Data</a></div>                                                                                                                                                              |
| <div><div>Wavelength (nm)</div><div><div>N-BK7 with NIR II Coating</div><div>Typical Transmission</div><div>T (%)</div><div>Wavelength (nm)</div></div></div> | <div>Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.</div> <div>The blue shaded region indicates the coating design wavelength range, with the following specification:</div> <div><div><math>R_{abs} \leq 1.5\% \text{ @ } 750 - 800\text{nm}</math></div><div><math>R_{abs} \leq 1.0\% \text{ @ } 800 - 1550\text{nm}</math></div><div><math>R_{avg} \leq 0.7\% \text{ @ } 750 - 1550\text{nm}</math></div></div> <div>Data outside this range is not guaranteed and is for reference only.</div> <div><a href="#">Click Here to Download Data</a></div> |

## 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

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