

TECHSPEC® 50mm Dia., 4mm Thick, VIS-NIR Coated $\lambda/4$ N-BK7 Window



Stock #48-447 **20+ In Stock**

- 1 + €153.⁰⁰

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| Volume Pricing | |
|----------------|-------------------------------|
| Qty 1-5 | €153,00 each |
| Qty 6-25 | €122,00 each |
| Qty 26-49 | €114,00 each |
| Need More? | Request Quote |

! Prices shown are exclusive of VAT/local taxes

Product Downloads

General

Protective Window **Type:**

Glass **Type of Window:**

Physical & Mechanical Properties

45.00 **Clear Aperture CA (mm):**

| | |
|----------------------|--|
| 50.00 +0.0/-0.25 | Diameter (mm): |
| 4.00 ±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

| | |
|---|--|
| VIS-NIR (400-1000nm) | Coating: |
| N-BK7 | Substrate: <input type="checkbox"/> |
| 1.516 | Index of Refraction (n_d): |
| 60-40 | Surface Quality: |
| 64.17 | Abbe Number (v_d): |
| R _{abs} ≤0.25% @ 880nm R _{avg} ≤1.25% @ 400 - 870 nm R _{avg} ≤1.25% @ 890 - 1000nm | Coating Specification: |
| 400 - 1000 | Wavelength Range (nm): |
| λ/4 | Surface Flatness (P-V): |
| 5 J/cm ² @ 532nm, 10ns | Damage Threshold, By Design: <input type="checkbox"/> |

Material Properties

| | |
|---|---|
| 2.51 | Density (g/cm³): |
| 7.1 (-30 to +70°C) 8.3 (+20 to +300°C) | Coefficient of Thermal Expansion CTE (10⁻⁶/°C): |

Regulatory Compliance

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

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

- 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® M4 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 | |
|--|--|
| <p style="text-align: center;">Uncoated N-BK7 Typical Transmission</p>  | <p>Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV- NIR spectra.</p> <p>Click Here to Download Data</p> |
| <p style="text-align: center;">N-BK7 with MgF₂ Coating Typical Transmission</p>  | <p>Typical transmission of a 3mm thick N-BK7 window with MgF₂ (400-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p>$R_{avg} \leq 1.75\% @ 400 - 700\text{nm}$ (N-BK7)</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p>Click Here to Download Data</p> |
| <p style="text-align: center;">N-BK7 with VIS-EXT Coating Typical Transmission</p>  | <p>Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p>$R_{avg} \leq 0.5\% @ 350 - 700\text{nm}$</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p>Click Here to Download Data</p> |
| <p style="text-align: center;">N-BK7 with VIS-NIR Coating Typical Transmission</p>  | <p>Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p>$R_{abs} \leq 0.25\% @ 880\text{nm}$ $R_{avg} \leq 1.25\% @ 400 - 870\text{nm}$ $R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}$</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p>Click Here to Download Data</p> |

**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:

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

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

[Click Here to Download Data](#)

**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:

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

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

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

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

[Click Here to Download Data](#)

**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:

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

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

[Click Here to Download Data](#)

**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:

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

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

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

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

[Click Here to Download Data](#)

Coating Curves

Compatible Mounts

