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TECHSPEC<sup>®</sup> 9.0mm Dia. x 27.0mm FL, VIS-NIR Coated, Plano-Convex Lens



Stock **#45-478** 7 In Stock

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-

1

+

A\$74<sup>.00</sup>

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|----------------|-------------------------------|
| Qty 1-9        | A\$74.00 each                 |
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General

Type:

Plano-Convex Lens

Physical & Mechanical Properties

Diameter (mm):

9.00 +0.0/-0.025

|                      |                           |
|----------------------|---------------------------|
| <1                   | Centering (arcmin):       |
| 2.50 ±0.05           | Center Thickness CT (mm): |
| 1.75                 | Edge Thickness ET (mm):   |
| 8.1                  | Clear Aperture CA (mm):   |
| Protective as needed | Bevel:                    |

|                                                                                                                    |                                                       |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Optical Properties                                                                                                 |                                                       |
| 27.00 @ 587.6nm                                                                                                    | Effective Focal Length EFL (mm):                      |
| 25.34                                                                                                              | Back Focal Length BFL (mm):                           |
| VIS-NIR (400-1000nm)                                                                                               | Coating:                                              |
| R <sub>abs</sub> ≤0.25% @ 880nm<br>R <sub>avg</sub> ≤1.25% @ 400 - 870nm<br>R <sub>avg</sub> ≤1.25% @ 890 - 1000nm | Coating Specification:                                |
| N-BK7                                                                                                              | Substrate: <input type="checkbox"/>                   |
| 40-20                                                                                                              | Surface Quality:                                      |
| 1.5λ                                                                                                               | Power (P-V) @ 632.8nm:                                |
| λ/4                                                                                                                | Irregularity (P-V) @ 632.8nm:                         |
| ±1                                                                                                                 | Focal Length Tolerance (%):                           |
| 13.95                                                                                                              | Radius R <sub>1</sub> (mm):                           |
| 3.00                                                                                                               | f/#:                                                  |
| 0.17                                                                                                               | Numerical Aperture NA:                                |
| 400 - 1000                                                                                                         | Wavelength Range (nm):                                |
| 5 J/cm² @ 532nm, 10ns                                                                                              | Damage Threshold, By Design: <input type="checkbox"/> |

|                       |                             |
|-----------------------|-----------------------------|
| 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](#).

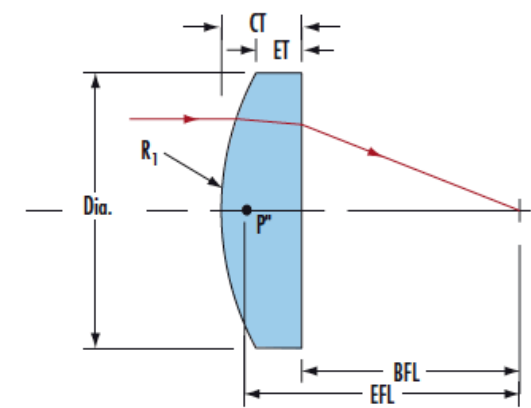
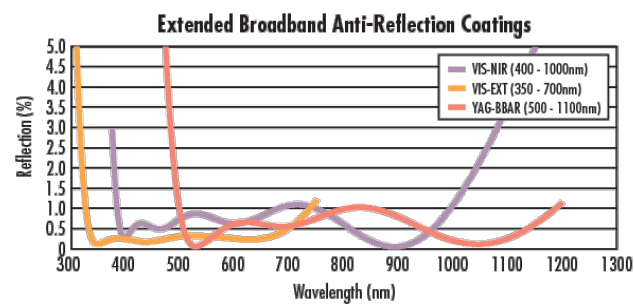
## Product Details

- AR Coated to Provide <1.25% Reflectance per Surface for 400 - 1000nm
- <0.25% Reflectance @ 880nm
- Designed for 0° Angle of Incidence
- Various PCX Coating Options: [Uncoated](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR I](#), [NIR II](#), [VIS-EXT](#), and [YAG-BBAR](#)

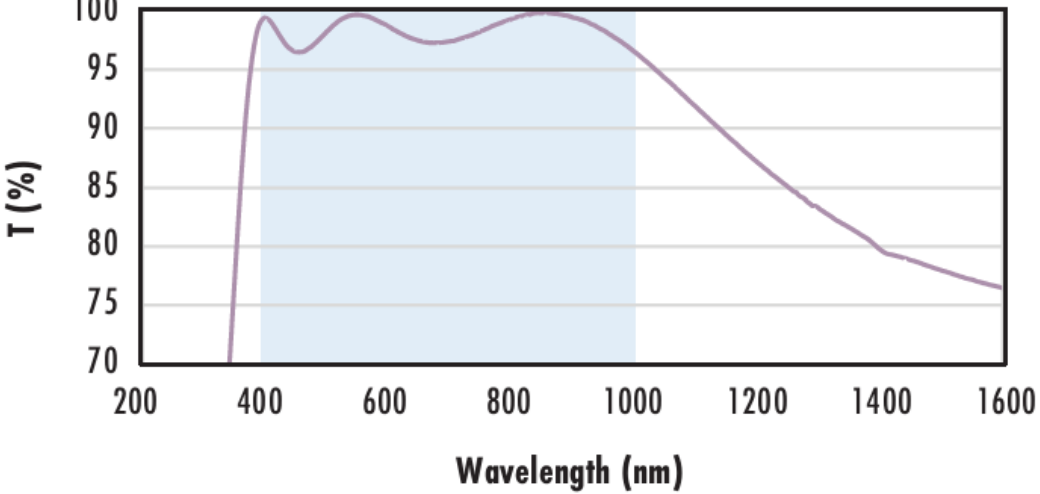
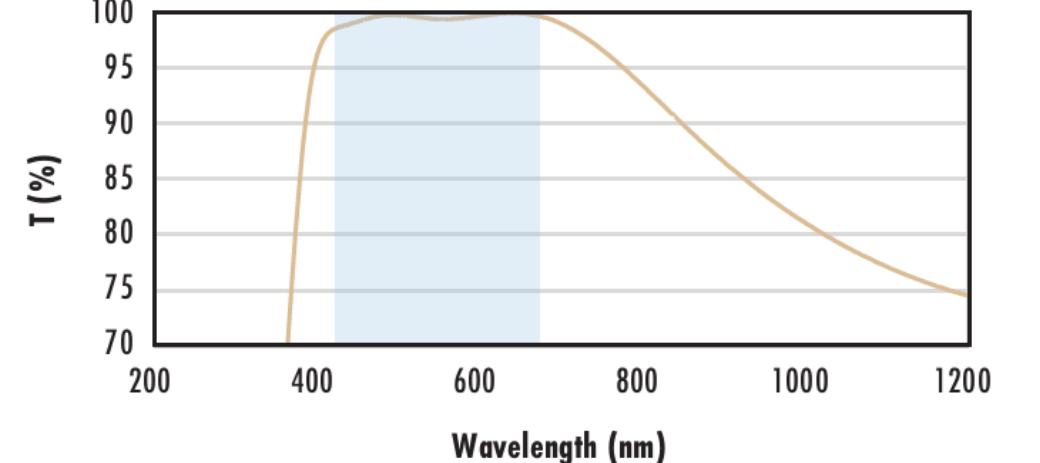
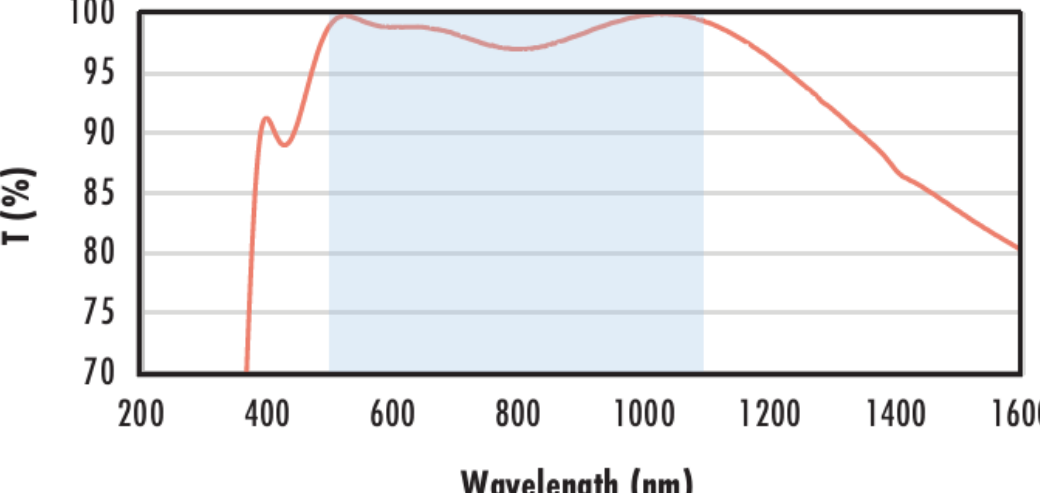
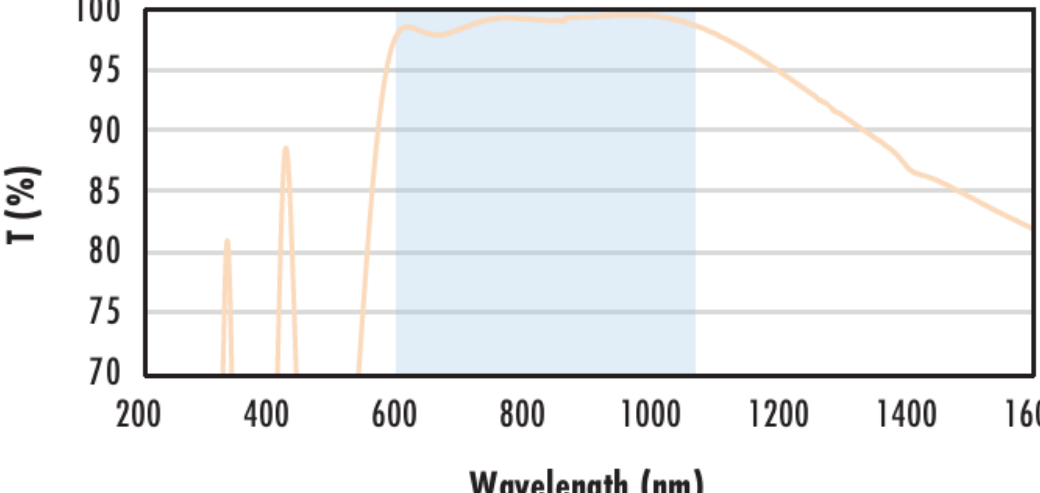
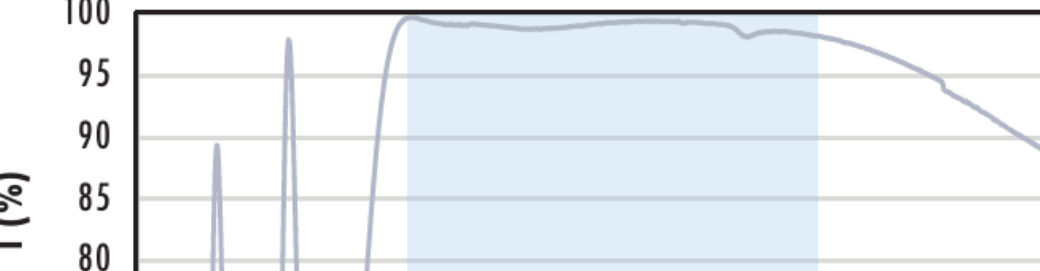
TECHSPEC® VIS-NIR Coated Plano-Convex (PCX) Lenses have a positive focal length, making them ideal for collecting and focusing light in imaging applications. They are also useful in a variety of applications involving emitters, detectors, lasers, and fiber optics. Plano-Convex lenses are ideal for a multitude of optics and photonics applications, including biotech instruments such as DNA sequencers and polymerase chain reaction (PCR) testing platforms. TECHSPEC® VIS-NIR Coated Plano-Convex (PCX) Lenses are available in a wide variety of diameters and focal lengths. Identical designs of these PCX lenses are also offered [uncoated](#) or with broadband anti-reflective (BBAR) coatings, which include [MgF<sub>2</sub>](#), [VIS 0°](#), [NIR I](#), [NIR II](#), [VIS-EXT](#), and [YAG-BBAR](#).

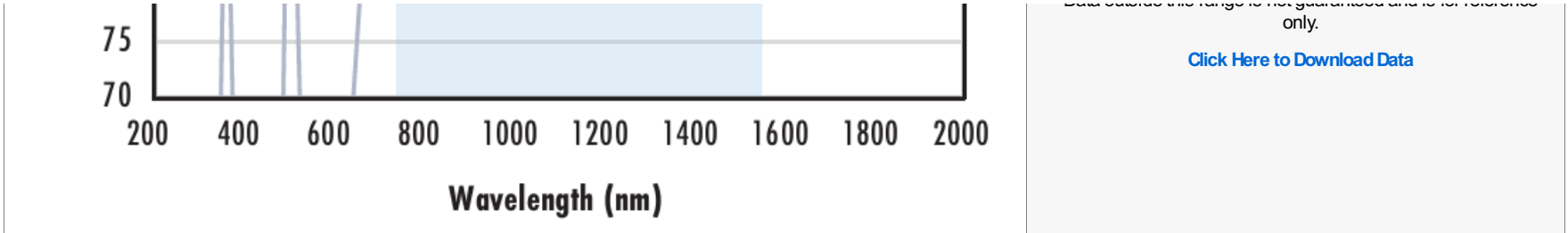
These coated lenses are optimized for a wide range of optics and photonics applications, including biotech instruments such as DNA sequencers and polymerase chain reaction (PCR) testing platforms.

Technical Information



| N-BK7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----|------|-----|------|-----|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Uncoated N-BK7 Typical Transmission</div> <table border="1"><thead><tr><th>Wavelength (nm)</th><th>T (%)</th></tr></thead><tbody><tr><td>200</td><td>~70</td></tr><tr><td>400</td><td>~92</td></tr><tr><td>600</td><td>~92</td></tr><tr><td>800</td><td>~92</td></tr><tr><td>1000</td><td>~92</td></tr><tr><td>1200</td><td>~92</td></tr><tr><td>1400</td><td>~92</td></tr><tr><td>1600</td><td>~92</td></tr><tr><td>1800</td><td>~92</td></tr><tr><td>2000</td><td>~92</td></tr><tr><td>2200</td><td>~88</td></tr></tbody></table>                     | Wavelength (nm) | T (%) | 200 | ~70 | 400 | ~92 | 600 | ~92 | 800 | ~92 | 1000 | ~92 | 1200 | ~92 | 1400                                                                                                                                                                                                                                                                                                                                                                                                          | ~92 | 1600 | ~92 | 1800 | ~92 | 2000 | ~92 | 2200 | ~88 | <p>Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                                                                                                                                                                              |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T (%)           |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~70             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~92             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~88             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <div>N-BK7 with MgF<sub>2</sub> Coating Typical Transmission</div> <table border="1"><thead><tr><th>Wavelength (nm)</th><th>T (%)</th></tr></thead><tbody><tr><td>200</td><td>~70</td></tr><tr><td>400</td><td>~95</td></tr><tr><td>600</td><td>~95</td></tr><tr><td>800</td><td>~95</td></tr><tr><td>1000</td><td>~95</td></tr><tr><td>1200</td><td>~95</td></tr><tr><td>1400</td><td>~95</td></tr><tr><td>1600</td><td>~95</td></tr><tr><td>1800</td><td>~95</td></tr><tr><td>2000</td><td>~95</td></tr><tr><td>2200</td><td>~90</td></tr></tbody></table> | Wavelength (nm) | T (%) | 200 | ~70 | 400 | ~95 | 600 | ~95 | 800 | ~95 | 1000 | ~95 | 1200 | ~95 | 1400                                                                                                                                                                                                                                                                                                                                                                                                          | ~95 | 1600 | ~95 | 1800 | ~95 | 2000 | ~95 | 2200 | ~90 | <p>Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 1.75\% @ 400 - 700\text{nm}</math> (N-BK7)</p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p> |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T (%)           |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~70             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~95             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~90             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <div>N-BK7 with VIS-EXT Coating Typical Transmission</div> <table border="1"><thead><tr><th>Wavelength (nm)</th><th>T (%)</th></tr></thead><tbody><tr><td>200</td><td>~70</td></tr><tr><td>400</td><td>~98</td></tr><tr><td>600</td><td>~98</td></tr><tr><td>800</td><td>~98</td></tr><tr><td>1000</td><td>~98</td></tr><tr><td>1200</td><td>~98</td></tr></tbody></table>                                                                                                                                                                                   | Wavelength (nm) | T (%) | 200 | ~70 | 400 | ~98 | 600 | ~98 | 800 | ~98 | 1000 | ~98 | 1200 | ~98 | <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><math>R_{avg} \leq 0.5\% @ 350 - 700\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p> |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T (%)           |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~70             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~98             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~98             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~98             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~98             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ~98             |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| N-BK7 with VIS-NIR Coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |       |     |     |     |     |     |     |     |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                               |     |      |     |      |     |      |     |      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>Typical Transmission</div></div>                                   | <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><math>R_{abs} \leq 0.25\% @ 880\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 400 - 870\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p> |
| <div><div>N-BK7 with VIS 0° Coating<br/>Typical Transmission</div></div>    | <p>Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 0.4\% @ 425 - 675\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                   |
| <div><div>N-BK7 with YAG-BBAR Coating<br/>Typical Transmission</div></div> | <p>Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{abs} \leq 0.25\% @ 532\text{nm}</math><br/><math>R_{abs} \leq 0.25\% @ 1064\text{nm}</math><br/><math>R_{avg} \leq 1.0\% @ 500 - 1100\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>      |
| <div><div>N-BK7 with NIR I Coating<br/>Typical Transmission</div></div>    | <p>Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 0.5\% @ 600 - 1050\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                |
| <div><div>N-BK7 with NIR II Coating<br/>Typical Transmission</div></div>   | <p>Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{abs} \leq 1.5\% @ 750 - 800\text{nm}</math><br/><math>R_{abs} \leq 1.0\% @ 800 - 1550\text{nm}</math><br/><math>R_{avg} \leq 0.7\% @ 750 - 1550\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p>                                               |



Coating Curves

Compatible Mounts