

TECHSPEC<sup>®</sup> 50.0mm Diameter x -100 FL, MgF<sub>2</sub> Coated, Plano-Concave Lens



Stock **#45-037** **5 In Stock**

[Other Coating Options](#)

-

1

+

£52<sup>.80</sup>

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| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-9        | £52.80 each                   |
| Qty 10-25      | £47.60 each                   |
| Qty 26-49      | £42.00 each                   |
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Product Downloads

General

Plano-Concave Lens

Type:

Physical & Mechanical Properties

|                      |                                  |
|----------------------|----------------------------------|
| 50.00 +0.0/-0.025    | Diameter (mm):                   |
| Protective as needed | Bevel:                           |
| 5.00                 | Center Thickness CT (mm):        |
| ±0.10                | Center Thickness Tolerance (mm): |
| <1                   | Centering (arcmin):              |
| 49.00                | Clear Aperture CA (mm):          |
| 11.23                | Edge Thickness ET (mm):          |

Optical Properties

|                                      |                                                       |
|--------------------------------------|-------------------------------------------------------|
| -100.00                              | Effective Focal Length EFL (mm):                      |
| N-BK7                                | Substrate: <input type="checkbox"/>                   |
| 2.00                                 | f/#:                                                  |
| 0.25                                 | Numerical Aperture NA:                                |
| MgF <sub>2</sub> (400-700nm)         | Coating:                                              |
| 400 - 700                            | Wavelength Range (nm):                                |
| -103.30                              | Back Focal Length BFL (mm):                           |
| R <sub>avg</sub> ≤1.75% @400 - 700nm | Coating Specification:                                |
| 587.6                                | Focal Length Specification Wavelength (nm):           |
| ±1                                   | Focal Length Tolerance (%):                           |
| -51.68                               | Radius R <sub>1</sub> (mm):                           |
| 40-20                                | Surface Quality:                                      |
| 10 J/cm <sup>2</sup> @ 532nm, 10ns   | Damage Threshold, By Design: <input type="checkbox"/> |
| 1.5λ                                 | Power (P-V) @ 632.8nm:                                |
| λ/4                                  | Irregularity (P-V) @ 632.8nm:                         |

Regulatory Compliance

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

## 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

Learn more about our [custom manufacturing capabilities](#) or submit an inquiry [here](#).

## Product Details

- AR Coated to Provide <1.75% Reflectance per Surface for 400 - 700nm
- Designed for 0° Angle of Incidence
- Various Coating Options: [Uncoated](#), [VIS-EXT](#), [VIS 0°](#), [VIS-NIR](#), [YAG-BBAR](#), [NIR I](#), and [NIR II](#)

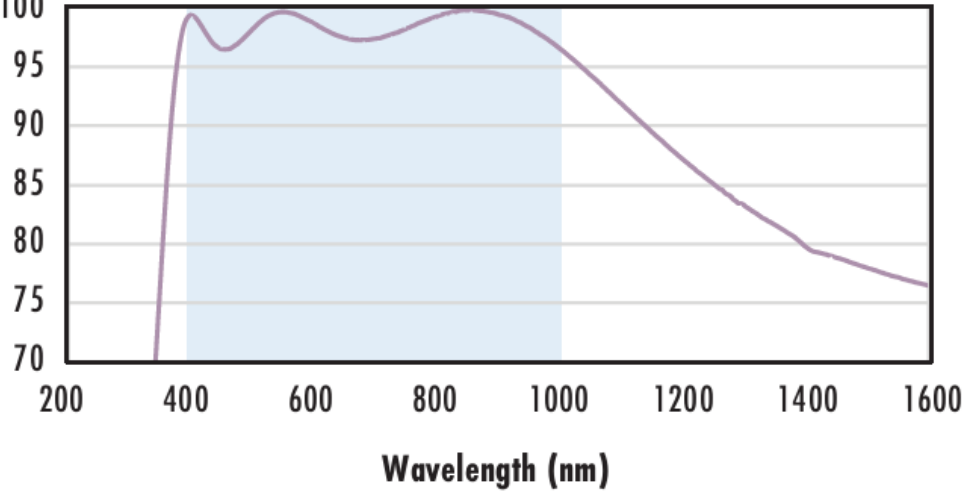
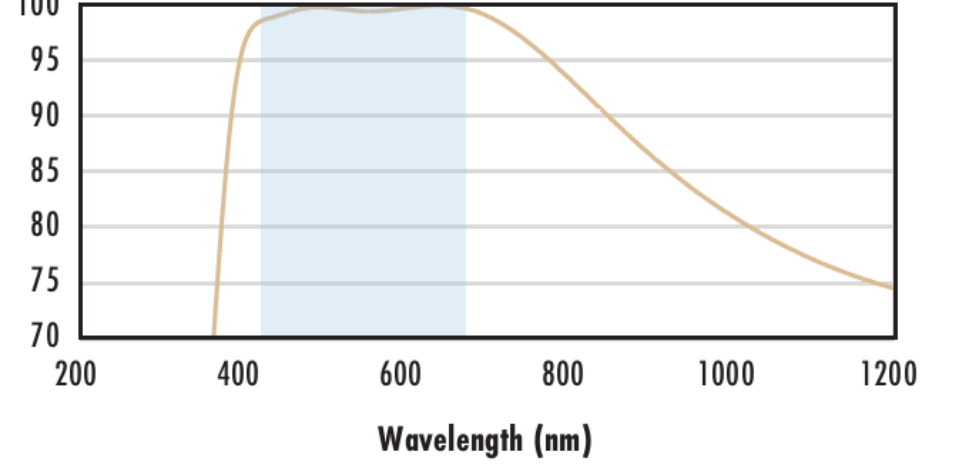
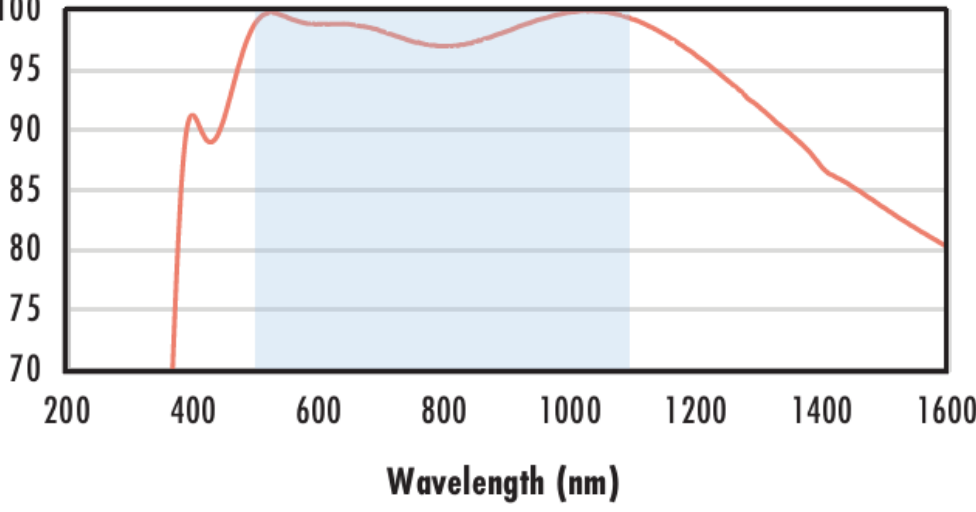
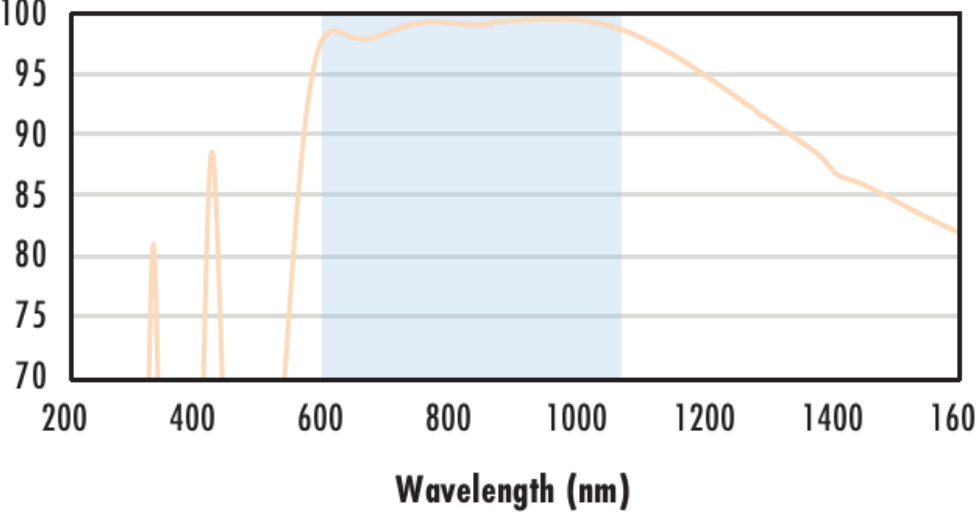
TECHSPEC® MgF<sub>2</sub> Coated Plano-Concave (PCV) Lenses are designed to bend parallel input rays to diverge from one another on the output side of the lens causing this lens to have a negative focal length. These lenses can be used for balancing aberrations created by other lenses within a system due to their negative spherical aberration. Plano-Concave (PCV) lenses are commonly used in a variety of applications including image reduction, beam

expansion and telescopes. TECHSPEC MgF<sub>2</sub> Coated Plano-Concave (PCV) Lenses are ideal for broadband applications. These lenses are also available [Uncoated](#), [VIS-EXT](#), [VIS 0°](#), [VIS-NIR](#), [YAG-BBAR](#), [NIR I](#), or with [NIR II](#) AR coating options.

Technical Information



| N-BK7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----|----|-----|----|-----|----|-----|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><h3>Uncoated N-BK7 Typical Transmission</h3><table border="1"><caption>Approximate data for Uncoated N-BK7 Typical Transmission</caption><thead><tr><th>Wavelength (nm)</th><th>Transmission 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>91</td></tr><tr><td>2200</td><td>88</td></tr></tbody></table></div>                                         | Wavelength (nm)    | Transmission T (%) | 200 | 70 | 400 | 92 | 600 | 92 | 800 | 92 | 1000 | 92 | 1200 | 92 | 1400 | 92 | 1600 | 92 | 1800 | 92 | 2000 | 91 | 2200 | 88 | <div>Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra.</div> <div><a href="#">Click Here to Download Data</a></div>                                                                                                                                                                                                                                                                                          |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Transmission T (%) |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 70                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 91                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 88                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <div><h3>N-BK7 with MgF<sub>2</sub> Coating Typical Transmission</h3><table border="1"><caption>Approximate data for N-BK7 with MgF<sub>2</sub> Coating Typical Transmission</caption><thead><tr><th>Wavelength (nm)</th><th>Transmission 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>94</td></tr><tr><td>2200</td><td>90</td></tr></tbody></table></div> | Wavelength (nm)    | Transmission T (%) | 200 | 70 | 400 | 95 | 600 | 95 | 800 | 95 | 1000 | 95 | 1200 | 95 | 1400 | 95 | 1600 | 95 | 1800 | 95 | 2000 | 94 | 2200 | 90 | <div>Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (400-700nm) 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 1.75\% @ 400 - 700\text{nm}</math> (N-BK7)</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> |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Transmission T (%) |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 70                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 94                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <div><h3>N-BK7 with VIS-EXT Coating Typical Transmission</h3><table border="1"><caption>Approximate data for N-BK7 with VIS-EXT Coating Typical Transmission</caption><thead><tr><th>Wavelength (nm)</th><th>Transmission T (%)</th></tr></thead><tbody><tr><td>200</td><td>80</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><tr><td>1400</td><td>98</td></tr><tr><td>1600</td><td>98</td></tr><tr><td>1800</td><td>95</td></tr><tr><td>2000</td><td>90</td></tr><tr><td>2200</td><td>80</td></tr></tbody></table></div>                 | Wavelength (nm)    | Transmission T (%) | 200 | 80 | 400 | 98 | 600 | 98 | 800 | 98 | 1000 | 98 | 1200 | 98 | 1400 | 98 | 1600 | 98 | 1800 | 95 | 2000 | 90 | 2200 | 80 | <div>Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) 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\% @ 350 - 700\text{nm}</math></div> <div>Data outside this range is not guaranteed and is for reference only.</div>                                                                         |
| Wavelength (nm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Transmission T (%) |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 80                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 98                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 80                 |                    |     |    |     |    |     |    |     |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                              | <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p data-bbox="583 371 1008 463"><b>N-BK7 with VIS-NIR Coating</b><br/><b>Typical Transmission</b></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><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> |
| <p data-bbox="594 994 976 1086"><b>N-BK7 with VIS 0° Coating</b><br/><b>Typical Transmission</b></p>      | <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>                                                                                                                   |
| <p data-bbox="567 1587 1039 1679"><b>N-BK7 with YAG-BBAR Coating</b><br/><b>Typical Transmission</b></p>  | <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>      |
| <p data-bbox="615 2211 1008 2303"><b>N-BK7 with NIR I Coating</b><br/><b>Typical Transmission</b></p>     | <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>                                                                                                                |
| <p data-bbox="604 2858 1018 2899"><b>N-BK7 with NIR II Coating</b></p>                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



Coating Curves

Compatible Mounts