

TECHSPEC<sup>®</sup> 12.0mm Diameter x -48 FL, MgF<sub>2</sub> Coated, Plano-Concave Lens



Stock **#45-019** 20+ In Stock

☐ [Other Coating Options](#)

-

1

+

S\$57<sup>.75</sup>

ADD TO CART

| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-9        | S\$57.75 each                 |
| Qty 10-25      | S\$51.80 each                 |
| Qty 26-49      | S\$46.55 each                 |
| Need More?     | <a href="#">Request Quote</a> |

Product Downloads

General

Type:

Plano-Concave Lens

Physical & Mechanical Properties

Diameter (mm):

12.00 +0.0/-0.025

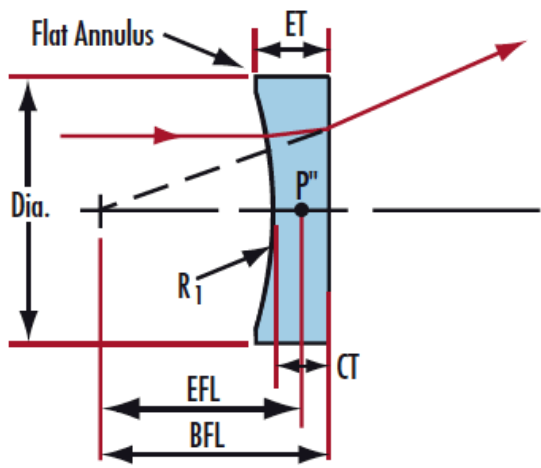
|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| Protective as needed                  | Bevel:                                                |
| 3.50                                  | Center Thickness CT (mm):                             |
| ±0.05                                 | Center Thickness Tolerance (mm):                      |
| <1                                    | Centering (arcmin):                                   |
| 11.00                                 | Clear Aperture CA (mm):                               |
| 4.12                                  | Edge Thickness ET (mm):                               |
| Optical Properties                    |                                                       |
| -48.00                                | Effective Focal Length EFL (mm):                      |
| N-BK7                                 | Substrate: <input type="checkbox"/>                   |
| 4.00                                  | f/#:                                                  |
| 0.13                                  | Numerical Aperture NA:                                |
| MgF <sub>2</sub> (400-700nm)          | Coating:                                              |
| 400 - 700                             | Wavelength Range (nm):                                |
| -50.31                                | 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 (%):                           |
| -24.81                                | 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:                                            |
| Compliant                             | Reach 219:                                            |
| View                                  | Certificate of Conformance:                           |

## 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.

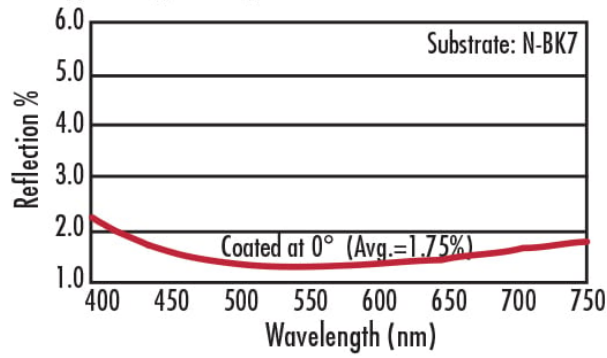
## Technical Information



#### MgF<sub>2</sub> Coating

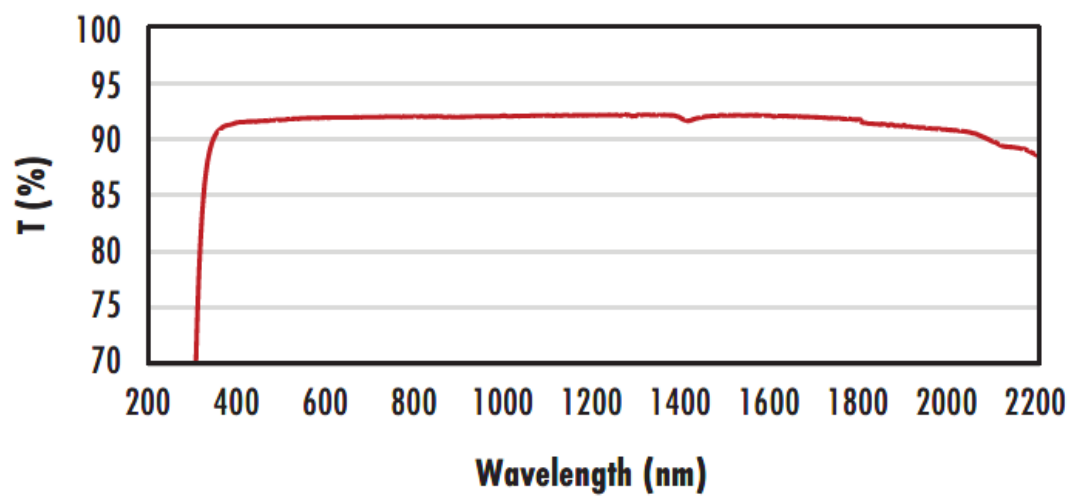
$R_{avg} \leq 1.75\% @ 400 - 700\text{nm}$

Typ. Energy Density Limit: 10 J/cm<sup>2</sup> @ 532nm, 10ns



#### N-BK7

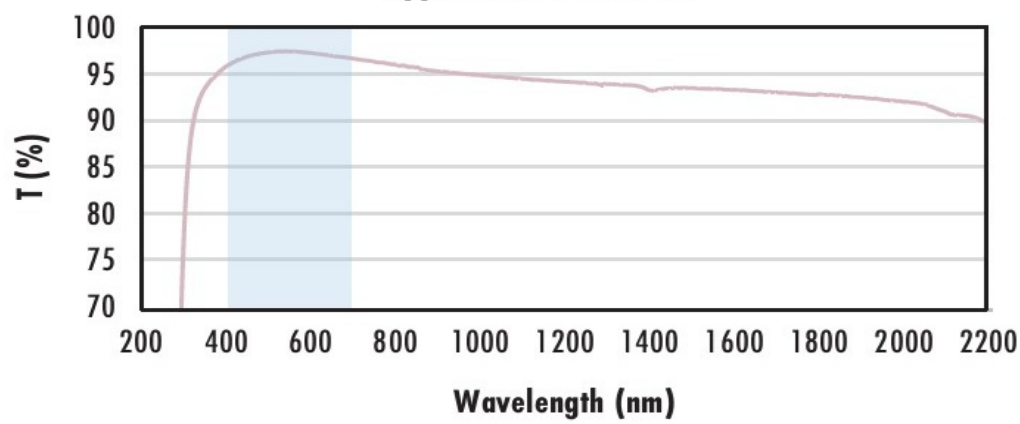
##### Uncoated N-BK7 Typical Transmission



Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra.

[Click Here to Download Data](#)

##### N-BK7 with MgF<sub>2</sub> Coating Typical Transmission



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

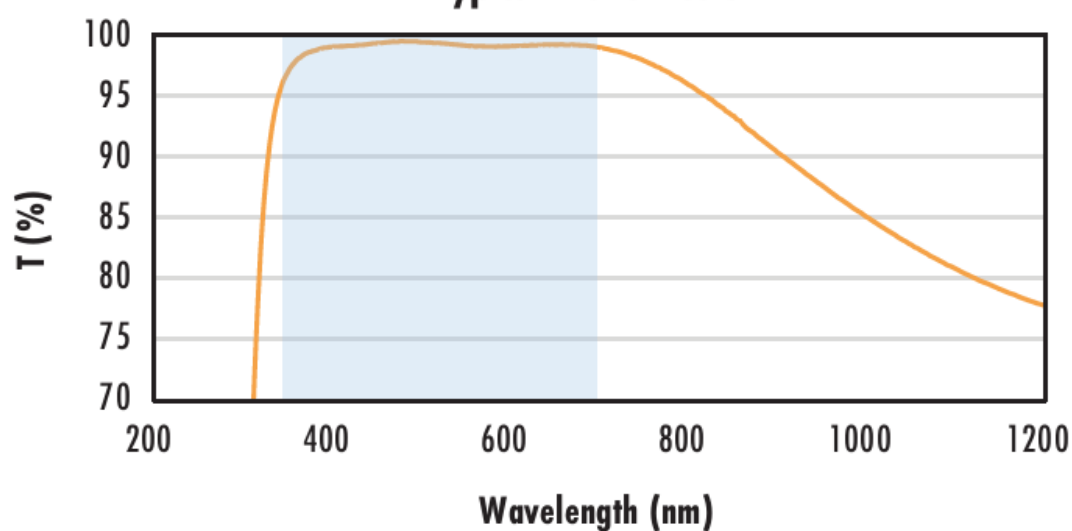
The blue shaded region indicates the coating design wavelength range, with the following specification:

$R_{avg} \leq 1.75\% @ 400 - 700\text{nm}$  (N-BK7)

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

[Click Here to Download Data](#)

##### N-BK7 with VIS-EXT Coating Typical Transmission



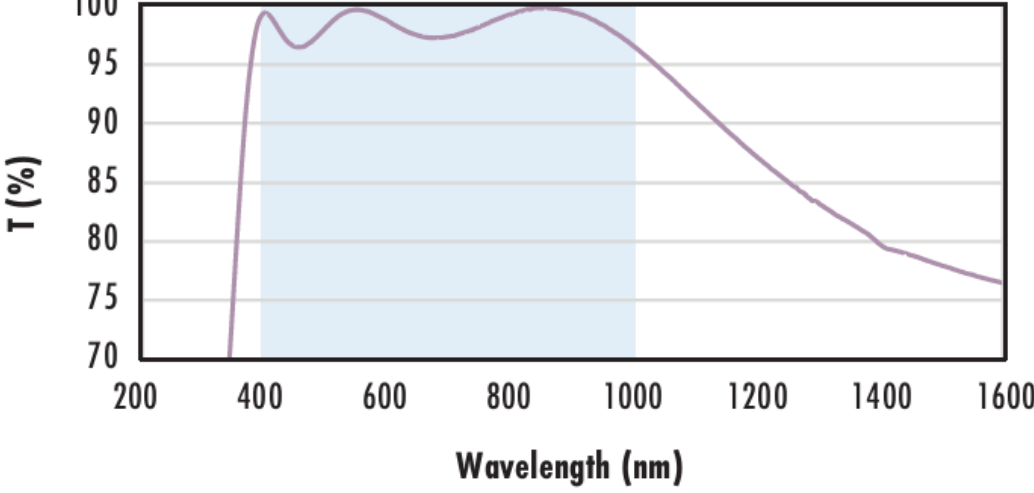
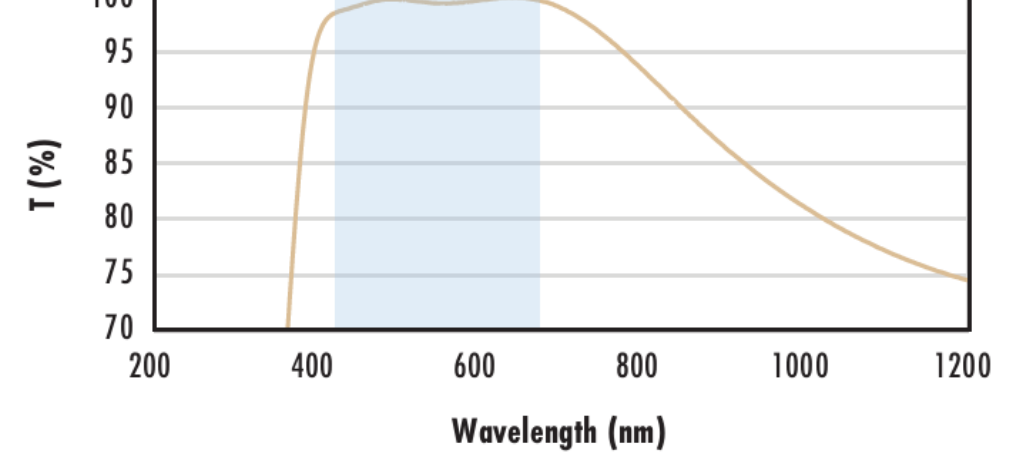
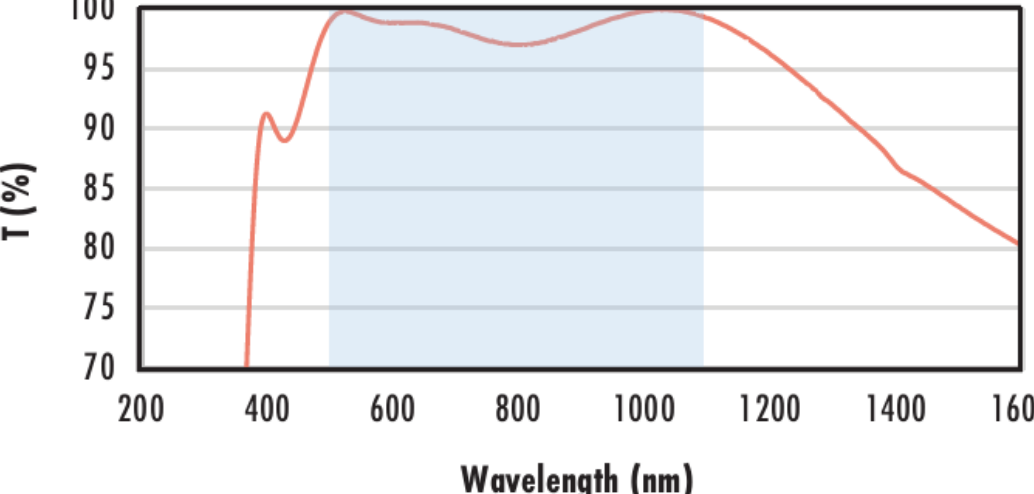
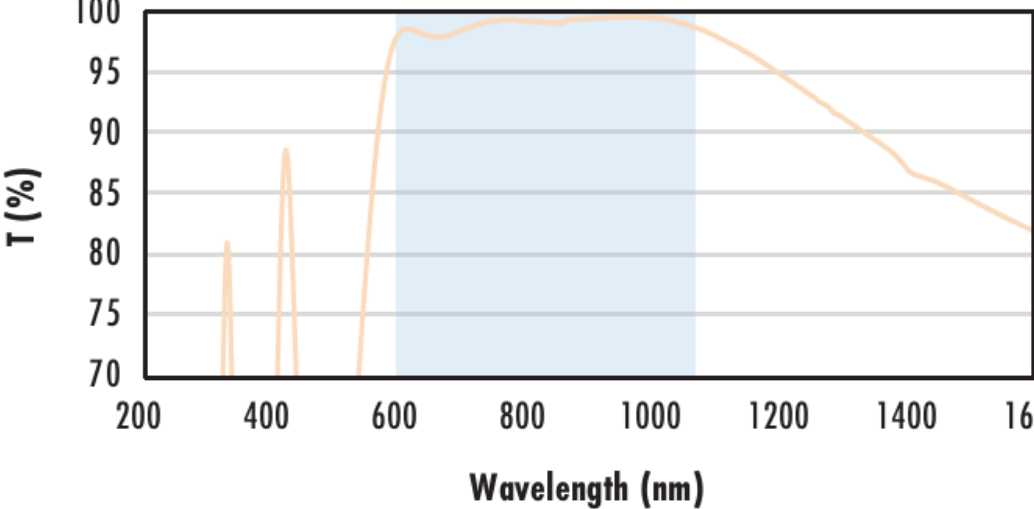
Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

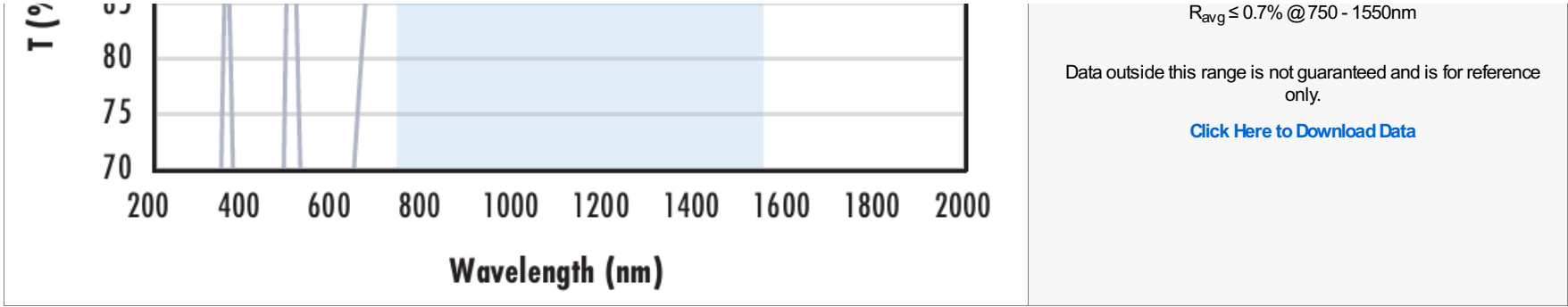
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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

[Click Here to Download Data](#)

|                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>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</div><div>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</div><div>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</div><div>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</div><div>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></p>                                                                                                                                                                                     |



## Coating Curves

### 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](#).

## Compatible Mounts