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**TECHSPEC® 12.0mm Dia. x -48 FL, Uncoated, Plano-Concave Lens**



TECHSPEC Uncoated Plano-Concave (PCV) Lenses



Stock **#45-018** **20+ In Stock**

[Other Coating Options](#)

1 **\$46<sup>00</sup>**

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| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-9        | <b>\$46.90</b> each           |
| Qty 10-25      | <b>\$42.35</b> each           |
| Qty 26-49      | <b>\$37.45</b> each           |
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**General**

Plano-Concave Lens **Type:**

**Physical & Mechanical Properties**

**Diameter (mm):**

12.00 +0.0/-0.025

Bevel:

Protective as needed

Center Thickness CT (mm):

3.50

Center Thickness Tolerance (mm):

±0.05

Centering (arcmin):

<1

Clear Aperture CA (mm):

11.00

Edge Thickness ET (mm):

4.12

## Optical Properties

Effective Focal Length EFL (mm):

-48.00

Substrate:

N-BK7

f#:

4.00

Numerical Aperture NA:

0.13

Coating:

Uncoated

Wavelength Range (nm):

350 - 2200

Back Focal Length BFL (mm):

-50.31

Focal Length Specification Wavelength (nm):

587.6

Focal Length Tolerance (%):

±1

Radius R<sub>1</sub> (mm):

-24.81

Surface Quality:

40-20

Power (P-V) @ 632.8nm:

1.5λ

Irregularity (P-V) @ 632.8nm:

λ/4

## Regulatory Compliance

RoHS 2015:

Compliant

Reach 219:

Compliant

Certificate of Conformance:

[View](#)

## 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

- Wavelength Range of 400-2200nm
- Precision Diameter and Centration Tolerances Allow for Easy OEM Integration
- Wide Variety of Diameters, Focal Lengths, and Coatings
- Anti-Reflection Coating Options: [VIS-EXT](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [VIS-NIR](#), [YAG-BBAR](#), [NIR I](#), and [NIR II](#)

TECHSPEC® Uncoated 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® Uncoated Plano-Concave (PCV) Lenses offer optimal performance in the 350nm to 2200nm range. These lenses are also available [VIS-EXT](#), [MgF<sub>2</sub>](#), [VIS 0°](#), [VIS-NIR](#), [YAG-BBAR](#), [NIR I](#), or with [NIR II](#) AR coating options.

# Technical Information



N-BK7

## Uncoated N-BK7 Typical Transmission



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

[Click Here to Download Data](#)

## 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](#)

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



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

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

$$R_{abs} \leq 0.25\% @ 880\text{nm}$$

$$R_{avg} \leq 1.25\% @ 400 - 870\text{nm}$$



$R_{avg} \geq 1.25\%$  @ 400 - 675nm  
 $R_{avg} \leq 1.25\%$  @ 890 - 1000nm

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

[Click Here to Download Data](#)

**N-BK7 with VIS 0° Coating  
Typical Transmission**



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

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

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

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

[Click Here to Download Data](#)

**N-BK7 with YAG-BBAR Coating  
Typical Transmission**



Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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

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

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

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

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

[Click Here to Download Data](#)

**N-BK7 with NIR I Coating  
Typical Transmission**



Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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

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

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

[Click Here to Download Data](#)

**N-BK7 with NIR II Coating  
Typical Transmission**



Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.

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

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

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

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

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

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## Compatible Mounts

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