

TECHSPEC[®] 4.5mm Dia. x 4.5mm FL, VIS 0° Coated, Double-Convex Lens



Stock **#47-895** **8 In Stock**

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1

+

S\$96^{.33}

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Volume Pricing	
Qty 1-9	S\$96.33 each
Qty 10-24	S\$86.62 each
Qty 25-99	S\$76.91 each
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SPECIFICATIONS

General

Type:

Double-Convex Lens	
Physical & Mechanical Properties	
Diameter (mm):	4.50 +0.0/-0.025
Centering (arcmin):	30-45, typical
Bevel:	Protective as needed
Center Thickness CT (mm):	2.60
Center Thickness Tolerance (mm):	±0.05
Edge Thickness ET (mm):	1.80
Clear Aperture CA (mm):	4.05
Optical Properties	
Back Focal Length BFL (mm):	3.70
Effective Focal Length EFL (mm):	4.50
Coating:	VIS 0° (425-675nm)
Coating Specification:	R _{avg} ≤0.4% @ 425 - 675nm
Substrate: ☐	N-LASF44
Surface Quality:	40-20
Power (P-V) @ 632.8nm:	1.5λ
Irregularity (P-V) @ 632.8nm:	λ/4
Radius R ₁ =R ₂ (mm):	6.58
f#:	1.00
Focal Length Specification Wavelength (nm):	587.6
Focal Length Tolerance (%):	±1
Numerical Aperture NA:	0.50
Wavelength Range (nm):	425 - 675
Damage Threshold, By Design: ☐	5 J/cm ² @ 532nm, 10ns
Regulatory Compliance	
RoHS 2015:	Compliant
Certificate of Conformance:	View
Reach 235:	Compliant

PRODUCT DETAILS

- AR Coated to Provide <0.4% Reflectance per Surface for 425 - 675nm
- Minimize Aberrations Including Spherical and Coma
- [UV Fused Silica DCX Lenses](#) Available
- Other Coating Options Available: [Uncoated](#), [MgF₂](#), [NIR I](#), [NIR II](#), [VIS-EXT](#), [VIS-NIR](#), and [YAG-BBAR](#)

TECHSPEC® VIS 0° Coated Double-Convex (DCX) Lenses, also referred to as bi-convex lenses, have two positive, symmetrical faces with equal radii on both sides. These lenses are generally recommended for finite imaging applications with a conjugate ratio (ratio between object distance and image distance) between 0.2 and 5. At a conjugate ratio of 1, aberrations such as spherical aberration, chromatic aberration, coma, and distortion are minimized or cancelled due to the symmetric lens design. TECHSPEC® VIS 0° Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

TECHNICAL INFORMATION



N-BK7

Uncoated N-BK7 Typical Transmission



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

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N-BK7 with MgF₂ Coating Typical Transmission



Typical transmission of a 3mm thick N-BK7 window with MgF₂ (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.

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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.

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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:

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

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

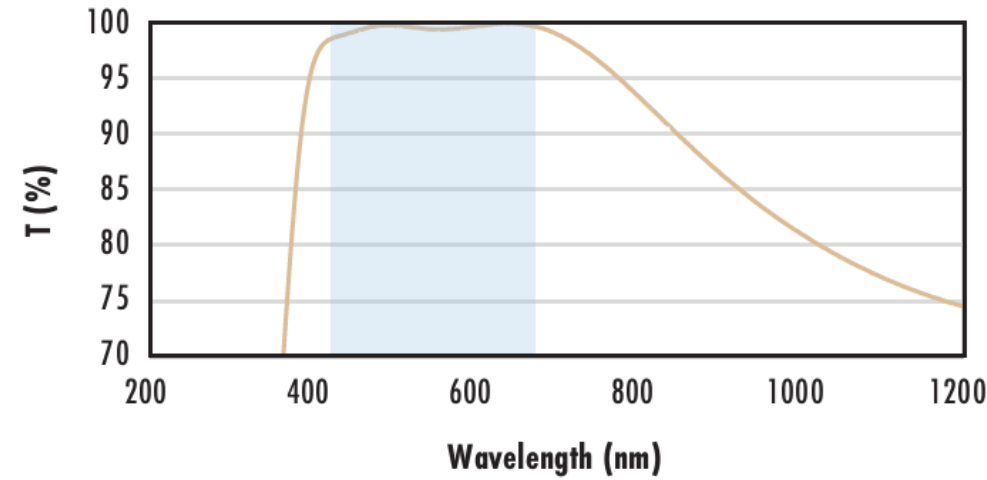
$R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}$



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

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**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:

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

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

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**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:

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

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

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

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

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**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:

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

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:

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

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

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

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

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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](#).
