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TECHSPEC[®] 4.5mm Dia. x 9mm FL, NIR I Coated, Double-Convex Lens



Stock **#49-456** **8 In Stock**

☐ [Other Coating Options](#)

-

1

+

₹5,021

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Volume Pricing	
Qty 1-9	₹5,021 each
Qty 10-24	₹4,515 each
Qty 25-99	₹4,009 each
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General

Type:

Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):

4.50 +0.0/-0.025

<3	Centering (arcmin):
Protective as needed	Bevel:
2.38	Center Thickness CT (mm):
±0.05	Center Thickness Tolerance (mm):
1.80	Edge Thickness ET (mm):
4.05	Clear Aperture CA (mm):

Optical Properties	
8.16	Back Focal Length BFL (mm):
9.00	Effective Focal Length EFL (mm):
NIR I (600-1050nm)	Coating:
R _{avg} ≤0.5% @ 600 - 1050nm	Coating Specification:
N-BK7	Substrate: ☐
40-20	Surface Quality:
1.5λ	Power (P-V) @ 632.8nm:
λ/4	Irregularity (P-V) @ 632.8nm:
8.88	Radius R ₁ =R ₂ (mm):
2.00	f/#:
587.6	Focal Length Specification Wavelength (nm):
0.25	Numerical Aperture NA:
600 - 1050	Wavelength Range (nm):
7 J/cm ² @ 1064nm, 10ns	Damage Threshold, By Design: ☐

Regulatory Compliance	
Compliant	RoHS 2015:
View	Certificate of Conformance:
Compliant	Reach 235:
Japan	Country of Origin:
Edmund Optics India Private Limited	Imported By:

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 <0.5% Reflectance per Surface for 600 - 1050nm
- Minimize Aberrations Including Spherical and Coma
- [UV Fused Silica DCX Lenses](#) Available
- Other Coating Options Available: [Uncoated](#), [MgF₂](#), [VIS 0°](#), [NIR II](#), [VIS-EXT](#), [VIS-NIR](#), and [YAG-BBAR](#)

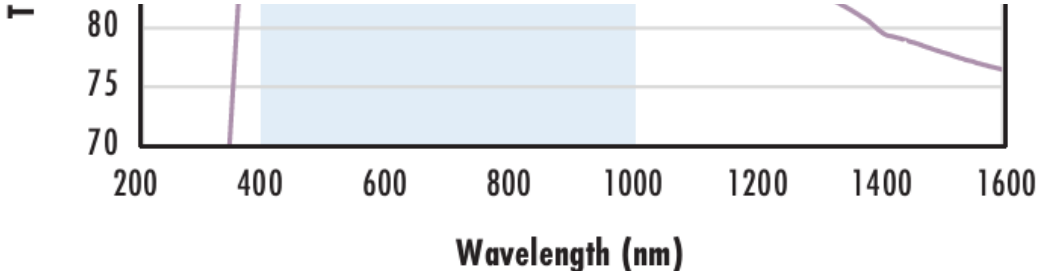
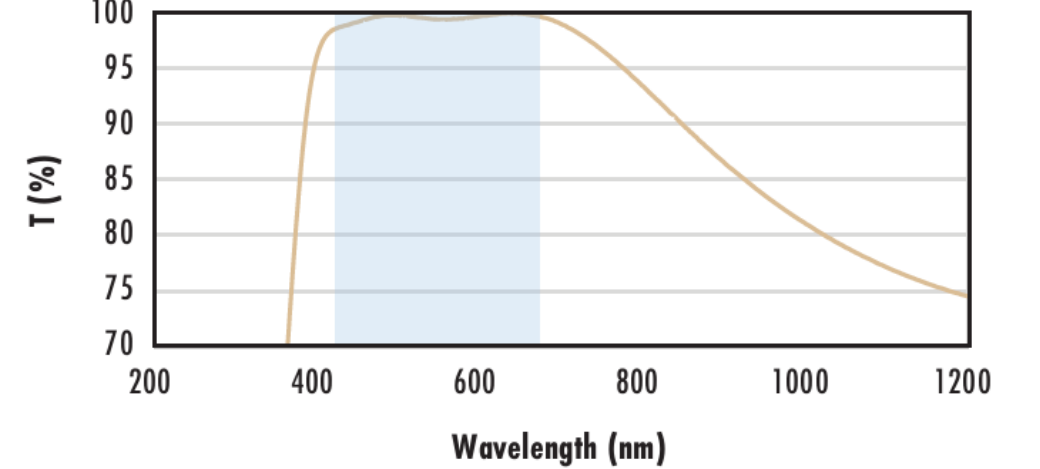
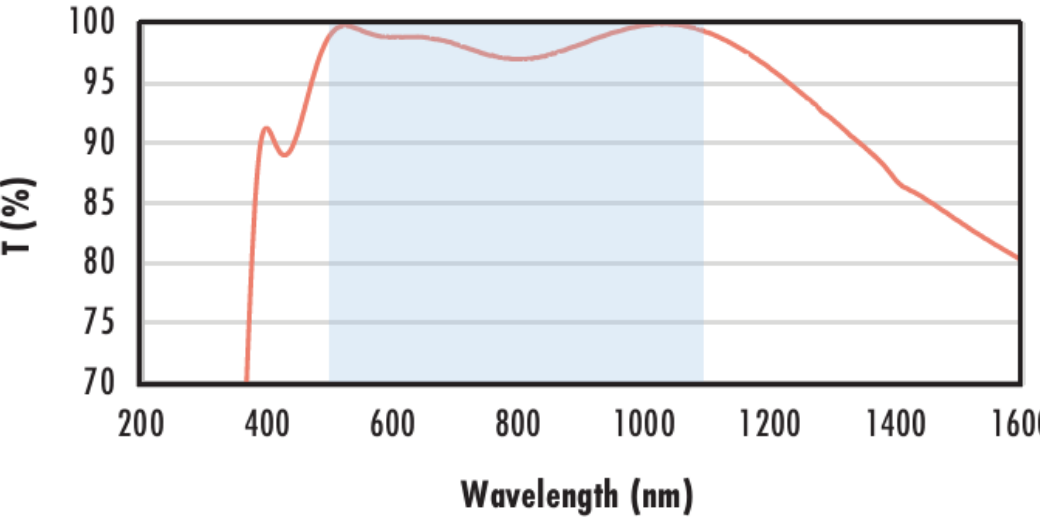
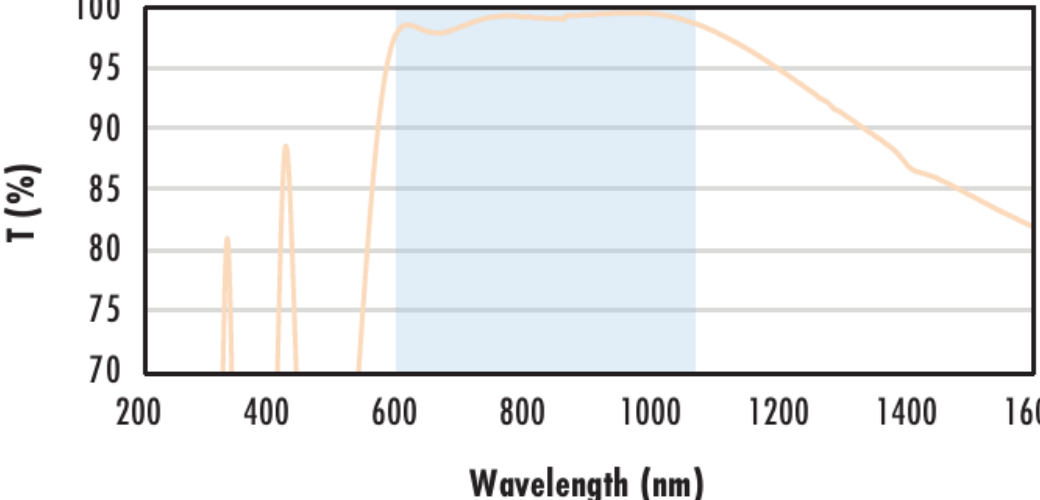
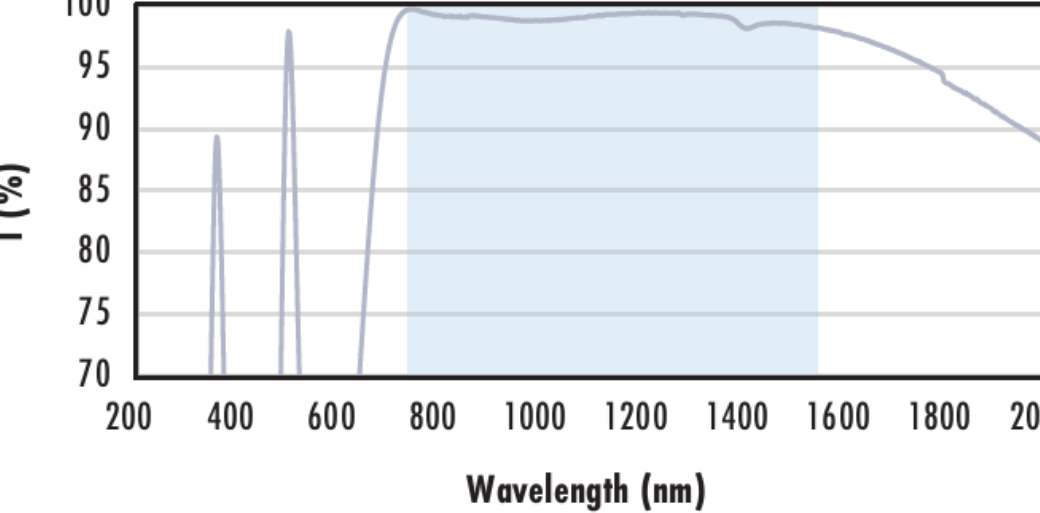
TECHSPEC® NIR I Coated Double-Convex (DCX) Lenses, also referred to as bi-convex lenses, have two positive, symmetrical faces with equal radii on both sides. These lenses are generally recommended for finite imaging

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® NIR I 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 <table border="1"><caption>Uncoated N-BK7 Typical Transmission Data (Approximate)</caption><thead><tr><th>Wavelength (nm)</th><th>Transmission T (%)</th></tr></thead><tbody><tr><td>300</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>89</td></tr></tbody></table>	Wavelength (nm)	Transmission T (%)	300	70	400	92	600	92	800	92	1000	92	1200	92	1400	92	1600	92	1800	92	2000	91	2200	89	Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra. Click Here to Download Data				
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N-BK7 with MgF₂ Coating Typical Transmission <table border="1"><caption>N-BK7 with MgF2 Coating Typical Transmission Data (Approximate)</caption><thead><tr><th>Wavelength (nm)</th><th>Transmission T (%)</th></tr></thead><tbody><tr><td>300</td><td>70</td></tr><tr><td>400</td><td>92</td></tr><tr><td>500</td><td>97</td></tr><tr><td>600</td><td>96</td></tr><tr><td>700</td><td>95</td></tr><tr><td>800</td><td>94</td></tr><tr><td>1000</td><td>93</td></tr><tr><td>1200</td><td>92</td></tr><tr><td>1400</td><td>91</td></tr><tr><td>1600</td><td>90</td></tr><tr><td>1800</td><td>89</td></tr><tr><td>2000</td><td>88</td></tr><tr><td>2200</td><td>87</td></tr></tbody></table>	Wavelength (nm)	Transmission T (%)	300	70	400	92	500	97	600	96	700	95	800	94	1000	93	1200	92	1400	91	1600	90	1800	89	2000	88	2200	87	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. Click Here to Download Data
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300	70																												
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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: $R_{avg} \leq 0.4\% @ 425 - 675\text{nm}$ 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: $R_{abs} \leq 0.25\% @ 532\text{nm}$ $R_{abs} \leq 0.25\% @ 1064\text{nm}$ $R_{avg} \leq 1.0\% @ 500 - 1100\text{nm}$ 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: $R_{avg} \leq 0.5\% @ 600 - 1050\text{nm}$ 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: $R_{abs} \leq 1.5\% @ 750 - 800\text{nm}$ $R_{abs} \leq 1.0\% @ 800 - 1550\text{nm}$ $R_{avg} \leq 0.7\% @ 750 - 1550\text{nm}$ Data outside this range is not guaranteed and is for reference only. Click Here to Download Data

