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# TECHSPEC® 10mm Dia. x 50mm FL, YAG-BBAR Coated, Double-Convex Lens

YAG-BBAR Coated Double-Convex (DCX) Lenses

Stock **#89-237** **8 In Stock**

Other Coating Options

- 1 + **€49**.00

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| Volume Pricing | |
|---|---|
| Qty 1-9 | **€49,00** each |
| Qty 10-24 | **€44,00** each |
| Qty 25-99 | **€39,25** each |
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## General

**Type:**
Double-Convex Lens

## Physical & Mechanical Properties

**Diameter (mm):**
10.00 +0.0/-0.025

**Centering (arcmin):**
<1

**Bevel:**
Protective as needed

**Center Thickness CT (mm):**
2.50

**Center Thickness Tolerance (mm):**
±0.05

**Edge Thickness ET (mm):**
2.01

**Clear Aperture CA (mm):**
9.00

## Optical Properties

**Back Focal Length BFL (mm):**
49.17

**Effective Focal Length EFL (mm):**
50.00

**Coating:**
YAG-BBAR (500-1100nm)

**Coating Specification:**
$R_{abs}$ <0.25% @ 532nm
$R_{abs}$ <0.25% @ 1064nm
$R_{avg}$ <1.0% @ 500 - 1100nm

**Substrate:**
N-BK7

**Surface Quality:**
40-20

**Power (P-V) @ 632.8nm:**
1.5λ

**Irregularity (P-V) @ 632.8nm:**
λ/4

**Radius $R_1$=-$R_2$ (mm):**
51.25

**f/#:**
5.00

**Focal Length Specification Wavelength (nm):**
587.6

**Focal Length Tolerance (%):**
±1

**Numerical Aperture NA:**
0.10

**Wavelength Range (nm):**
350 - 2200

**Damage Threshold, By Design:**
5 J/cm$^2$ @ 532nm, 10ns

## Regulatory Compliance

**RoHS 2015:**
Compliant

**Certificate of Conformance:**
View

**Reach 235:**
Compliant

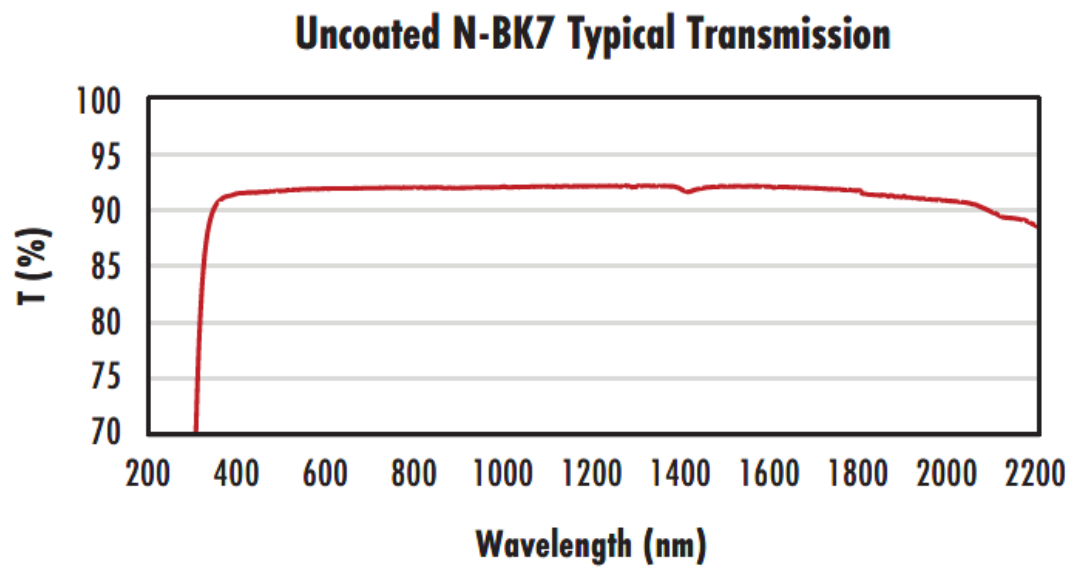
# Product Details

- Optimized for R<0.25% @ 532nm and 1064nm
- Minimize Aberrations Including Spherical and Coma
- UV Fused Silica DCX Lenses Available
- Other Coating Options Available: Uncoated, $MgF_2$, VIS 0°, NIR I, NIR II, VIS-EXT, and VIS-NIR

TECHSPEC® YAG-BBAR 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 YAG-BBAR Coated Double-Convex Lenses are available in a variety of substrates and coating options for the visible and NIR spectra.

# Technical Information

N-BK7




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

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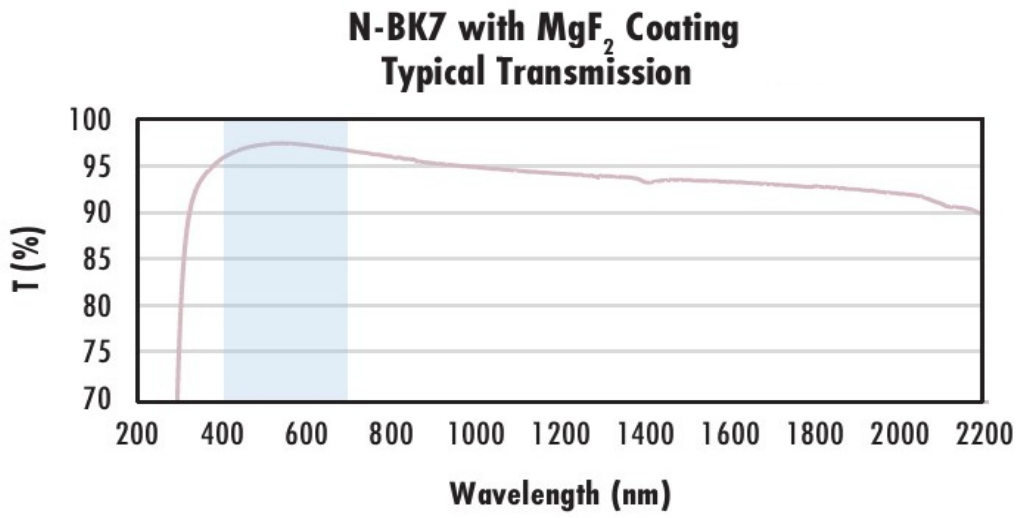


Typical transmission of a 3mm thick N-BK7 window with MgF2 (400-700nm) coating at 0° AOI.

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

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

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

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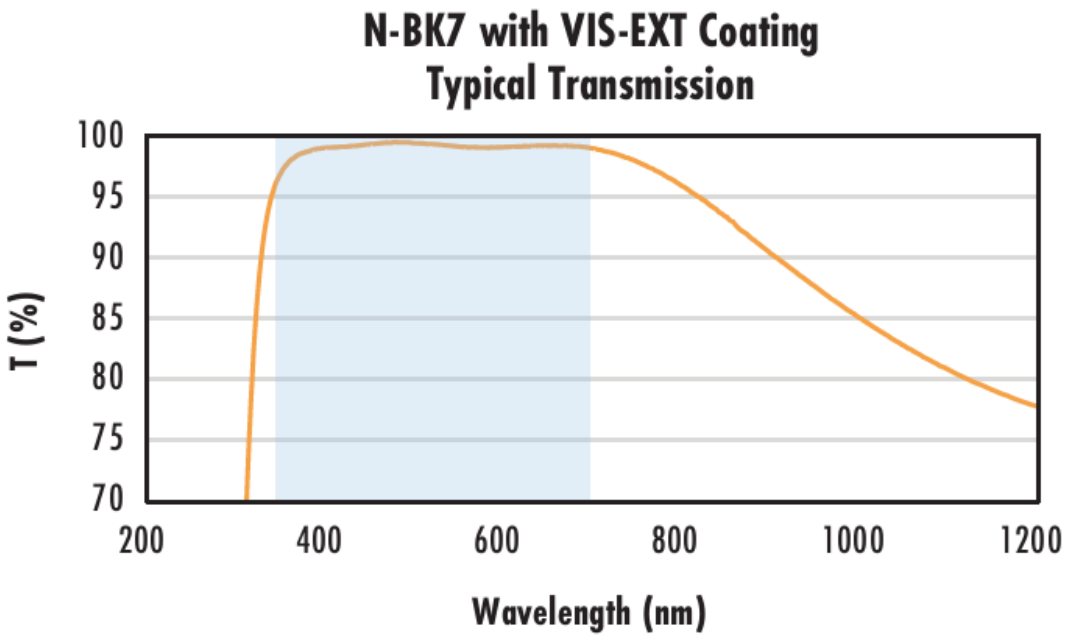


Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

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

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

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

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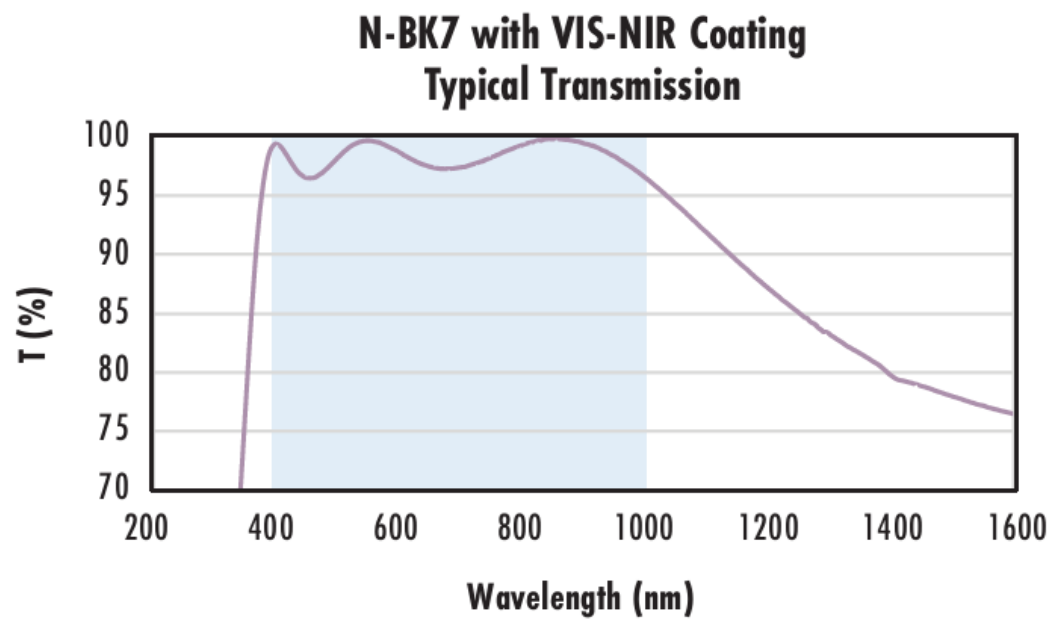


Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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

$R_{abs} \leq 0.25\%$ @ 880nm
$R_{avg} \leq 1.25\%$ @ 400 - 870nm
$R_{avg} \leq 1.25\%$ @ 890 - 1000nm

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

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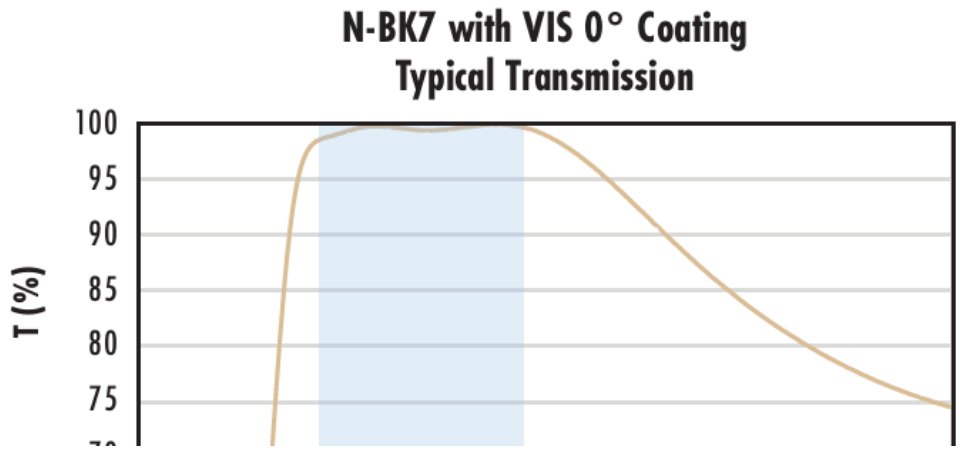


Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.

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

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

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

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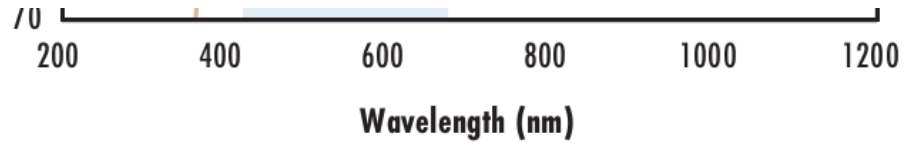


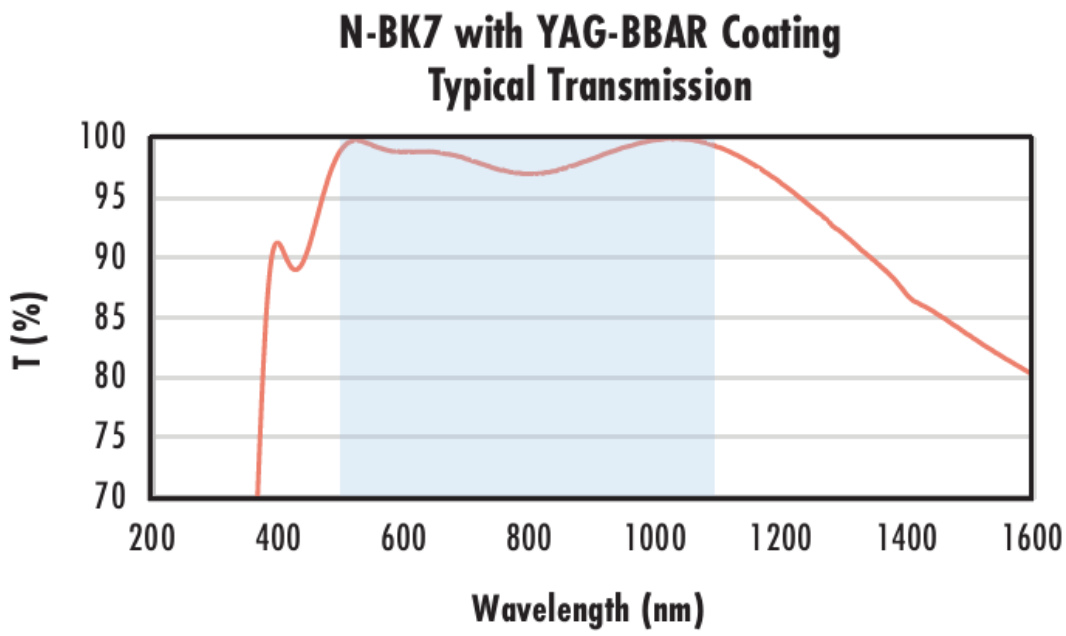


Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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

$R_{abs}$ ≤ 0.25% @ 532nm
$R_{abs}$ ≤ 0.25% @ 1064nm
$R_{avg}$ ≤ 1.0% @ 500 - 1100nm

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

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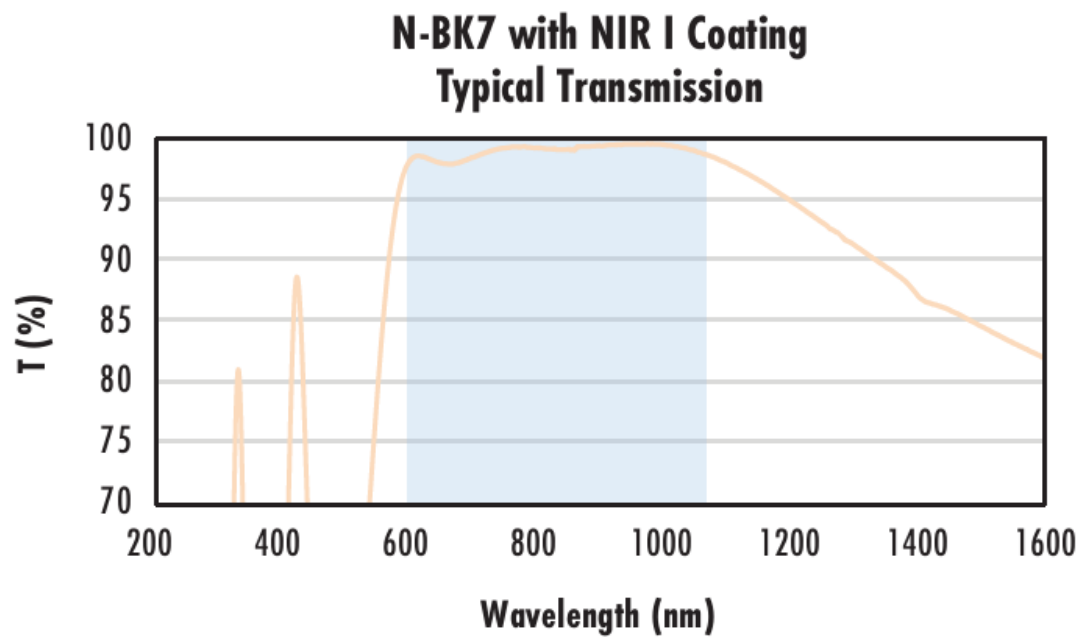


Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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

$R_{avg}$ ≤ 0.5% @ 600 - 1050nm

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

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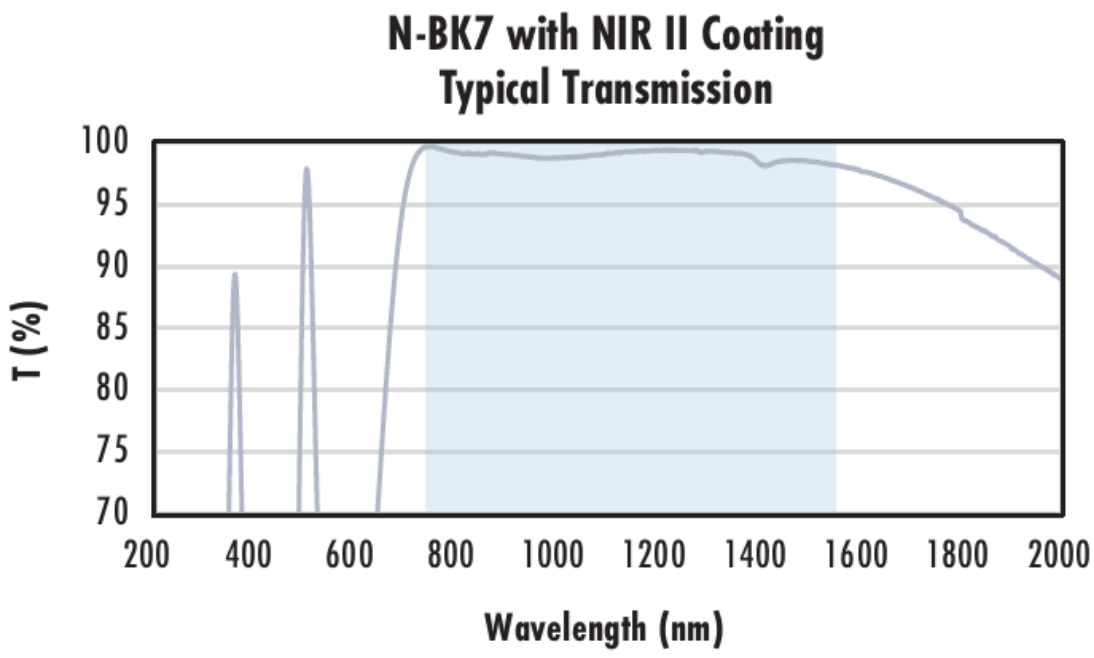


Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.

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

$R_{abs}$ ≤ 1.5% @ 750 - 800nm
$R_{abs}$ ≤ 1.0% @ 800 - 1550nm
$R_{avg}$ ≤ 0.7% @ 750 - 1550nm

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

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## 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

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## Compatible Mounts