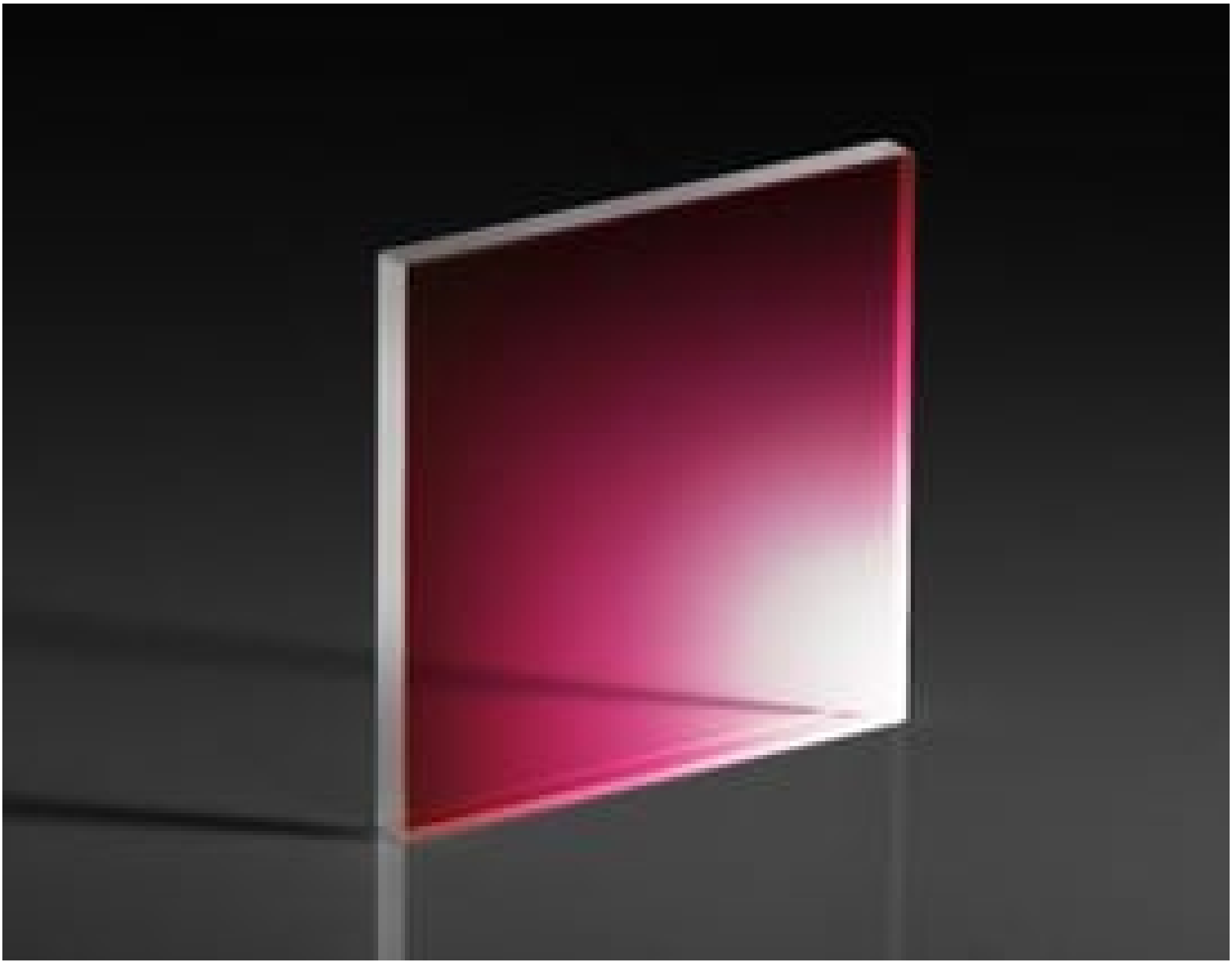
# TECHSPEC® 50mm Sq., 2mm Thick, VIS-EXT Coated λ/4 N-BK7 Window



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## SPECIFICATIONS

### General

| Type: |
|---|
| Protective Window |

## Physical & Mechanical Properties

**Bevel:**
Protective as needed

**Clear Aperture (%):**
90

**Clear Aperture CA (mm):**
45.00 x 45.00

**Dimensions (mm):**
50.00 x 50.00 +0.00/-0.25

**Thickness (mm):**
2.00 ±0.20

**Edges:**
Fine Ground

**Knoop Hardness (kg/mm$^2$):**
610.00

**Parallelism (arcmin):**
<1

**Poisson's Ratio:**
0.21

**Young's Modulus (GPa):**
82

**Length (mm):**
50.00

**Width (mm):**
50.00

## Optical Properties

**Abbe Number ($v_d$):**
64.17

**Coating:**
VIS-EXT (350-700nm)

**Coating Specification:**
$R_{avg}$ <0.5% @ 350 - 700nm

**Index of Refraction ($n_d$):**
1.516

**Substrate:**
N-BK7

**Surface Quality:**
60-40

**Transmitted Wavefront, P-V:**
λ/4

**Wavelength Range (nm):**
350 - 700

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

## Material Properties

**Coefficient of Thermal Expansion CTE (10$^{-6}$/°C):**
7.1 (-30 to +70°C)
8.3 (+20 to +300°C)

**Density (g/cm$^3$):**
2.51

## Regulatory Compliance

**RoHS 2015:**
Compliant

**Certificate of Conformance:**
View

**Reach 235:**
Compliant

# PRODUCT DETAILS

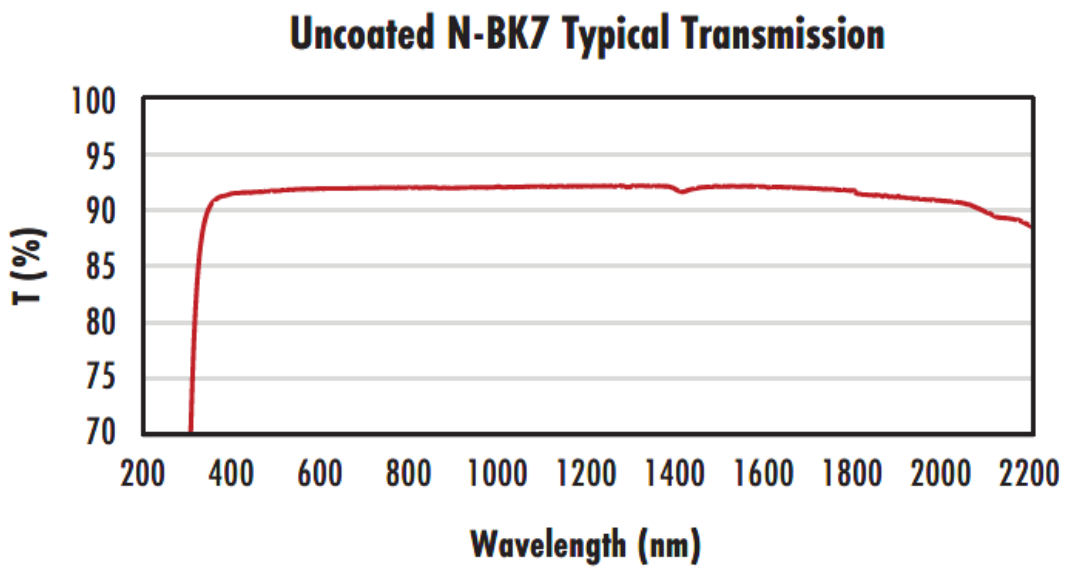
- Circular and Rectangular Sizes from 2mm to 200mm
- 8 Broadband Anti-Reflection Coating Options Available
- World's Largest Selection of Standard N-BK7 Windows
- Also Available with **Ultra-Thin N-BK7 Windows**

TECHSPEC® λ/4 N-BK7 Precision Windows are ideally suited for industrial and low-power laser applications. The high tolerance design yields minimal beam distortion and scatter. Broadband coating options extend the range of these precision windows through the visible and near-infrared spectra. TECHSPEC® λ/4 N-BK7 Precision Windows are offered in circular and rectangular sizes ranging from 2mm to 200mm.

**Note:** New additions to this product family may be specified with a transmitted wavefront distortion (TWD) specification instead of a surface flatness. For more information on the difference between these two specifications, see our application note on **Understanding Optical Windows**.

# TECHNICAL INFORMATION

## N-BK7




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

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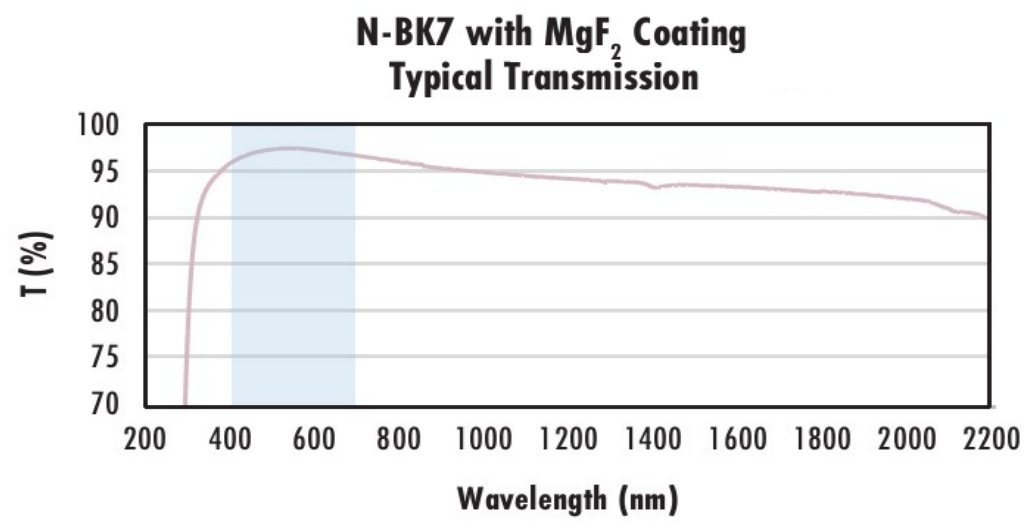


Typical transmission of a 3mm thick N-BK7 window with MgF2 (400-700nm) coating at 0° AOI.

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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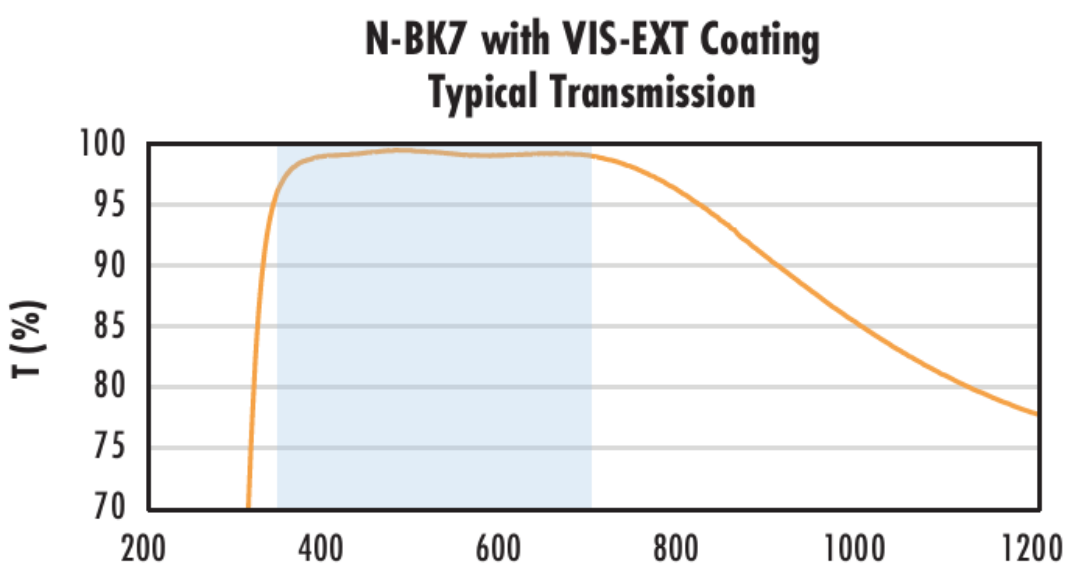


Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

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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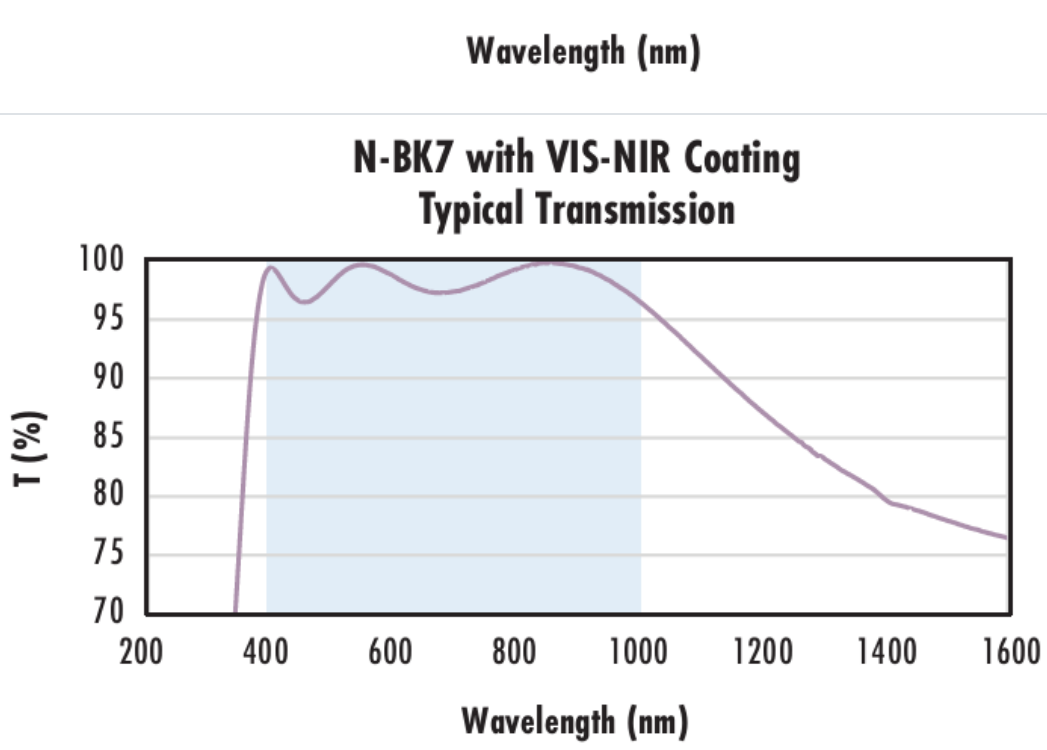


Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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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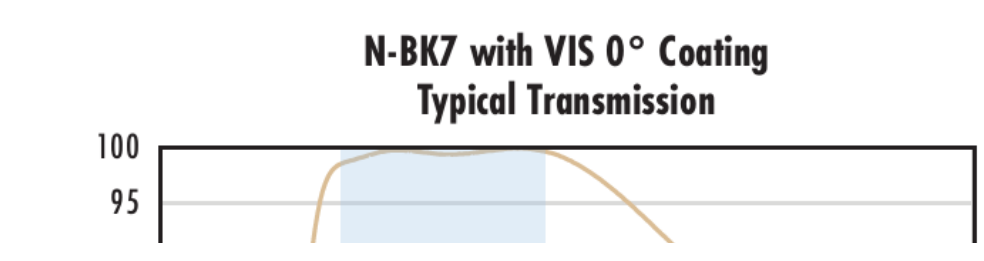
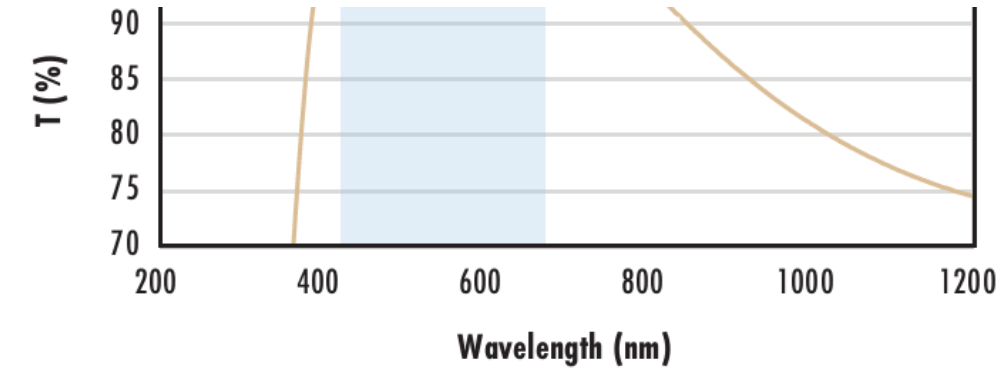



Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.




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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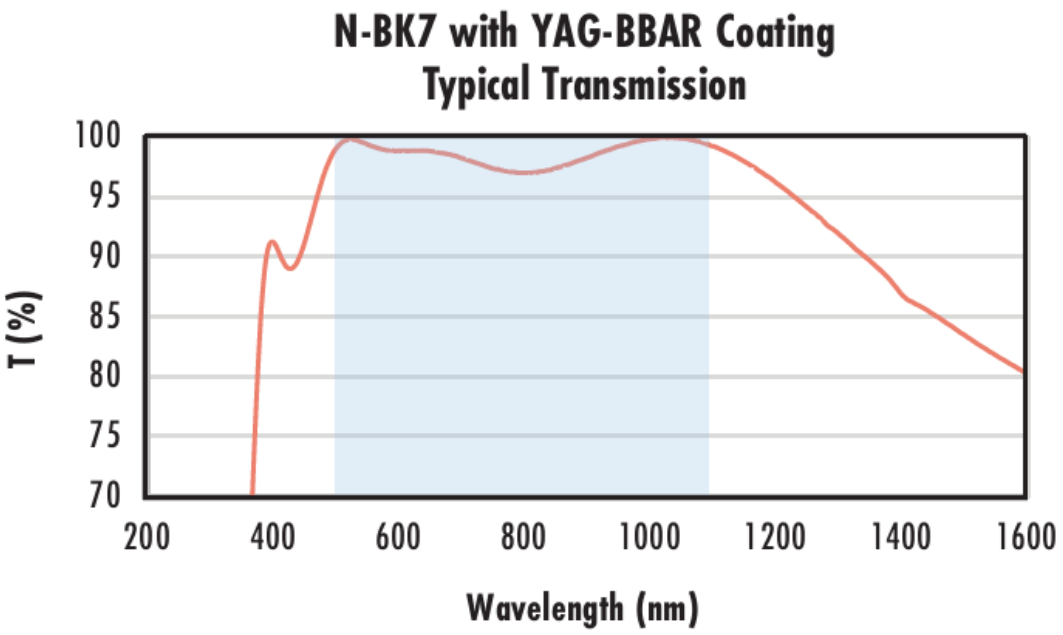


Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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

$R_{abs} \leq 0.25\%$ @ 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.

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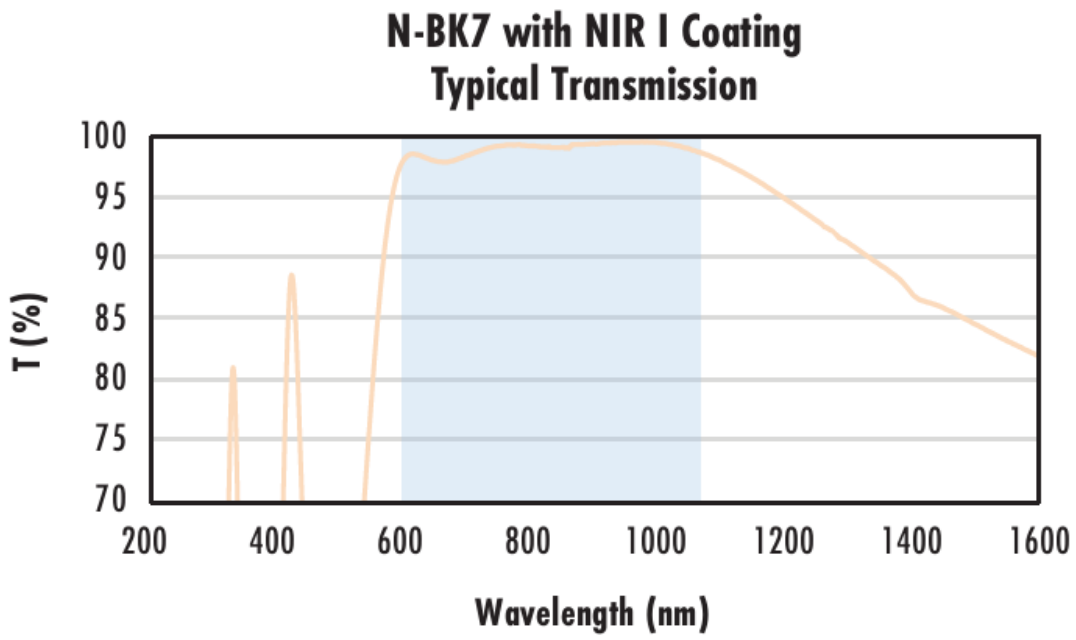


Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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

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

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

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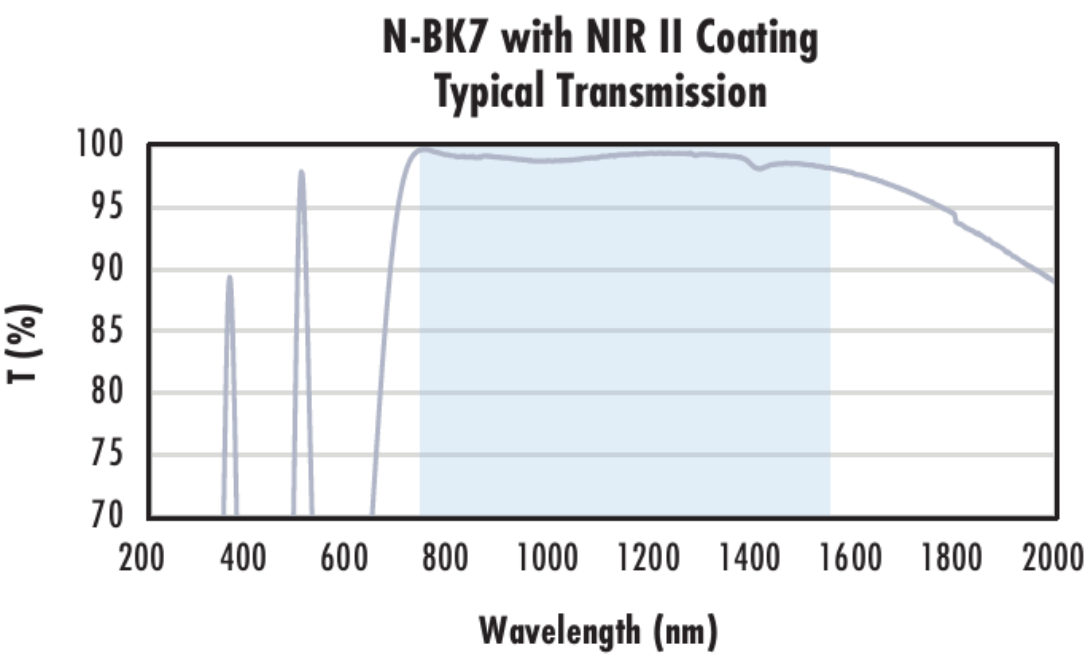


Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.

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

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

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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

Learn more about our **custom manufacturing capabilities** or submit an inquiry **here.**