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# TECHSPEC® 12.5mm Dia. x 20mm FL, Uncoated, Plano-Convex Lens

Stock **#37-788** **20+ In Stock**

Other Coating Options

- 1 + **S$45.85**

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| Qty 1-9 | **S$45.85** each |
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## General

**Type:**
Plano-Convex Lens

## Physical & Mechanical Properties

**Diameter (mm):**
12.50 +0.0/-0.025

| | |
|---|---|
| **Centering (arcmin):** | <1 |
| **Center Thickness CT (mm):** | 3.50 ±0.05 |
| **Edge Thickness ET (mm):** | 1.40 |
| **Clear Aperture CA (mm):** | 11.5 |
| **Bevel:** | Protective as needed |

## Optical Properties

| | |
|---|---|
| **Effective Focal Length EFL (mm):** | 20.00 @ 587.6nm |
| **Back Focal Length BFL (mm):** | 17.69 |
| **Coating:** | Uncoated |
| **Substrate:** | N-BK7 |
| **Surface Quality:** | 40-20 |
| **Power (P-V) @ 632.8nm:** | 1.5λ |
| **Irregularity (P-V) @ 632.8nm:** | λ/4 |
| **Focal Length Tolerance (%):** | ±1 |
| **Radius $R_1$ (mm):** | 10.34 |
| **f/#:** | 1.6 |
| **Numerical Aperture NA:** | 0.31 |
| **Wavelength Range (nm):** | 350 - 2200 |

## Regulatory Compliance

| | |
|---|---|
| **Certificate of Conformance:** | View |
| **Reach 240:** | Compliant |

# Product Details

- Wavelength Range of 350-2200nm
- Precision Diameter and Centration Tolerances Allow for Easy OEM Integration
- Wide Variety of Diameters, Focal Lengths, and Coatings
- Anti-Reflection PCX Coating Options: $MgF_2$, VIS 0°, VIS-NIR, NIR I, NIR II, VIS-EXT, and YAG-BBAR

TECHSPEC® Uncoated Plano-Convex (PCX) Lenses have a positive focal length, making them ideal for collecting and focusing light in imaging applications. These lenses excel in optical systems by concentrating light onto a detector or imaging plane, enhancing clarity and detail. They are also valuable for a variety of applications involving emitters, detectors, lasers, and fiber optics.

Plano-Convex lenses are ideal for a multitude of optics and photonics applications, including biotech instruments such as DNA sequencers and polymerase chain reaction (PCR) testing platforms. Their uncoated design ensures consistent performance across a broad wavelength range, making them versatile and reliable components for various optical setups.

TECHSPEC Uncoated Plano-Convex (PCX) Lenses are available in a wide variety of diameters and focal lengths. Identical designs of these PCX lenses are also offered with broadband anti-reflective (BBAR) coatings, which include MgF2, VIS 0°, VIS-NIR, NIR I, NIR II, VIS-EXT, and YAG-BBAR.

These coatings minimize surface reflections and maximize light transmission across different spectral ranges, ensuring optimal performance in various imaging and photonics applications. Whether for general use or specialized needs, TECHSPEC® PCX Lenses deliver precision and adaptability to enhance the effectiveness of optical systems.

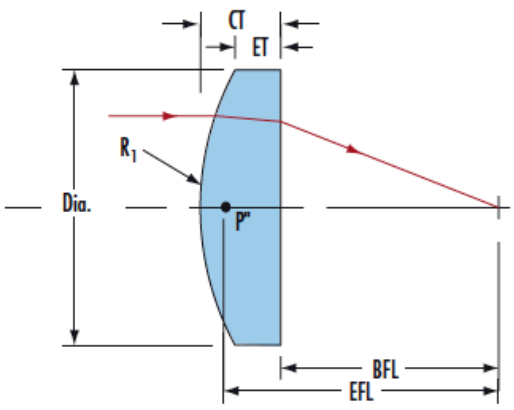
Customers can utilize TECHSPEC® Uncoated Plano-Convex (PCX) Lenses in various ways:

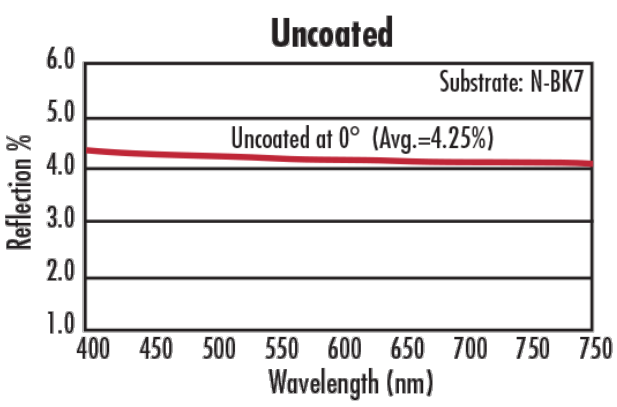
- For emitters and detectors, these lenses are ideal for focusing and collimating light to enhance signal detection.
- In laser applications, they can be used to focus laser beams or to couple light efficiently into optical fibers, improving the performance of laser systems.
- For fiber optics, PCX lenses help couple light between fibers and other optical components, optimizing signal transmission and minimizing loss.
- In biotech instruments such as DNA sequencers and PCR testing platforms, these lenses focus light onto samples or detectors. Their ability to provide precise light collection and focusing enhances the accuracy and reliability of optical measurements, making them essential for high-resolution imaging and detection tasks.

By integrating TECHSPEC® Uncoated PCX Lenses into these systems, customers can achieve improved optical performance and enhanced functionality across various photonics and optical applications.

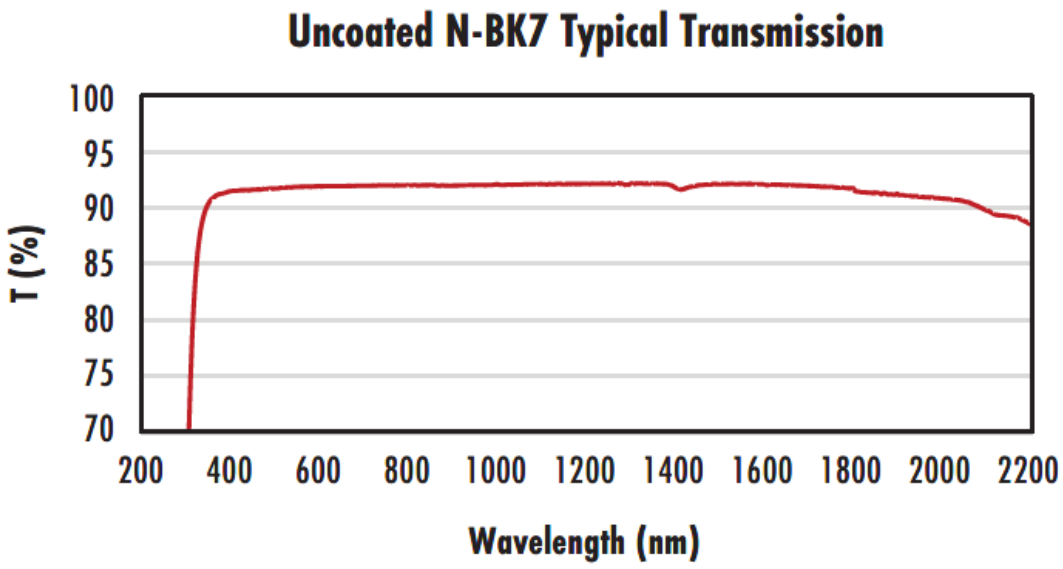
TECHSPEC Uncoated Plano-Convex (PCX) Lenses are available in a variety of diameters, focal lengths, and optical materials. Plano-convex lenses are manufactured from high quality materials such as UV Grade Fused Silica, N-BK7 Optical Glass, and a wide variety of Infrared (IR) materials. Different materials are useful for a variety of applications; review our lens material selection tech note for additional information.

# Technical Information




N-BK7




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

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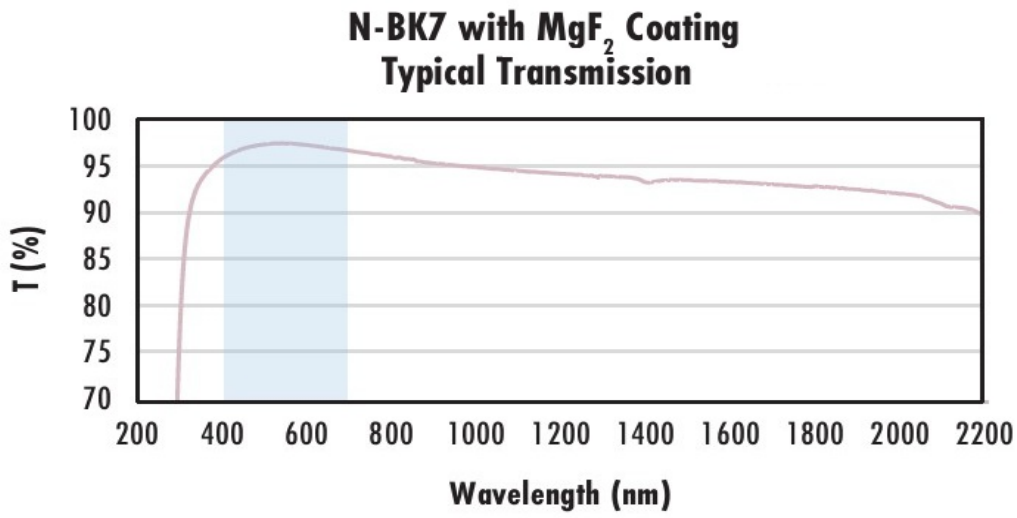


Typical transmission of a 3mm thick N-BK7 window with MgF2 (400-700nm) coating at 0° AOI.

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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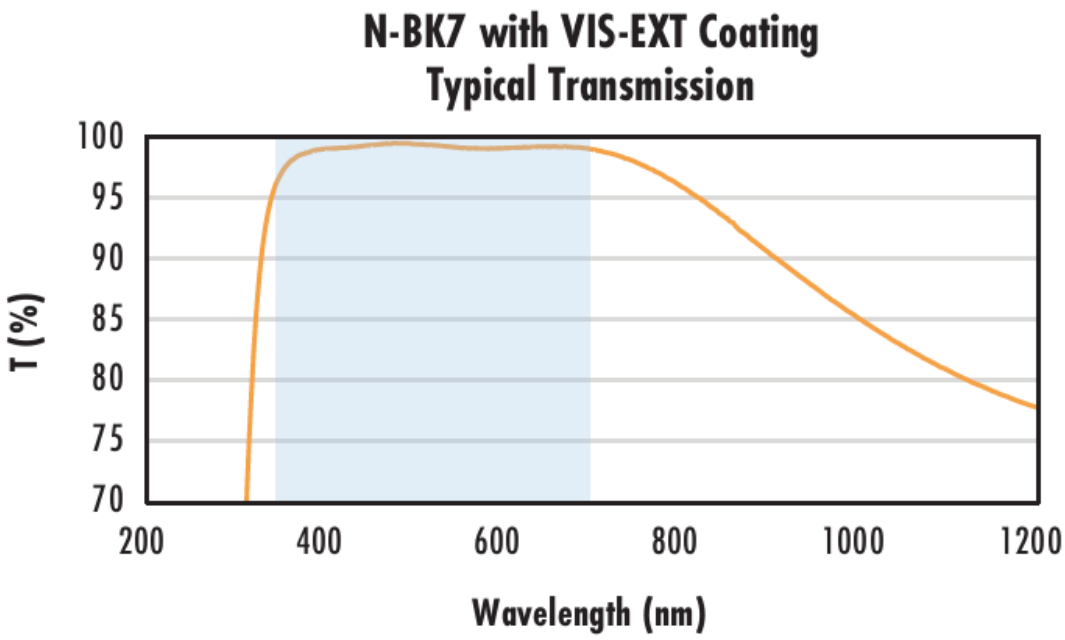


Typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI.

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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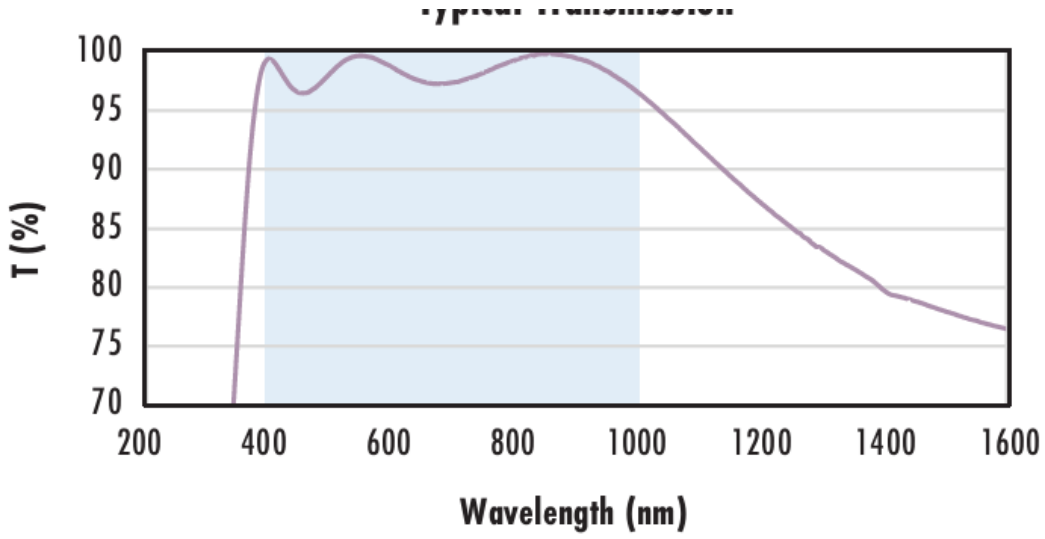
N-BK7 with VIS-NIR Coating
Typical Transmission




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 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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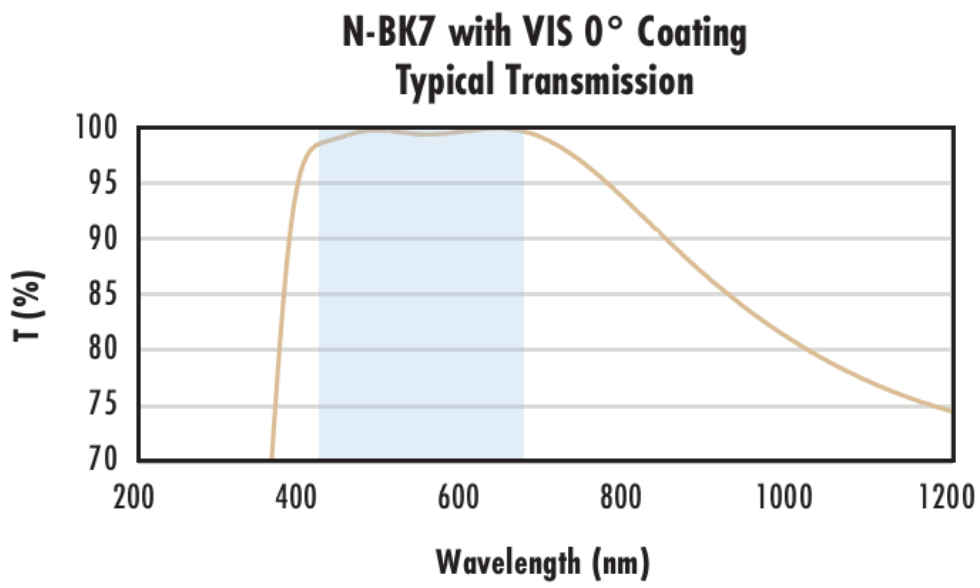


Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.

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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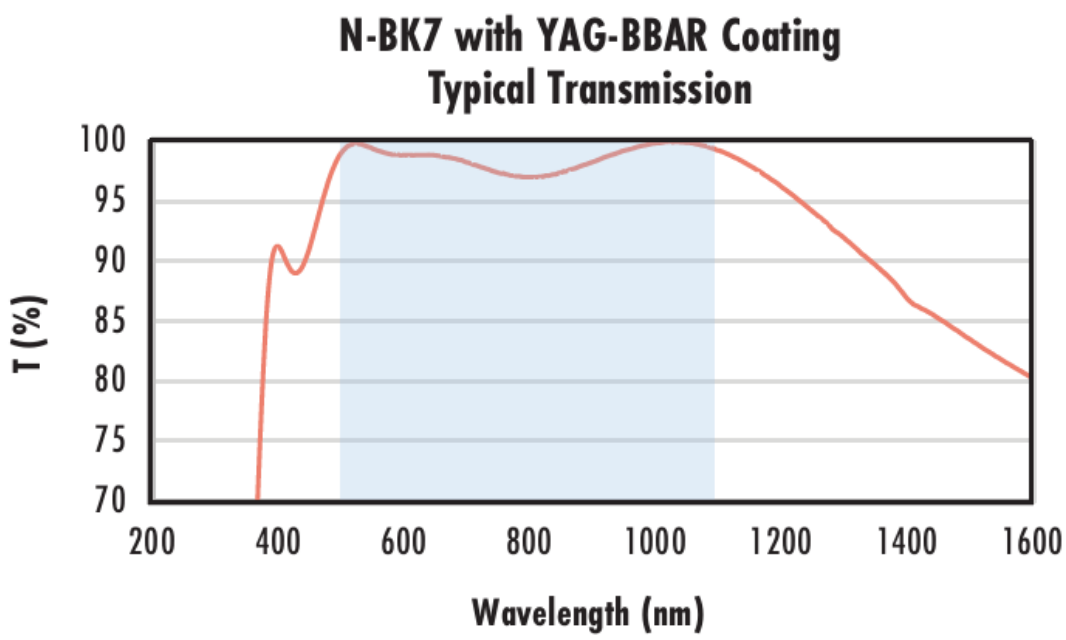


Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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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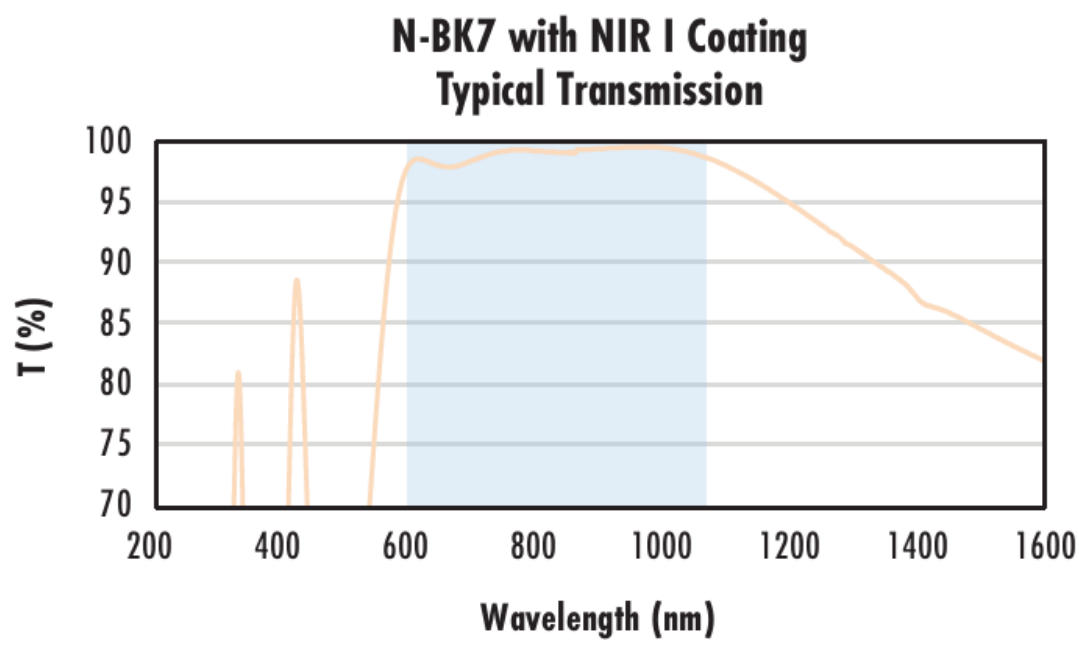


Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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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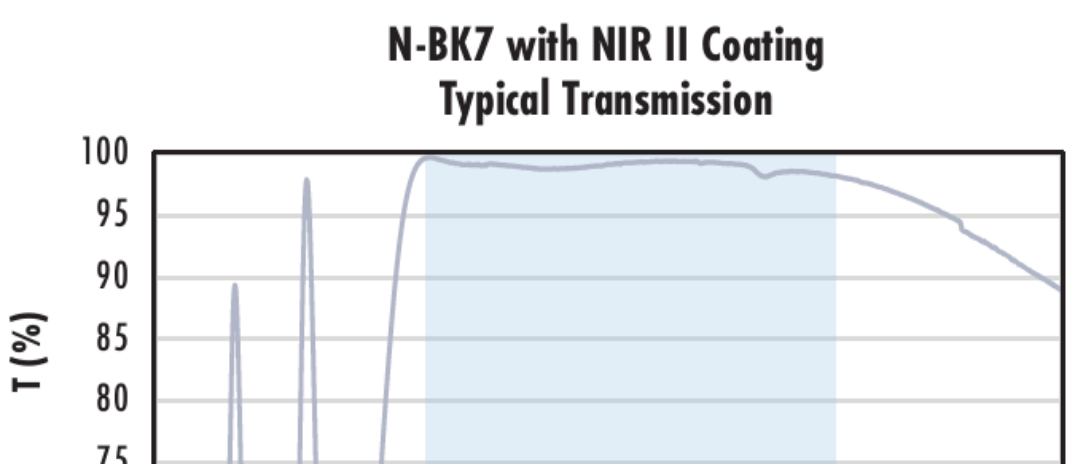
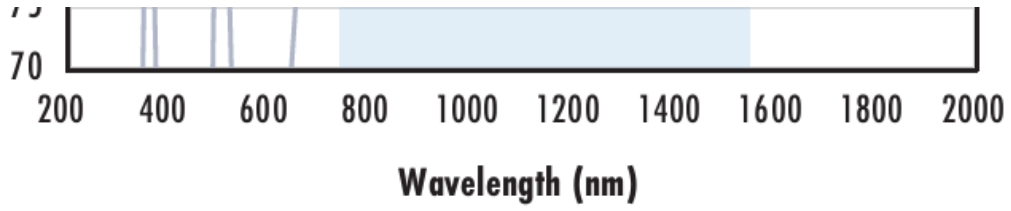



Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.

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

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

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

## Compatible Mounts