

TECHSPEC[®] 12.0mm Dia. x 54.0mm FL, Uncoated, Plano-Convex Lens



Stock **#45-304** 20+ In Stock

☐ Other Coating Options

-

1

+

€30^{,39}

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Volume Pricing	
Qty 1-9	€30,39 each
Qty 10-24	€27,30 each
Qty 25-49	€24,21 each
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Prices shown are exclusive of VAT/local taxes

Product Downloads

SPECIFICATIONS

General

Plano-Convex Lens		Type:
Physical & Mechanical Properties		
Diameter (mm):		12.00 +0.0/-0.025
Centering (arcmin):		<1
Center Thickness CT (mm):		3.00 ±0.05
Edge Thickness ET (mm):		2.35
Clear Aperture CA (mm):		11
Bevel:		Protective as needed
Optical Properties		
Effective Focal Length EFL (mm):		54.00 @ 587.6nm
Back Focal Length BFL (mm):		52.02
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):		27.91
f/#:		4.5
Numerical Aperture NA:		0.11
Wavelength Range (nm):		350 - 2200
Regulatory Compliance		
RoHS 2015:		Compliant
Reach 219:		Compliant
Certificate of Conformance:		View

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: [MgF₂](#), [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.

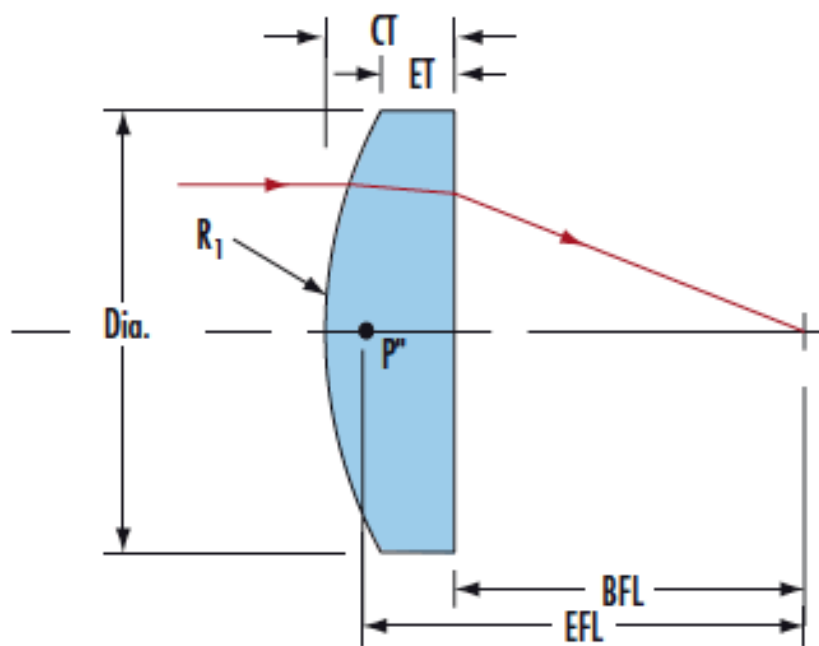
Customers can utilize TECHSPEC® Uncoated Plano-Convex (PCX) Lenses in various ways:

- 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.

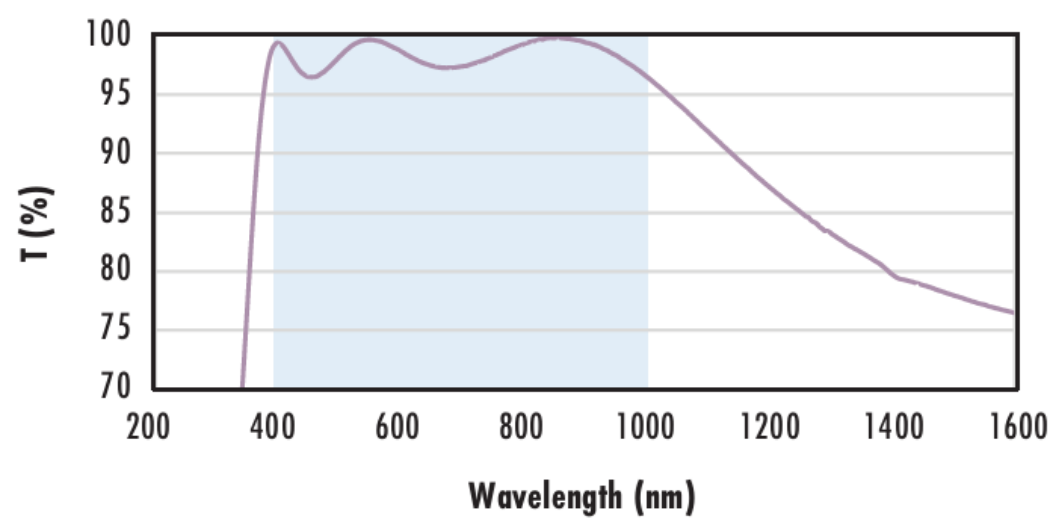
By integrating TECHSPEC® Uncoated PCX Lenses into these systems, customers can achieve improved optical performance and enhanced functionality across various photonics and optical applications.

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	
Uncoated N-BK7 Typical Transmission The graph shows the typical transmission of a 3mm thick, uncoated N-BK7 window across the UV-NIR spectra. The y-axis represents transmission T (%) from 70 to 100, and the x-axis represents wavelength in nm from 200 to 2200. The transmission is high, starting at approximately 90% at 200 nm, rising to about 92% by 400 nm, and remaining relatively constant around 92% until 2000 nm, where it begins to drop slightly to about 88% at 2200 nm.	Typical transmission of a 3mm thick, uncoated N-BK7 window across the UV - NIR spectra. Click Here to Download Data
N-BK7 with MgF₂ Coating Typical Transmission The graph shows the typical transmission of a 3mm thick N-BK7 window with MgF₂ (400-700nm) coating at 0° AOI. The y-axis represents transmission T (%) from 70 to 100, and the x-axis represents wavelength in nm from 200 to 2200. The transmission is high, starting at approximately 90% at 200 nm, rising to about 95% by 400 nm, and remaining relatively constant around 95% until 2000 nm, where it begins to drop slightly to about 90% at 2200 nm. A blue shaded region indicates the coating design wavelength range from 400 nm to 700 nm.	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
N-BK7 with VIS-EXT Coating Typical Transmission The graph shows the typical transmission of a 3mm thick N-BK7 window with VIS-EXT (350-700nm) coating at 0° AOI. The y-axis represents transmission T (%) from 70 to 100, and the x-axis represents wavelength in nm from 200 to 1200. The transmission is high, starting at approximately 70% at 200 nm, rising to about 95% by 400 nm, and remaining relatively constant around 95% until 700 nm, where it begins to drop to about 80% at 1200 nm. A blue shaded region indicates the coating design wavelength range from 350 nm to 700 nm.	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. Click Here to Download Data
N-BK7 with VIS-NIR Coating Typical Transmission	



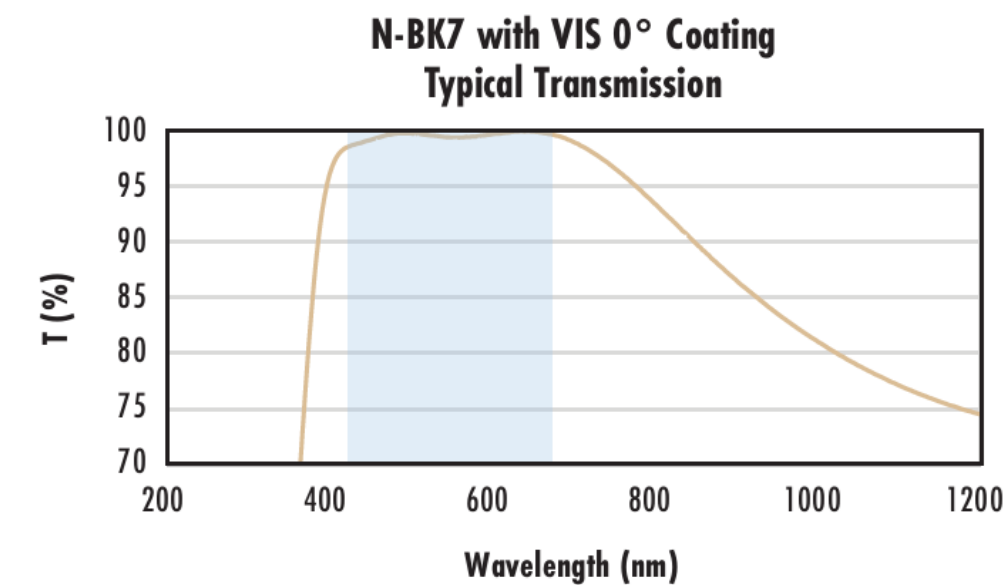
Typical transmission of a 3mm thick N-BK7 window with VIS-NIR (400-1000nm) coating at 0° AOI.

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

$R_{abs} \leq 0.25\%$ @ 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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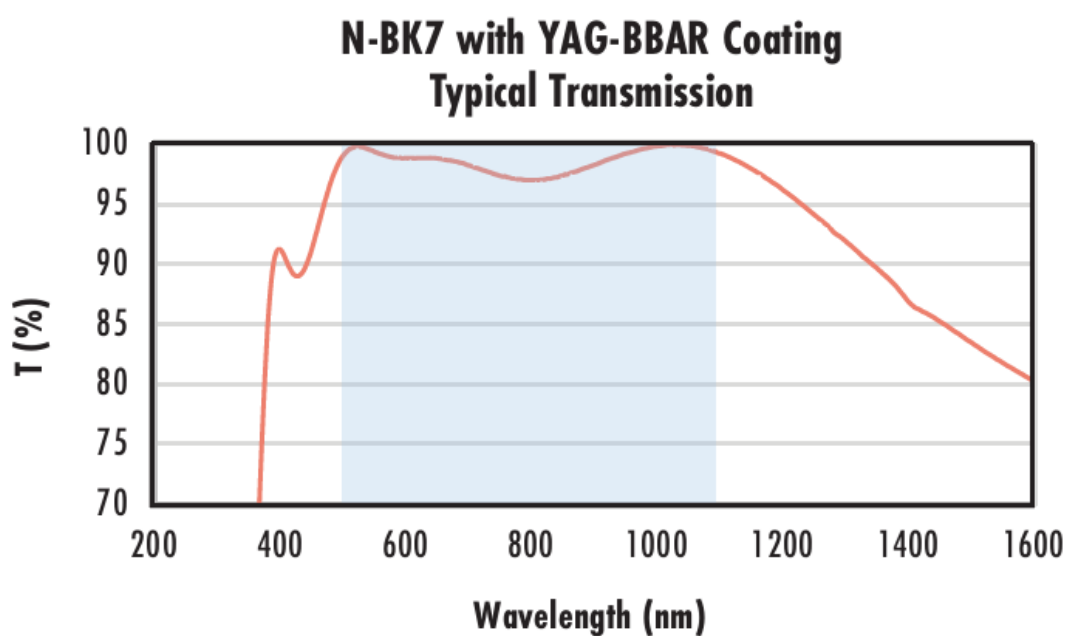
Typical transmission of a 3mm thick N-BK7 window with VIS 0° (425-675nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength 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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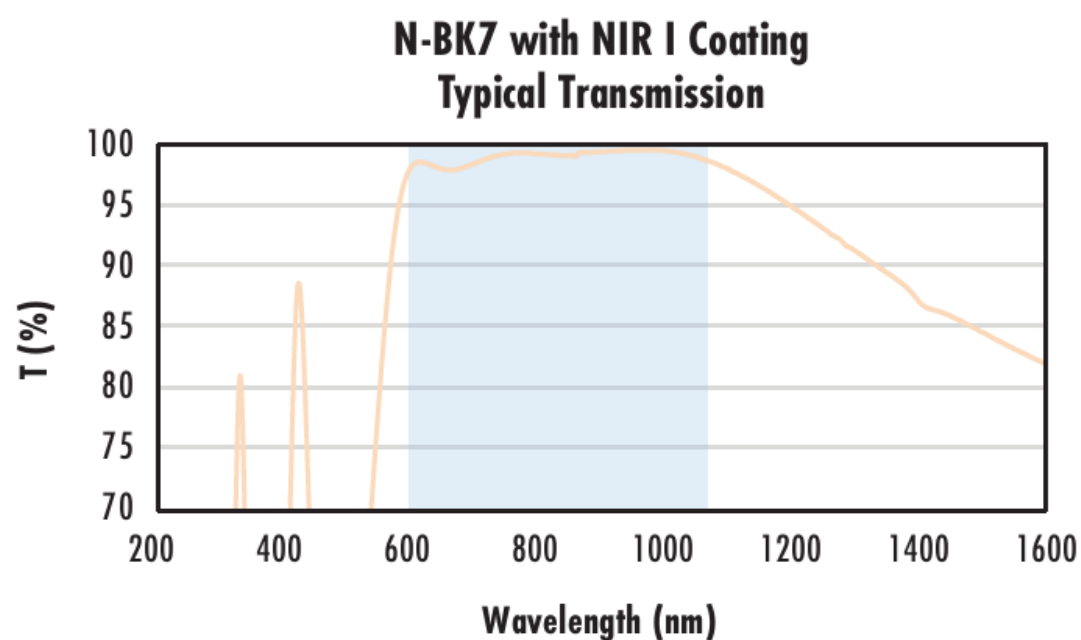
Typical transmission of a 3mm thick N-BK7 window with YAG-BBAR (500-1100nm) coating at 0° AOI.

The blue shaded region indicates the coating design wavelength 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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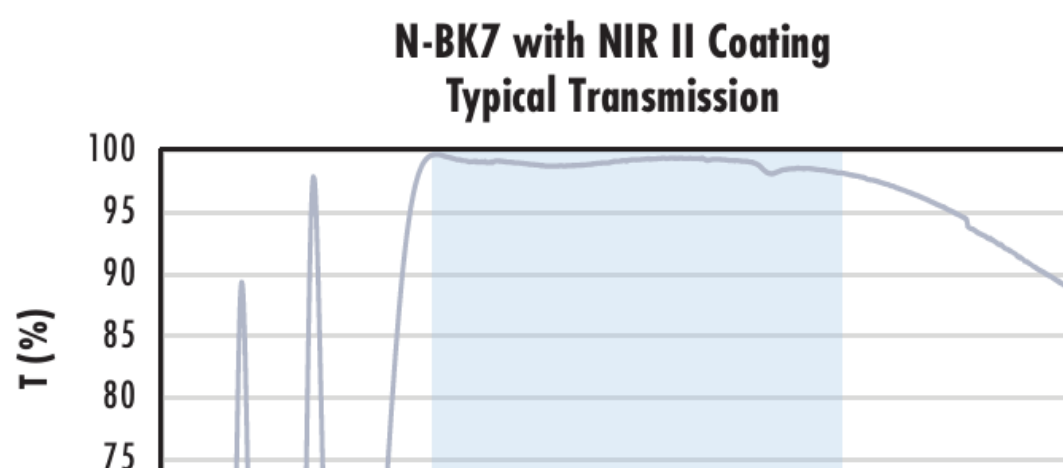
Typical transmission of a 3mm thick N-BK7 window with NIR I (600 - 1050nm) coating at 0° AOI.

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

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

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

[Click Here to Download Data](#)



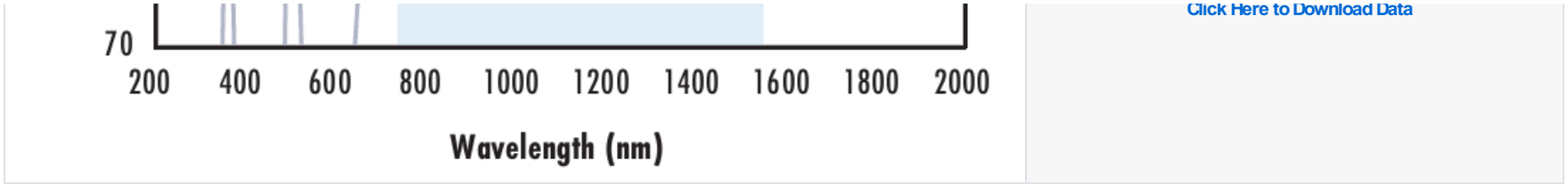
Typical transmission of a 3mm thick N-BK7 window with NIR II (750 - 1550nm) coating at 0° AOI.

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

$R_{abs} \leq 1.5\%$ @ 750 - 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.

[Click Here to Download Data](#)



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