

**TECHSPEC®**

# 9mm Dia. x 13.5mm FL, VIS-NIR Coated, Double-Convex Lens



Stock #45-867 **3 In Stock** [Other Coating Options](#)

1 **£39<sup>.20</sup>**

**ADD TO CART**



Volume Pricing	
Qty 1-9	£39.20 each
Qty 10-24	£35.20 each
Qty 25-99	£31.40 each
Need More?	<a href="#">Request Quote</a>

Prices shown are exclusive of VAT/local taxes

Product Downloads

- STEP:stp
- PDF Drawing:pdf
- ISO 10110 Drawing
- IGES:igs
- Zemax:zar
- Zemax:zmx
- eDrawing:eprt
- Code V:seq
- EO Spec Sheet
- [Download All](#)

## General

**Type:** Double-Convex Lens

## Physical & Mechanical Properties

<b>Diameter (mm):</b>	9.00 +0.0/-0.025	<b>Centering (arcmin):</b>	<1
<b>Bevel:</b>	Protective as needed	<b>Center Thickness CT (mm):</b>	2.75
<b>Center Thickness Tolerance (mm):</b>	±0.05	<b>Edge Thickness ET (mm):</b>	1.20
<b>Clear Aperture CA (mm):</b>	8.1		

## Optical Properties

<b>Back Focal Length BFL (mm):</b>	12.56	<b>Effective Focal Length EFL (mm):</b>	13.50
<b>Coating:</b>	VIS-NIR (400-1000nm)	<b>Coating Specification:</b>	R <sub>abs</sub> ≤ 0.25% @ 880nm R <sub>avg</sub> ≤ 1.25% @ 400 - 870 nm R <sub>avg</sub> ≤ 1.25% @ 890 - 1000nm
<b>Substrate:</b>	<a href="#">N-BK7</a>	<b>Surface Quality:</b>	40-20
<b>Power (P-V) @ 632.8nm:</b>	1.5λ	<b>Irregularity (P-V) @ 632.8nm:</b>	λ/4

<b>Radius R<sub>1</sub>=-R<sub>2</sub> (mm):</b>	13.46	<b>f/#:</b>	1.5
<b>Focal Length Specification Wavelength (nm):</b>	587.6	<b>Focal Length Tolerance (%):</b>	±1
<b>Numerical Aperture NA:</b>	0.33	<b>Wavelength Range (nm):</b>	400 - 1000
<b>Damage Threshold, By Design: ⓘ</b>	5 J/cm <sup>2</sup> @ 532nm, 10ns		

## Regulatory Compliance

<b>RoHS 2015:</b>	<b>Compliant</b>	<b>Certificate of Conformance:</b>	<b>View</b>
<b>Reach 235:</b>	<b>Compliant</b>		

## Need different specs or modifications?

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](#).

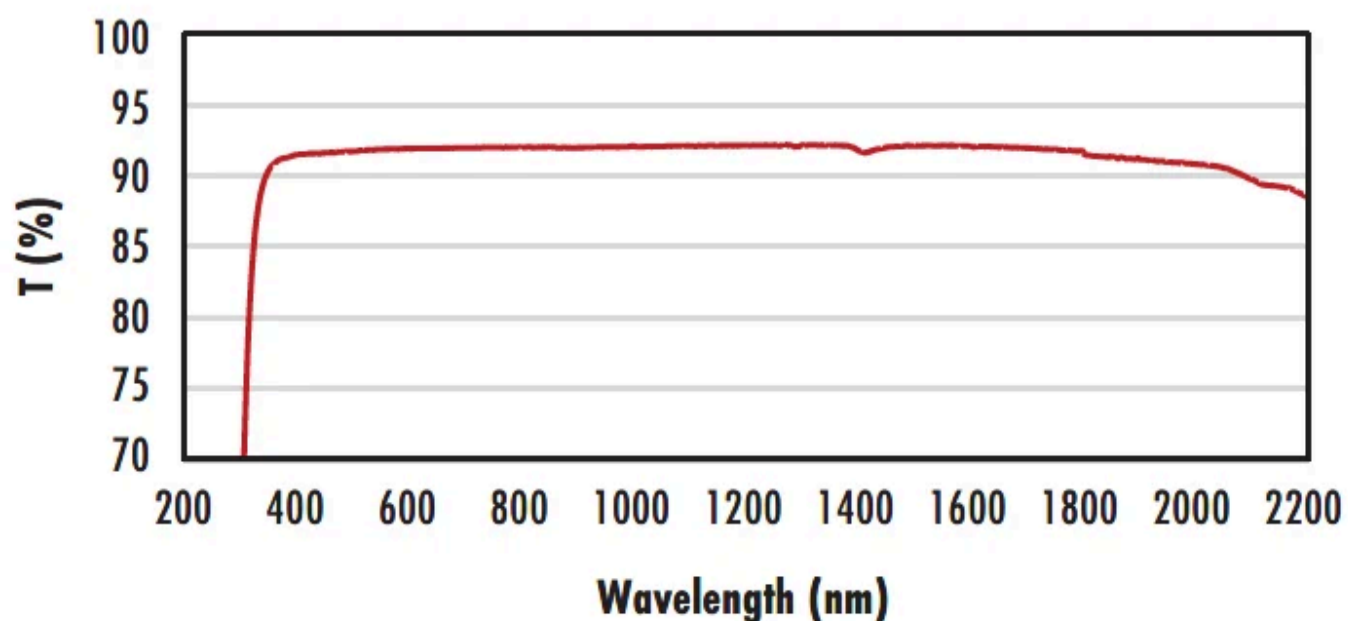
## Product Details

- AR Coated to Provide <1.25% Reflectance per Surface for 400 - 1000nm
- Minimize Aberrations Including Spherical and Coma
- **UV Fused Silica DCX Lenses** Available
- Other Coating Options Available: **Uncoated**, **MgF<sub>2</sub>**, **VIS 0°**, **NIR I**, **NIR II**, **VIS-EXT**, and **YAG-BBAR**

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

## Technical Information

### Uncoated N-BK7 Typical Transmission



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

[Click Here to Download Data](#)

### N-BK7 with MgF<sub>2</sub> Coating Typical Transmission



Typical transmission of a 3mm thick N-BK7 window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.

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

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

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



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

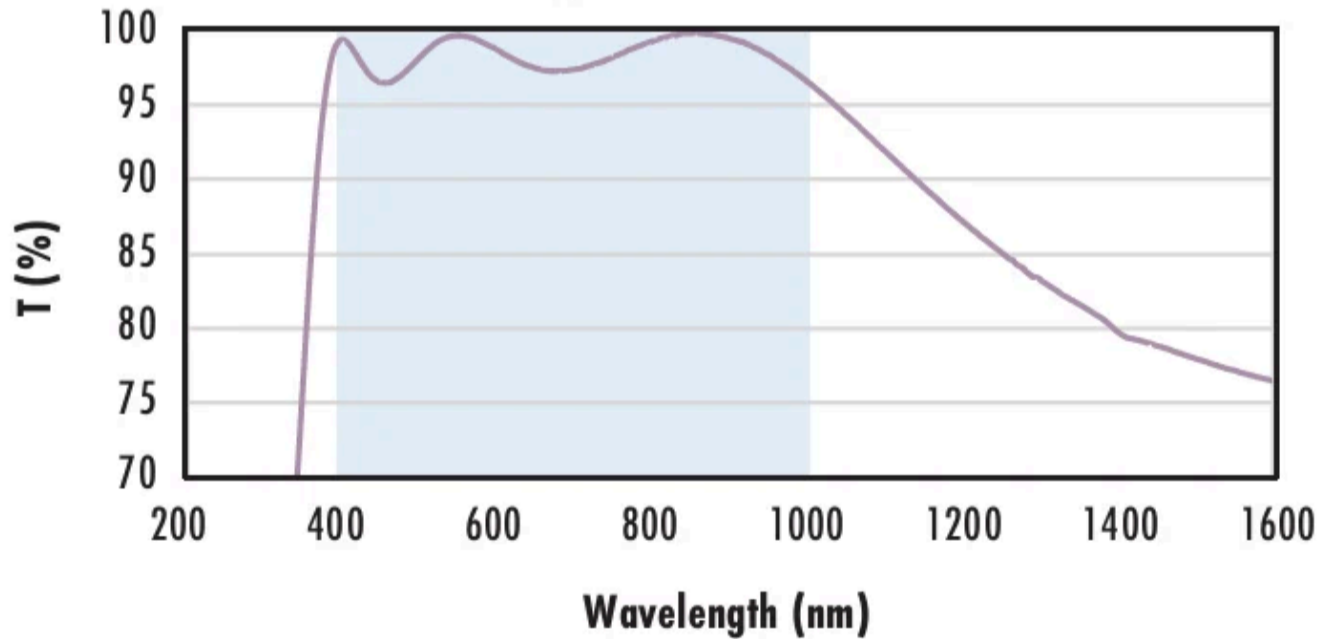
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

$$\begin{aligned} R_{abs} &\leq 0.25\% \text{ @ } 880\text{nm} \\ R_{avg} &\leq 1.25\% \text{ @ } 400 - 870\text{nm} \\ R_{avg} &\leq 1.25\% \text{ @ } 890 - 1000\text{nm} \end{aligned}$$

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

[Click Here to Download Data](#)

### N-BK7 with VIS 0° Coating Typical Transmission



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

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

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

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:

$$R_{abs} \leq 0.25\% \text{ @ } 532\text{nm}$$

$$R_{abs} \leq 0.25\% \text{ @ } 1064\text{nm}$$

$$R_{avg} \leq 1.0\% \text{ @ } 500 - 1100\text{nm}$$

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 I (600 – 1050nm) coating at 0° AOI.

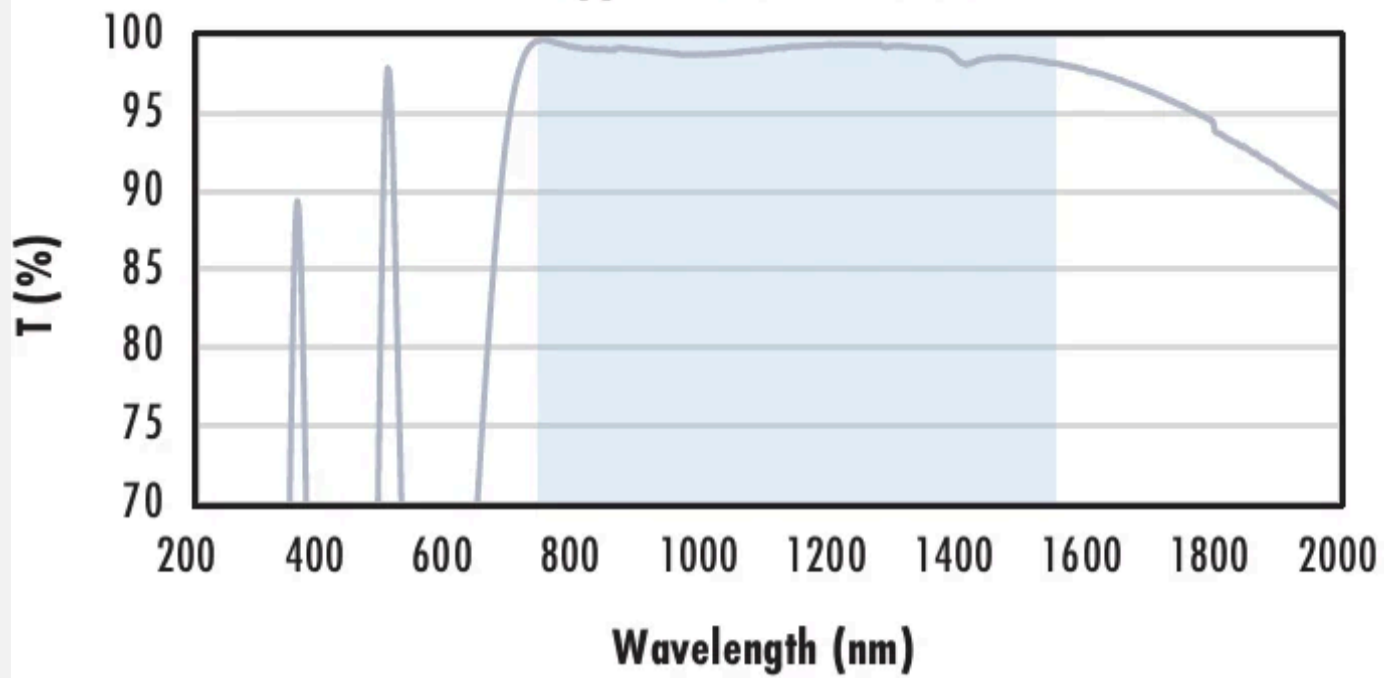
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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 II (750 - 1550nm) coating at 0° AOI.

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

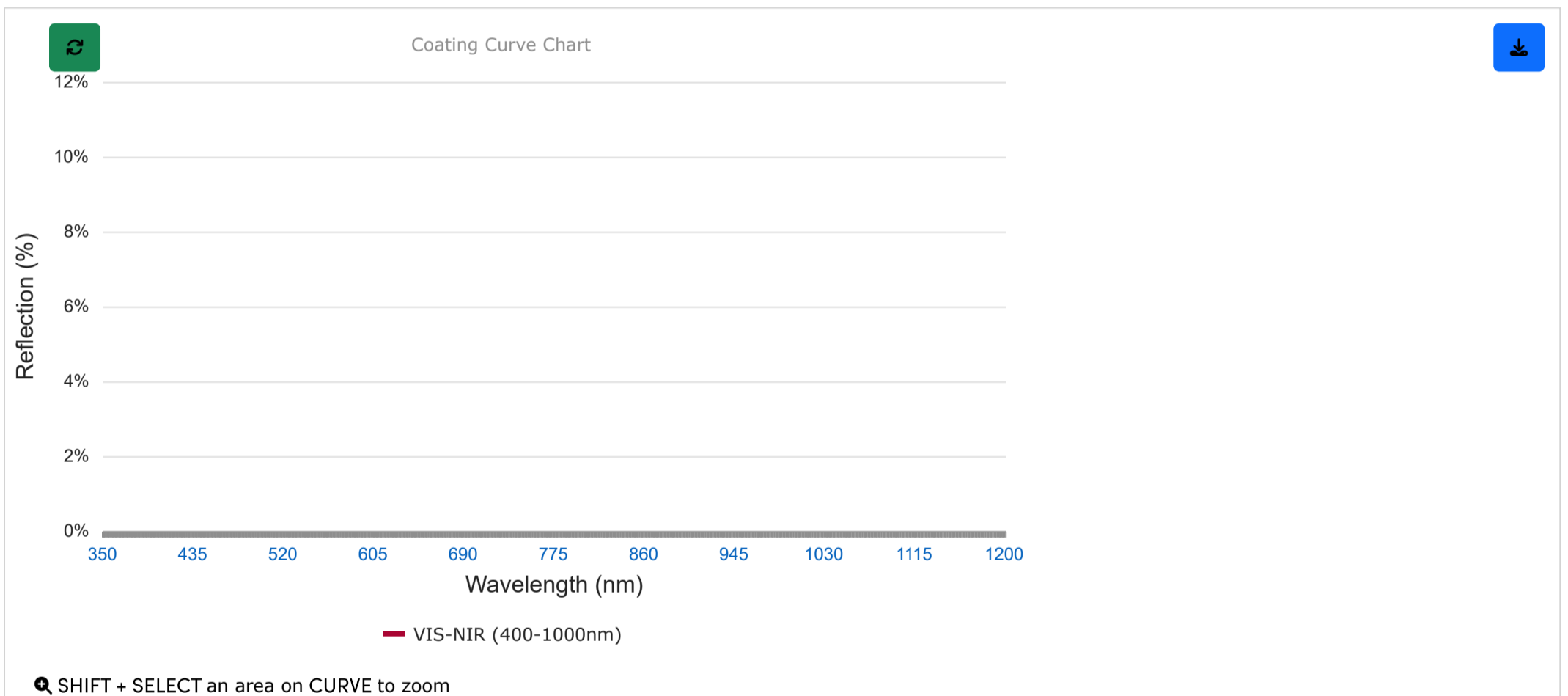
- $R_{abs} \leq 1.5\%$  @ 750 - 800nm
- $R_{abs} \leq 1.0\%$  @ 800 - 1550nm
- $R_{avg} \leq 0.7\%$  @ 750 - 1550nm

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

[Click Here to Download Data](#)

## Coating Curves

VIS-NIR (400-1000nm)



Please note that coating performance outside each product's specified design range is theoretical and may vary.

## Related Products



UV Fused Silica Double-Convex (DCX) Lenses



Uncoated Double-Convex (DCX) Lenses



Plano-Convex (PCX) and Simple Lens Kits



Optical Cleaning

## Frequently Purchased Together



#45-479 - 9.0mm Dia. x 36.0mm FL, VIS-NIR Coated, Plano-Convex Lens  
**£37.00**

Qty



#43-674 - 9mm Dia. x 4.5mm FL Protected Aluminum, Concave Mirror  
**£36.40**

Qty



#45-313 - 12.5mm Diameter, 50R/50T, Plate Beamsplitter  
**£43.60**



Qty



#45-357 - 9.0mm Dia. x 45.0mm FL, MgF<sub>2</sub> Coated, Plano-Convex Lens  
**£30.60**

Qty

## Compatible Mounts

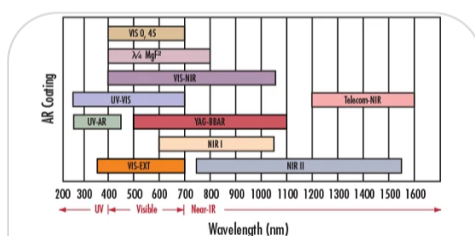
	Title	Type	Compare	Stock Number	Price	Buy
 	9.0mm Optic Dia., Optic Mount	Fixed		#64-553	£26.20 <a href="#">Request Quote</a>	8 In Stock <input type="text" value="1"/>

Check out our full selection of mounts [here](#).

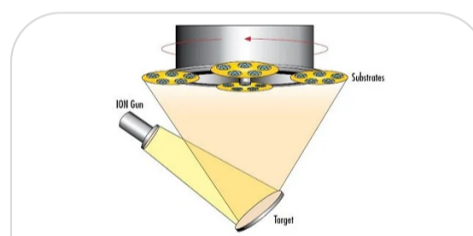
## Resources

### Media Type

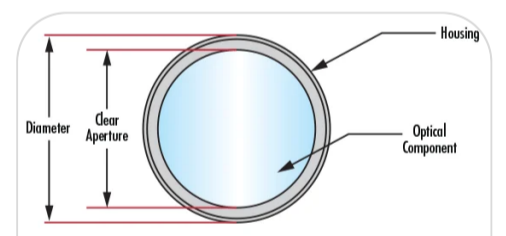
- Application Note
- Glossary
- Technical Tool
- Video
- FAQ
- Trending in Optics



**APPLICATION NOTE**  
Anti-Reflection (AR) Coatings



**APPLICATION NOTE**  
An Introduction to Optical Coatings



**APPLICATION NOTE**  
Understanding Optical Specifications



**GLOSSARY**  
NIR (Near Infrared)



**GLOSSARY**  
VIS/NIR Coating

APPLICATION NOTE

## Lens Geometry Performance Comparison

[View More](#)