

TECHSPEC®

50mm Dia. x 250mm FL, VIS-NIR, Inked, Double-Convex Lens



Stock #45-909-INK [CONTACT US](#)

1 C\$131.⁶⁰

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Volume Pricing	
Qty 1-9	C\$131.60 each
Qty 10-24	C\$118.30 each
Qty 25-99	C\$105.00 each
Need More?	Request Quote

Product Downloads	
STEP:stp	PDF Drawing:pdf
ISO 10110 Drawing	
IGES:igs	Zemax:zar
Zemax:zmx	eDrawing:eprt
Code V:seq	EO Spec Sheet

General

Type: Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm): 50.00	Centering (arcmin): <1
Bevel: Protective as needed	Center Thickness CT (mm): 4.93
Center Thickness Tolerance (mm): ±0.10	Edge Thickness ET (mm): 2.50
Clear Aperture CA (mm): 49.00	

Optical Properties

Back Focal Length BFL (mm): 248.37	Effective Focal Length EFL (mm): 250.00
Coating: VIS-NIR (400-1000nm)	Coating Specification: R _{abs} ≤ 0.25% @ 880nm R _{avg} ≤ 1.25% @ 400 - 870 nm R _{avg} ≤ 1.25% @ 890 - 1000nm
Substrate: N-BK7	Surface Quality: 40-20
Radius R₁=-R₂ (mm): 257.57	f/#: 5.00
Focal Length Tolerance (%): ±1	Numerical Aperture NA: 0.10

Wavelength Range (nm): 400 - 1000

Regulatory Compliance

Certificate of Conformance: [View](#)

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](#).

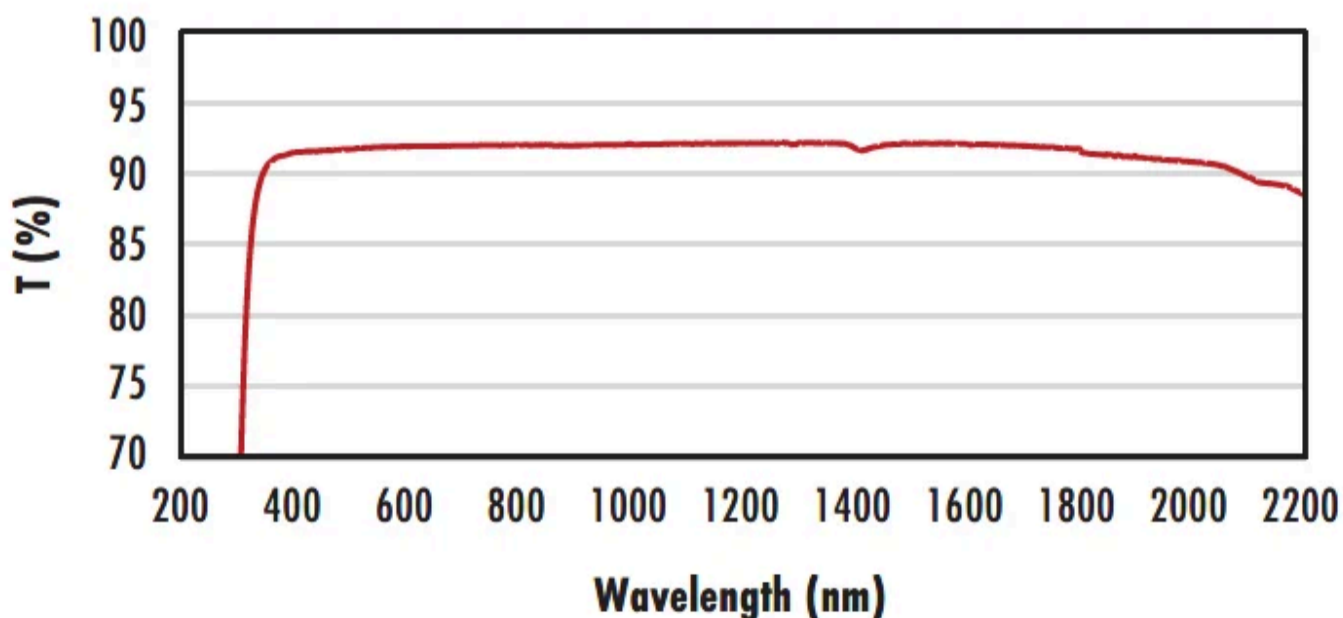
Product Details

- 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**, **MgF₂**, **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

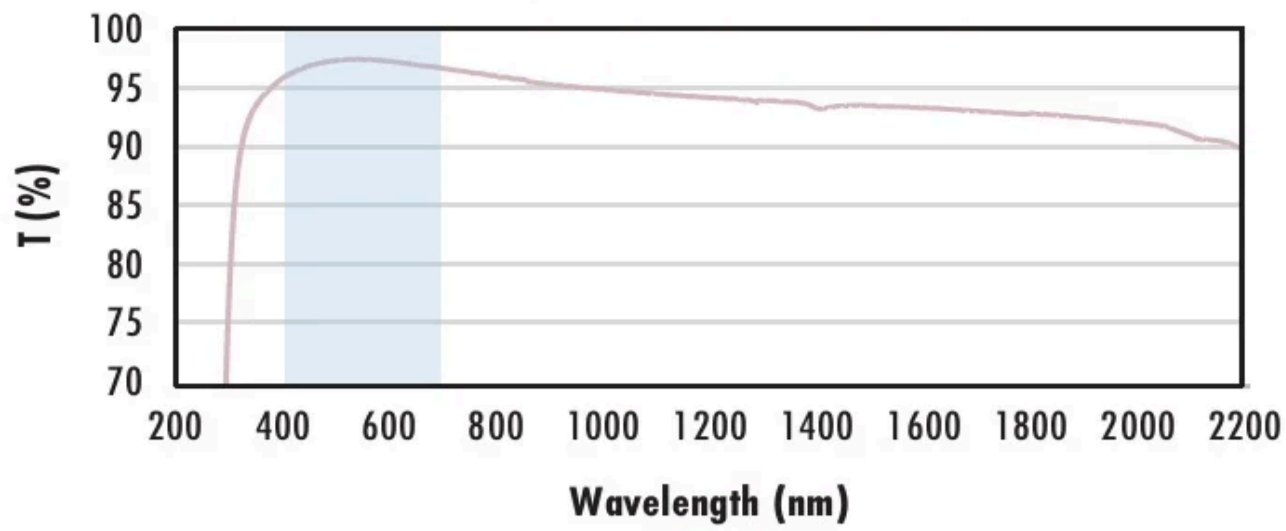
Uncoated N-BK7 Typical Transmission



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

[Click Here to Download Data](#)

N-BK7 with MgF₂ Coating Typical Transmission



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:

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

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.

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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 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:

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

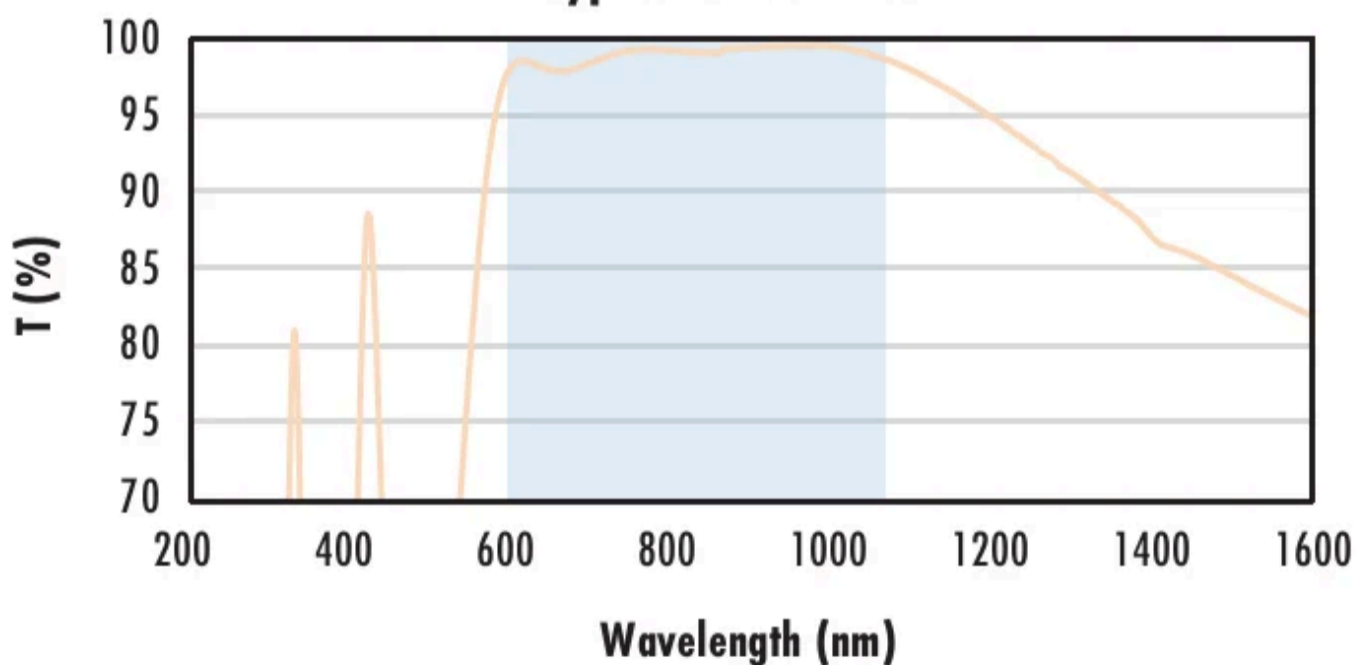
$$R_{abs} \leq 0.25\% \text{ @ } 1064\text{nm}$$

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

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.

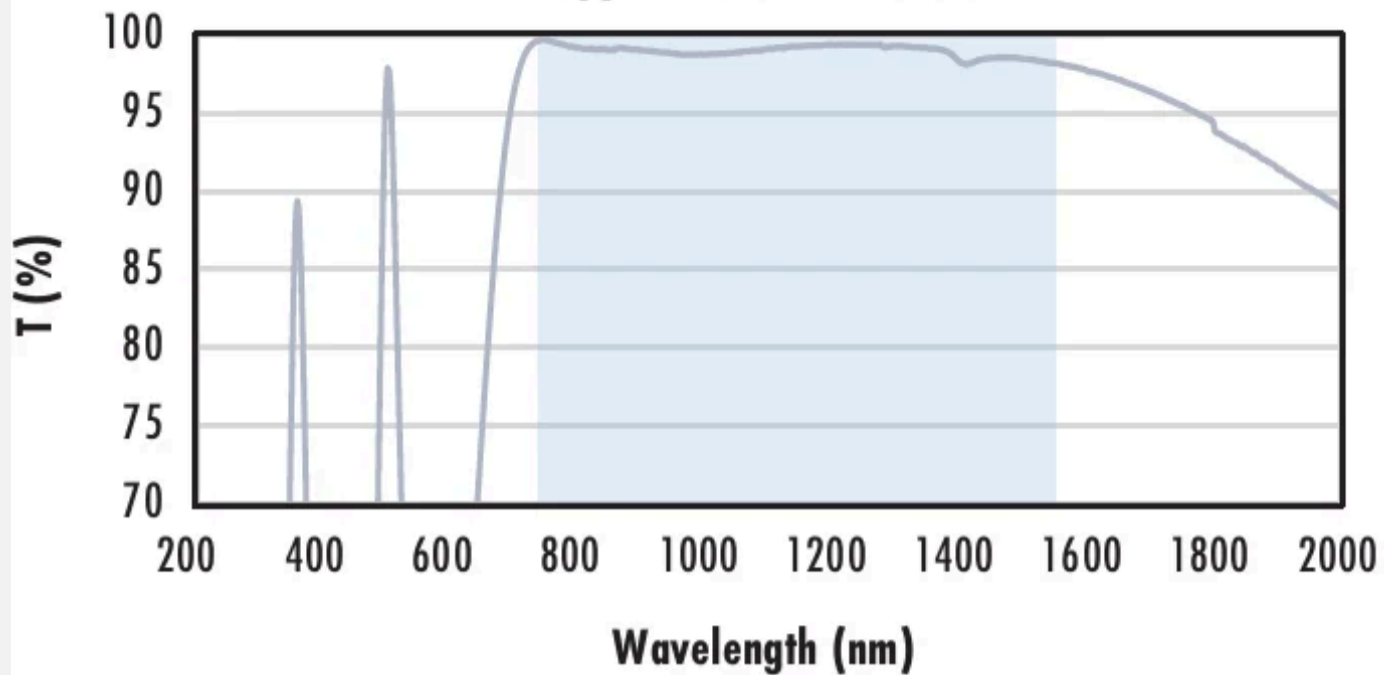
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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:

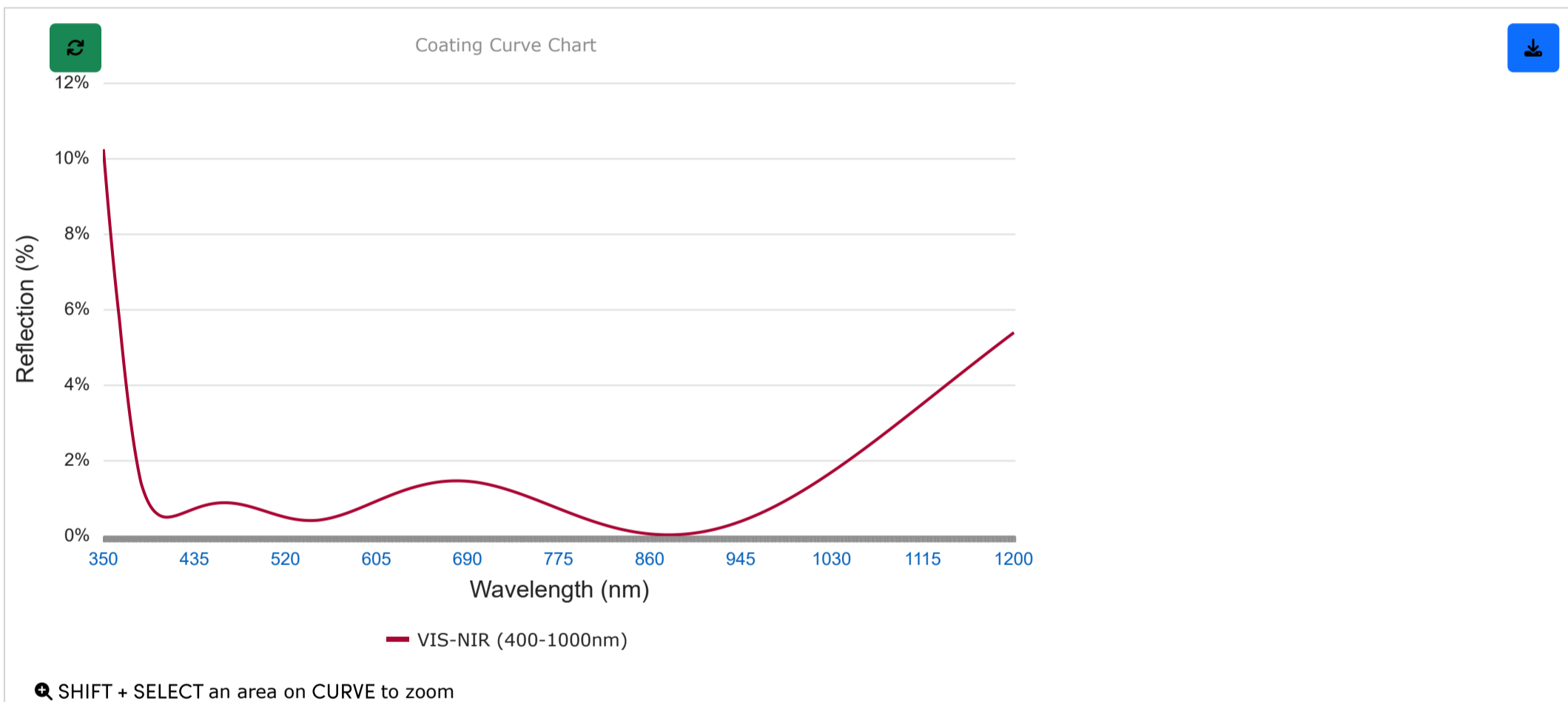
- $R_{abs} \leq 1.5\%$ @ 750 - 800nm
- $R_{abs} \leq 1.0\%$ @ 800 - 1550nm
- $R_{avg} \leq 0.7\%$ @ 750 - 1550nm

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

Compatible Mounts

	Title	Type	Compare	Stock Number	Price	Buy
 	50.0/50.8mm Optic Dia., SM2 Thin Mount	Fixed		#17-716	C\$50.75 Request Quote	20+ In Stock <input type="text" value="1"/> 
 	50.0mm Optic Dia., Optic Mount	Fixed		#64-567	C\$68.95 Request Quote	2 In Stock <input type="text" value="1"/> 
 	50.0mm Optic Dia., Optic Mount	Fixed		#64-568	C\$68.95 Request Quote	7 In Stock <input type="text" value="1"/> 
 	50mm Diameter, T-Mount Thin Optic Mount	Fixed		#88-943	C\$144.20 Request Quote	20+ In Stock <input type="text" value="1"/> 
 	50.0/50.8mm Optic Dia., X-Y Translating Optic Mount	Adjustable - Linear (XY)		#62-957	C\$431.20 Request Quote	1 In Stock <input type="text" value="1"/> 
 	50.0/50.8mm Optic Dia., X-Y-Z Translating Optic Mount	Adjustable - Linear (XYZ)		#62-960	C\$847.00 Request Quote	20+ In Stock <input type="text" value="1"/> 
 	50.0/50.8mm Optic Dia., 5 Axes Optical Mount	Adjustable - Linear (XYZ) & Tip-Tilt		#13-778	C\$1,176.00 Request Quote	10 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

APPLICATION NOTE

Lens Geometry Performance Comparison

GLOSSARY

NIR (Near Infrared)

GLOSSARY

VIS/NIR Coating

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