

**TECHSPEC® 50mm Dia. x 75mm FL, MgF<sub>2</sub> Coated, Plano-Convex Lens**



UV Fused Silica Plano-Convex (PCX) Lenses



Stock #18-179 **CLEARANCE** 1 In Stock

⊖ 1 ⊕ €202<sup>95</sup>

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**General**

Plano-Convex Lens **Type:**

**Physical & Mechanical Properties**

50.00-0.025 **Diameter (mm):**

**Centering (arcmin):**

<1

Center Thickness CT (mm):  
12.50 ±0.10

Edge Thickness ET (mm):  
1.72

Clear Aperture CA (mm):  
49

Bevel:  
Protective as needed

## Optical Properties

Effective Focal Length EFL (mm):  
75.00 @ 587.6nm

Back Focal Length BFL (mm):  
66.43

Coating:  
MgF<sub>2</sub> (400-700nm)

Coating Specification:  
R<sub>avg</sub> ≤ 1.75% @ 400 - 700nm

Substrate:   
Fused Silica (Corning 7980)

Surface Quality:  
40-20

Power (P-V) @ 632.8nm:  
3 Rings

Irregularity (P-V) @ 632.8nm:  
0.5 Rings

Focal Length Tolerance (%):  
±1

Radius R<sub>1</sub> (mm):  
34.39

f#:  
1.5

Numerical Aperture NA:  
0.33

Wavelength Range (nm):  
400 - 700

Damage Threshold, By Design:   
10 J/cm<sup>2</sup> @ 532nm, 10ns

## Regulatory Compliance

RoHS 2015:  
Compliant

Certificate of Conformance:  
View

Reach 235:  
Compliant

## 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 <1.75% Reflection per Surface for 400 - 700nm
- Precision Fused Silica Substrate
- Various Coating Options: [Uncoated](#), [UV-AR](#), [UV-VIS](#), [VIS-EXT](#), [VIS-NIR](#), [VIS 0°](#), [YAG-BBAR](#), [NIR I](#), and [NIR II](#)

TECHSPEC® UV Fused Silica Plano-Convex (PCX) Lenses MgF<sub>2</sub> Coated feature precision specifications and a [variety of coating options](#) on a broadband substrate. Fused Silica is commonly used in applications from the Ultraviolet (UV) through the Near-Infrared (NIR). Its low index of refraction, low coefficient of thermal expansion, and low inclusion content make it ideal for laser applications and harsh environmental conditions. TECHSPEC® UV Fused Silica Plano-Convex (PCX) Lenses MgF<sub>2</sub> Coated feature industry leading diameter and centration specifications, making them ideal for integration into demanding imaging and targeting applications. These lenses are AR coated with MgF<sub>2</sub> to increase performance in the VIS range.

## Technical Information

### Uncoated Fused Silica Typical Transmission



Typical transmission of an uncoated fused silica window across the UV - NIR spectra.

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### Fused Silica with MgF<sub>2</sub> Coating Typical Transmission



Typical transmission of a fused silica 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:

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

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

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### Fused Silica with UV-AR Coating Typical Transmission



Typical transmission of a fused silica window with UV-AR (250-425nm) coating at 0° AOI.

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

$$R_{abs} \leq 1.0\% @ 250 - 425\text{nm}$$

$$R_{avg} \leq 0.75\% @ 250 - 425\text{nm}$$

$$R_{avg} \leq 0.5\% @ 370 - 420\text{nm}$$

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

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### Fused Silica with UV-VIS Coating Typical Transmission



Typical transmission of a fused silica window with UV-VIS (250-700nm) coating at 0° AOI.

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

$$R_{abs} \leq 1.0\% @ 350 - 450\text{nm}$$

$$R_{avg} \leq 1.5\% @ 250 - 700\text{nm}$$

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

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### Fused Silica with VIS-EXT Coating Typical Transmission



Typical transmission of a fused silica 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.

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### Fused Silica with VIS-NIR Coating Typical Transmission



Typical transmission of a fused silica window with VIS-NIR (400-1000nm) coating at 0° AOI.

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

$$R_{abs} \leq 0.25\% @ 880\text{nm}$$

$$R_{avg} \leq 1.25\% @ 400 - 870\text{nm}$$

$$R_{avg} \leq 1.25\% @ 890 - 1000\text{nm}$$

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

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### Fused Silica with VIS 0° Coating Typical Transmission



Typical transmission of a fused silica window with VIS 0° (425-675nm) coating at 0° AOI.

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

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

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

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### Fused Silica with YAG-BBAR Coating Typical Transmission



Typical transmission of a fused silica window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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

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

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

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

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

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### Fused Silica with NIR I Coating

### Typical Transmission



Typical transmission of a fused silica window with NIR I (600 - 1050nm) coating at 0° AOI.

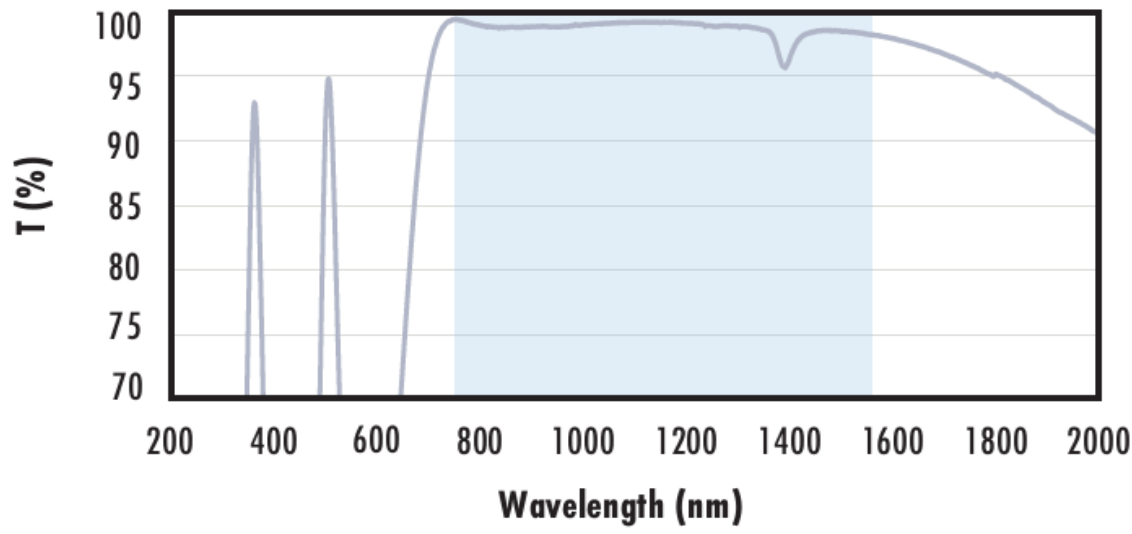
The blue shaded region indicates the coating design wavelength range, with the following specification:

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

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

[Click Here to Download Data](#)

### Fused Silica with NIR II Coating Typical Transmission



Typical transmission of a fused silica window with NIR II (750 - 1550nm) coating at 0° AOI.

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

$$R_{abs} \leq 1.5\% @ 750 - 800\text{nm}$$

$$R_{abs} \leq 1.0\% @ 800 - 1550\text{nm}$$

$$R_{avg} \leq 0.7\% @ 750 - 1550\text{nm}$$

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

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## Coating Curves