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**TECHSPEC® 12mm Dia. x 12mm FL, UV-AR Coated, UV Double-Convex Lens**



UV Fused Silica Double-Convex (DCX) Lenses



Stock **#48-040** **13 In Stock**

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⊖ 1 ⊕ **S\$217<sup>00</sup>**

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Volume Pricing	
Qty 1-5	<b>S\$217.00</b> each
Qty 6-25	<b>S\$173.60</b> each
Qty 26-49	<b>S\$162.40</b> each
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**General**

Double-Convex Lens **Type:**

**Physical & Mechanical Properties**

**Diameter (mm):**

12.00 +0.0/-0.025

Centering (arcmin):  
<1

Bevel:  
Protective as needed

Center Thickness CT (mm):  
7.09 ±0.05

Edge Thickness ET (mm):  
2.96

Clear Aperture CA (mm):  
11.00

## Optical Properties

Back Focal Length BFL (mm):  
9.25

Effective Focal Length EFL (mm):  
12.00

Coating:  
UV-AR (250-425nm)

Coating Specification:  
R<sub>abs</sub> ≤1.0% @ 250 - 425nm  
R<sub>avg</sub> ≤0.75% @ 250 - 425nm  
R<sub>avg</sub> ≤0.5% @ 370 - 420nm

Substrate:   
Fused Silica (Corning 7980)

Surface Quality:  
40-20

Power (P-V) @ 632.8nm:  
1.5λ

Irregularity (P-V) @ 632.8nm:  
λ/4

Radius R<sub>1</sub>=R<sub>2</sub> (mm):  
9.74

f#:  
1.00

Focal Length Specification Wavelength (nm):  
587.6

Focal Length Tolerance (%):  
±1

Numerical Aperture NA:  
0.50

Wavelength Range (nm):  
250 - 425

Damage Threshold, Reference:   
3 J/cm<sup>2</sup> @ 355nm, 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

- Ideal for Imaging Applications
- Minimize Aberrations Including Spherical and Coma
- Precision Fused Silica Substrate

TECHSPEC® UV Fused Silica 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 canceled due to the symmetric lens design. TECHSPEC® UV Fused Silica Double-Convex (DCX) Lenses have a precision fused silica substrate. These lenses are available uncoated or with UV-AR, UV-VIS, VIS-EXT, VIS-NIR, VIS 0°, NIR I, or NIR II coatings.

# Technical Information



UV FS Transmission Curve

FUSED SILICA	
<h3>Uncoated Fused Silica Typical Transmission</h3> <p>The graph shows a transmission curve that is mostly flat at approximately 93-94% across the 200-2200 nm range, with a small dip at 1400 nm.</p>	<p>Typical transmission of a 3mm thick, uncoated fused silica window across the UV - NIR spectra.</p> <p><a href="#">Click Here to Download Data</a></p>
<h3>Fused Silica with MgF<sub>2</sub> Coating Typical Transmission</h3> <p>The graph shows a transmission curve that is mostly flat at approximately 95% across the 200-2200 nm range, with a small dip at 1400 nm. A blue shaded region highlights the 400-700 nm range.</p>	<p>Typical transmission of a 3mm thick fused silica window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{avg} \leq 1.75\% @ 400 - 700\text{nm (N-BK7)}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>
<h3>Fused Silica with UV-AR Coating Typical Transmission</h3> <p>The graph shows a transmission curve that rises sharply from 250 nm to ~98% at 300 nm, remains high until ~425 nm, then gradually decreases to ~75% at 2200 nm. A blue shaded region highlights the 250-425 nm range.</p>	<p>Typical transmission of a 3mm thick fused silica window with UV-AR (250-425nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{abs} \leq 1.0\% @ 250 - 425\text{nm}</math>  <math>R_{avg} \leq 0.75\% @ 250 - 425\text{nm}</math>  <math>R_{avg} \leq 0.5\% @ 370 - 420\text{nm}</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p><a href="#">Click Here to Download Data</a></p>



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



Typical transmission of a 3mm thick 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:

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

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

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

[Click Here to Download Data](#)

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



Typical transmission of a 3mm thick 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:

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

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

[Click Here to Download Data](#)

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



Typical transmission of a 3mm thick 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:

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

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

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

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

[Click Here to Download Data](#)

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



Typical transmission of a 3mm thick 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:

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

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

[Click Here to Download Data](#)

Wavelength (nm)	
<p><b>Fused Silica with YAG-BBAR Coating</b> <b>Typical Transmission</b></p>	<p>Typical transmission of a 3mm thick fused silica window with YAG-BBAR (500-1100nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p style="text-align: center;"> <math>R_{abs} \leq 0.25\% @ 532nm</math>  <math>R_{abs} \leq 0.25\% @ 1064nm</math>  <math>R_{avg} \leq 1.0\% @ 500 - 1100nm</math> </p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p style="text-align: center;"><a href="#">Click Here to Download Data</a></p>
<p><b>Fused Silica with NIR I Coating</b> <b>Typical Transmission</b></p>	<p>Typical transmission of a 3mm thick fused silica window with NIR I (600 - 1050nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p style="text-align: center;"><math>R_{avg} \leq 0.5\% @ 600 - 1050nm</math></p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p style="text-align: center;"><a href="#">Click Here to Download Data</a></p>
<p><b>Fused Silica with NIR II Coating</b> <b>Typical Transmission</b></p>	<p>Typical transmission of a 3mm thick fused silica window with NIR II (750 - 1550nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p style="text-align: center;"> <math>R_{abs} \leq 1.5\% @ 750 - 800nm</math>  <math>R_{abs} \leq 1.0\% @ 800 - 1550nm</math>  <math>R_{avg} \leq 0.7\% @ 750 - 1550nm</math> </p> <p>Data outside this range is not guaranteed and is for reference only.</p> <p style="text-align: center;"><a href="#">Click Here to Download Data</a></p>

**Compatible Mounts**