

TECHSPEC<sup>®</sup> 12mm Dia. x 15mm FL, NIR I Coated, UV Double-Convex Lens



UV Fused Silica Double-Convex (DCX) Lenses



Stock **#22-164** 3 In Stock

☐ Other Coating Options

-

1

+

S\$211<sup>40</sup>

ADD TO CART

| Volume Pricing |                               |
|----------------|-------------------------------|
| Qty 1-5        | S\$211.40 each                |
| Qty 6-25       | S\$169.40 each                |
| Qty 26-49      | S\$159.60 each                |
| Need More?     | <a href="#">Request Quote</a> |

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General

Type:

Double-Convex Lens

Physical & Mechanical Properties

Diameter (mm):

|                      |                           |
|----------------------|---------------------------|
| 12.00 +0.0/-0.025    |                           |
| <1                   | Centering (arcmin):       |
|                      | Bevel:                    |
| Protective as needed |                           |
| 4.50 ±0.05           | Center Thickness CT (mm): |
|                      | Edge Thickness ET (mm):   |
| 1.57                 |                           |
| 11.00                | Clear Aperture CA (mm):   |

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| Optical Properties                    |                                                       |
| 13.37                                 | Back Focal Length BFL (mm):                           |
| 15.00                                 | Effective Focal Length EFL (mm):                      |
|                                       | Coating:                                              |
| NIR I (600-1050nm)                    |                                                       |
| R <sub>avg</sub> ≤0.5% @ 600 - 1050nm | Coating Specification:                                |
|                                       | Substrate: <input type="checkbox"/>                   |
| Fused Silica (Corning 7980)           |                                                       |
| 40-20                                 | Surface Quality:                                      |
|                                       | Power (P-V) @ 632.8nm:                                |
| 1.5λ                                  |                                                       |
| λ/4                                   | Irregularity (P-V) @ 632.8nm:                         |
|                                       | Radius R <sub>1</sub> =R <sub>2</sub> (mm):           |
| 13.01                                 |                                                       |
|                                       | f/#:                                                  |
| 1.25                                  |                                                       |
| 587.6                                 | Focal Length Specification Wavelength (nm):           |
| ±1                                    | Focal Length Tolerance (%):                           |
| 0.40                                  | Numerical Aperture NA:                                |
| 600 - 1050                            | Wavelength Range (nm):                                |
|                                       | Damage Threshold, Reference: <input type="checkbox"/> |
| 7 J/cm <sup>2</sup> @ 1064nm, 10ns    |                                                       |

|                       |                             |
|-----------------------|-----------------------------|
| Regulatory Compliance |                             |
| Compliant             | RoHS 2015:                  |
| View                  | Certificate of Conformance: |
| Compliant             | Reach 235:                  |

## Product Details

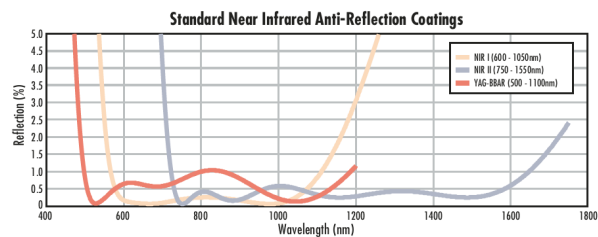
- Ideal for Imaging Applications
- Minimize Aberrations Including Spherical and Coma
- Precision Fused Silica Substrate

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

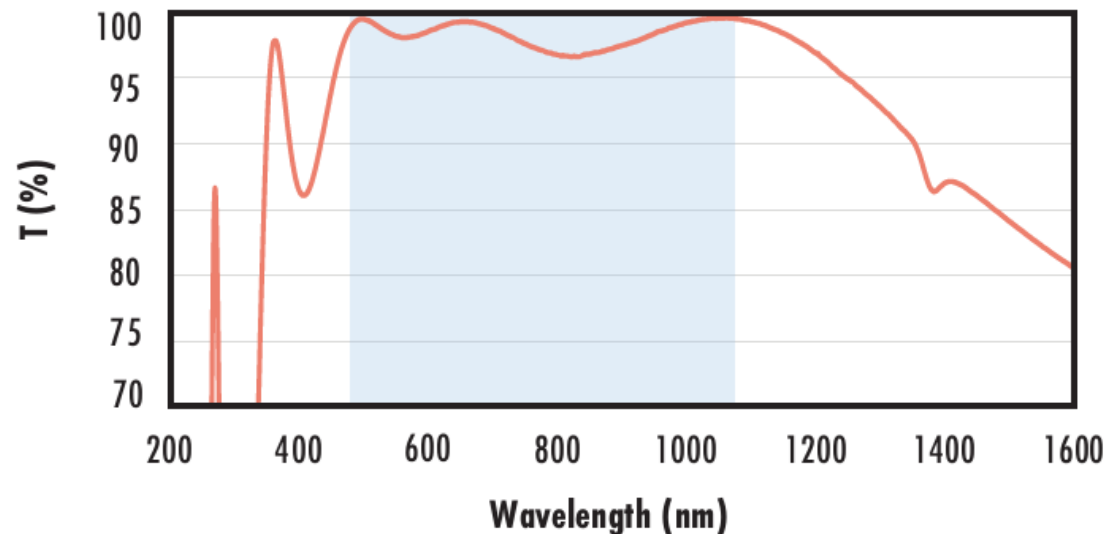
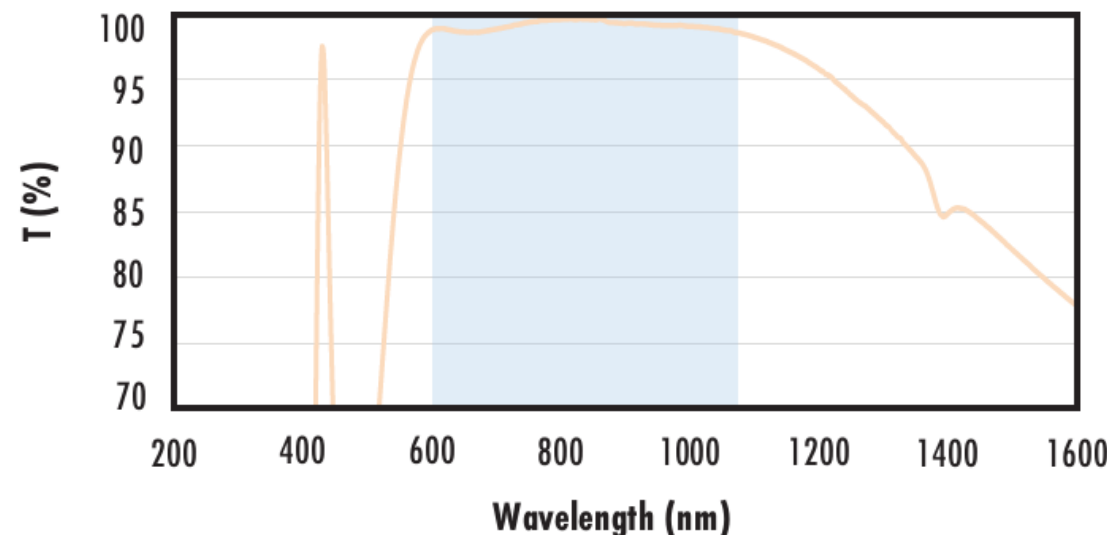
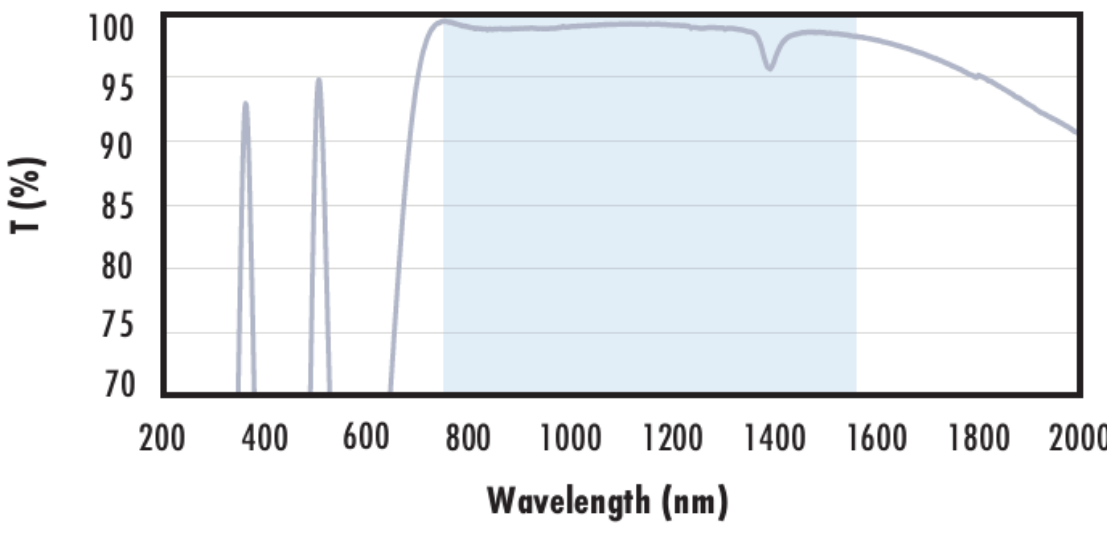


UV FS Transmission Curve



| FUSED SILICA                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>Uncoated Fused Silica<br/>Typical Transmission</div><div><div><div>T (%)</div><div><div><div></div></div></div><div><div>200</div><div>400</div><div>600</div><div>800</div><div>1000</div><div>1200</div><div>1400</div><div>1600</div><div>1800</div><div>2000</div><div>2200</div></div><div><div>Wavelength (nm)</div></div></div></div></div>                     | <div><div>Typical transmission of a 3mm thick, uncoated fused silica window across the UV - NIR spectra.</div><div><a href="#">Click Here to Download Data</a></div></div>                                                                                                                                                                                                                                                                                  |
| <div><div>Fused Silica with MgF<sub>2</sub> Coating<br/>Typical Transmission</div><div><div><div>T (%)</div><div><div><div></div></div></div><div><div>200</div><div>400</div><div>600</div><div>800</div><div>1000</div><div>1200</div><div>1400</div><div>1600</div><div>1800</div><div>2000</div><div>2200</div></div><div><div>Wavelength (nm)</div></div></div></div></div> | <div><div>Typical transmission of a 3mm thick fused silica window with MgF<sub>2</sub> (400-700nm) coating at 0° AOI.</div><div>The blue shaded region indicates the coating design wavelength range, with the following specification:<div><div>R<sub>avg</sub> ≤ 1.75% @ 400 - 700nm (N-BK7)</div></div></div><div>Data outside this range is not guaranteed and is for reference only.</div><div><a href="#">Click Here to Download Data</a></div></div> |
| <div><div>Fused Silica with UV-AR Coating<br/>Typical Transmission</div></div>                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | <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><br/><math>R_{avg} \leq 0.75\% @ 250 - 425\text{nm}</math><br/><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> |
| <p><b>Fused Silica with UV-VIS Coating</b><br/><b>Typical Transmission</b></p>    | <p>Typical transmission of a 3mm thick fused silica window with UV-VIS (250-700nm) coating at 0° AOI.</p> <p>The blue shaded region indicates the coating design wavelength range, with the following specification:</p> <p><math>R_{abs} \leq 1.0\% @ 350 - 450\text{nm}</math><br/><math>R_{avg} \leq 1.5\% @ 250 - 700\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>                                                          |
| <p><b>Fused Silica with VIS-EXT Coating</b><br/><b>Typical Transmission</b></p>  | <p>Typical transmission of a 3mm thick fused silica window with VIS-EXT (350-700nm) 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 0.5\% @ 350 - 700\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>                                                                                                                  |
| <p><b>Fused Silica with VIS-NIR Coating</b><br/><b>Typical Transmission</b></p>  | <p>Typical transmission of a 3mm thick fused silica window with VIS-NIR (400-1000nm) 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 0.25\% @ 880\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 400 - 870\text{nm}</math><br/><math>R_{avg} \leq 1.25\% @ 890 - 1000\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> |
| <p><b>Fused Silica with VIS 0° Coating</b><br/><b>Typical Transmission</b></p>   | <p>Typical transmission of a 3mm thick fused silica window with VIS 0° (425-675nm) 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 0.4\% @ 425 - 675\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>                                                                                                                                                                                                                                  |
| <p><b>Fused Silica with YAG-BBAR Coating</b><br/><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><math>R_{abs} \leq 0.25\% @ 532\text{nm}</math><br/><math>R_{abs} \leq 0.25\% @ 1064\text{nm}</math><br/><math>R_{avg} \leq 1.0\% @ 500 - 1100\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>           |
| <p><b>Fused Silica with NIR I Coating</b><br/><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><math>R_{avg} \leq 0.5\% @ 600 - 1050\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>                                                                                                                     |
| <p><b>Fused Silica with NIR II Coating</b><br/><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><math>R_{abs} \leq 1.5\% @ 750 - 800\text{nm}</math><br/><math>R_{abs} \leq 1.0\% @ 800 - 1550\text{nm}</math><br/><math>R_{avg} \leq 0.7\% @ 750 - 1550\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> |

## 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](#).

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