

TECHSPEC® 50mm Dia., 4mm Thick, VIS-NIR Coated, λ /4 Fused Silica Window



TECHSPEC® λ /4 UV Fused Silica Windows

Stock **#14-992** **3 In Stock**

-

1

+

£192⁰⁰

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Volume Pricing	
Qty 1-5	£192.80 each
Qty 6-25	£153.60 each
Qty 26-49	£144.00 each
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i Prices shown are exclusive of VAT/local taxes

Product Downloads

General

Type:

Protective Window

Physical & Mechanical Properties

Clear Aperture CA (mm):

45.00

Diameter (mm):

50.00 +0.00/-0.10	
4.00 ±0.10	Thickness (mm):
<1	Parallelism (arcmin):
+0.00/-0.10	Dimensional Tolerance (mm):
Protective as needed	Bevel:
90	Clear Aperture (%):
Fine Ground	Edges:
0.16	Poisson's Ratio:
73	Young's Modulus (GPa):
522.00	Knoop Hardness (kg/mm²):

Optical Properties	
VIS-NIR (400-1000nm)	Coating:
Fused Silica (Corning 7980)	Substrate: ☐
1.458	Index of Refraction (n _d):
40-20	Surface Quality:
λ/4	Transmitted Wavefront, P-V:
67.8	Abbe Number (v _d):
R _{abs} ≤0.25% @ 880nm R _{avg} ≤1.25% @ 400 - 870nm R _{avg} ≤1.25% @ 890 - 1000nm	Coating Specification:
400 - 1000	Wavelength Range (nm):
5 J/cm² @ 532nm, 10ns	Damage Threshold, Reference: ☐

Material Properties	
2.20	Density (g/cm³):
0.52 (+5 to +35°C) 0.57 (0 to +200°C) 0.48 (-100 to +200°C)	Coefficient of Thermal Expansion CTE (10 ⁻⁶ /°C):
7980 0G	Fused Silica Grade:

Regulatory Compliance	
Compliant	RoHS 2015:
View	Certificate of Conformance:
Compliant	REACH 241:

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

- Available Uncoated or BBAR Coated for UV, Visible, and NIR

- TECHSPEC® N4 UV Fused Silica Windows are manufactured with 40-20 surface quality and N4 transmitted wavefront error specifications, making them ideal for imaging applications. Featuring UV fused silica substrates, these windows provide high transmission from the ultraviolet (UV) through the visible and near-infrared (NIR). Broadband anti-reflection (BBAR) coating options are available to minimize reflection losses and increase transmission. TECHSPEC N4 UV Fused Silica Windows are used in optical imaging applications, in low to medium powered laser applications, and as protective windows, especially in applications requiring transmission of UV light.

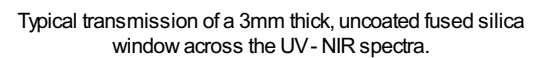
The figure consists of three vertically stacked line graphs, each showing the reflectance (R) in percent on the y-axis against the wavelength (λ) in nanometers on the x-axis.

Top Graph: Anti-Reflection Coating Curves
 The y-axis ranges from 0 to 4, and the x-axis ranges from 200 to 1300 nm. Four curves are plotted:
 - **UV-VIS** (purple line): Reflectance starts at ~1.2% at 200 nm, dips to ~0.4% at 300 nm, rises to ~1.1% at 400 nm, dips to ~0.4% at 500 nm, rises to ~2.2% at 600 nm, dips to ~0.4% at 700 nm, and then rises sharply to ~3.8% at 1100 nm.
 - **VIS-NIR** (dark purple line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **VIS 0°** (orange line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **NIR I** (yellow line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.

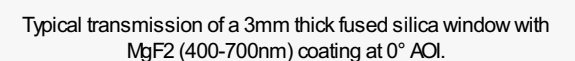
Middle Graph: Standard Visible Anti-Reflection Coatings
 The y-axis ranges from 0 to 5.0, and the x-axis ranges from 200 to 1100 nm. Five curves are plotted:
 - **λ = 444 MgF₂ at 550nm** (pink line): Reflectance starts at ~1.2% at 200 nm, dips to ~0.4% at 300 nm, rises to ~1.1% at 400 nm, dips to ~0.4% at 500 nm, rises to ~2.2% at 600 nm, dips to ~0.4% at 700 nm, and then rises sharply to ~3.8% at 1100 nm.
 - **VIS 0° (425 - 475nm)** (dark purple line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **UV-AR (250 - 425nm)** (green line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **UV-VIS (250 - 700nm)** (blue line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **VIS-NIR (400 - 1000nm)** (purple line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.

Bottom Graph: Standard Near Infrared Anti-Reflection Coatings
 The y-axis ranges from 0 to 5.0, and the x-axis ranges from 400 to 1800 nm. Three curves are plotted:
 - **NIR I (1000 - 1050nm)** (orange line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **NIR II (750 - 1550nm)** (blue line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.
 - **YAG-BRAG (500 - 1100nm)** (red line): Reflectance starts at ~0.4% at 400 nm, rises to ~0.6% at 500 nm, dips to ~0.4% at 600 nm, rises to ~0.9% at 700 nm, dips to ~0.4% at 800 nm, and then rises sharply to ~1.6% at 1200 nm.

Uncoated Fused Silica Typical Transmission

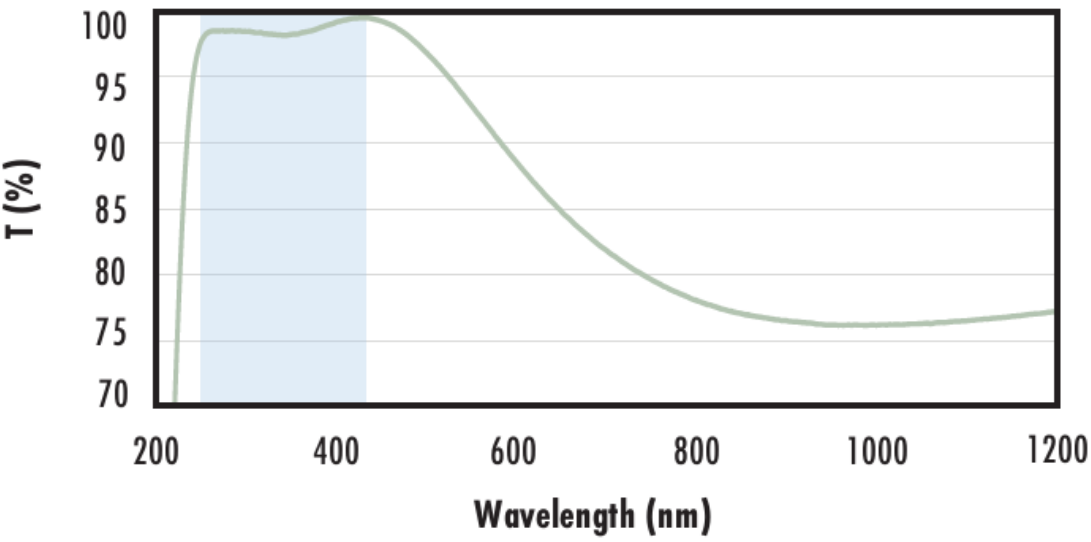
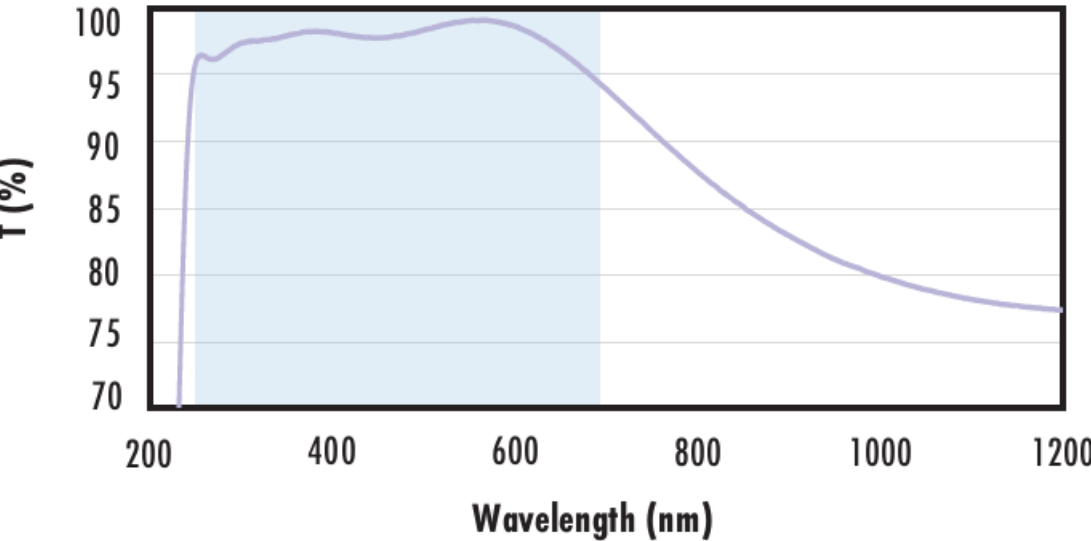
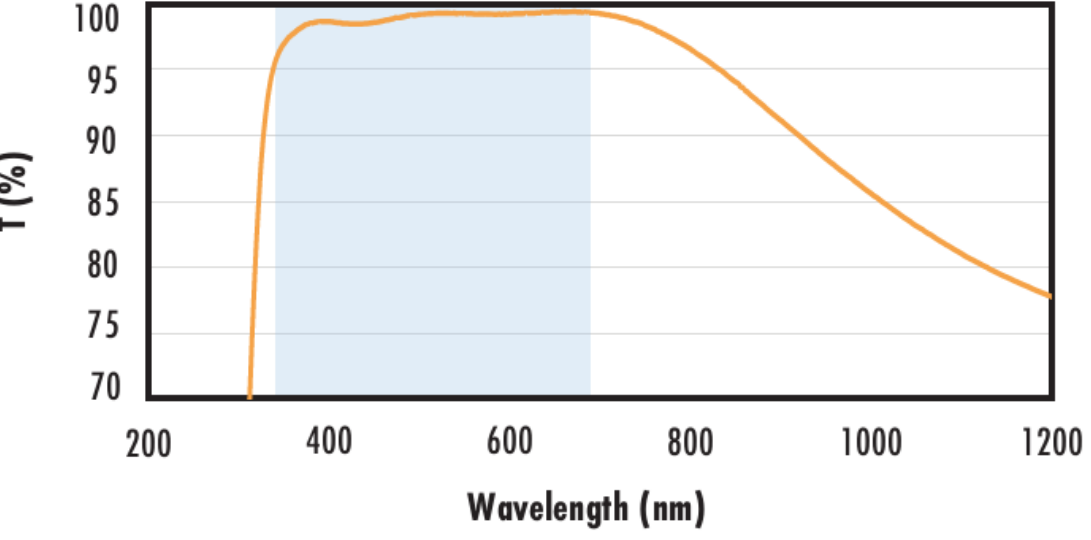
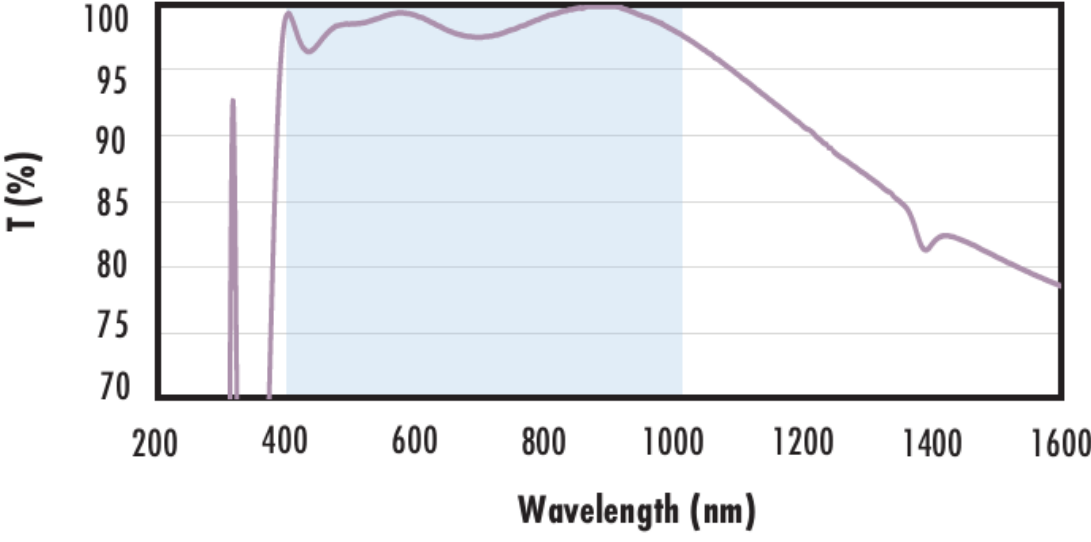


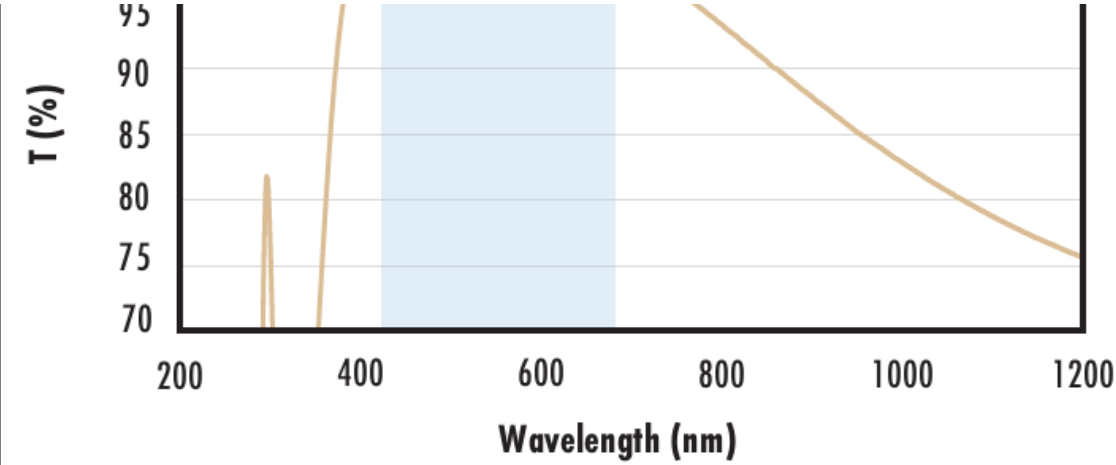
Fused Silica with MgF_2 Coating


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

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Fused Silica with UV-AR Coating

Typical Transmission 	Typical transmission of a 3mm thick 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: $R_{abs} \leq 1.0\% \text{ @ } 250 - 425\text{nm}$ $R_{avg} \leq 0.75\% \text{ @ } 250 - 425\text{nm}$ $R_{avg} \leq 0.5\% \text{ @ } 370 - 420\text{nm}$ Data outside this range is not guaranteed and is for reference only. Click Here to Download Data
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



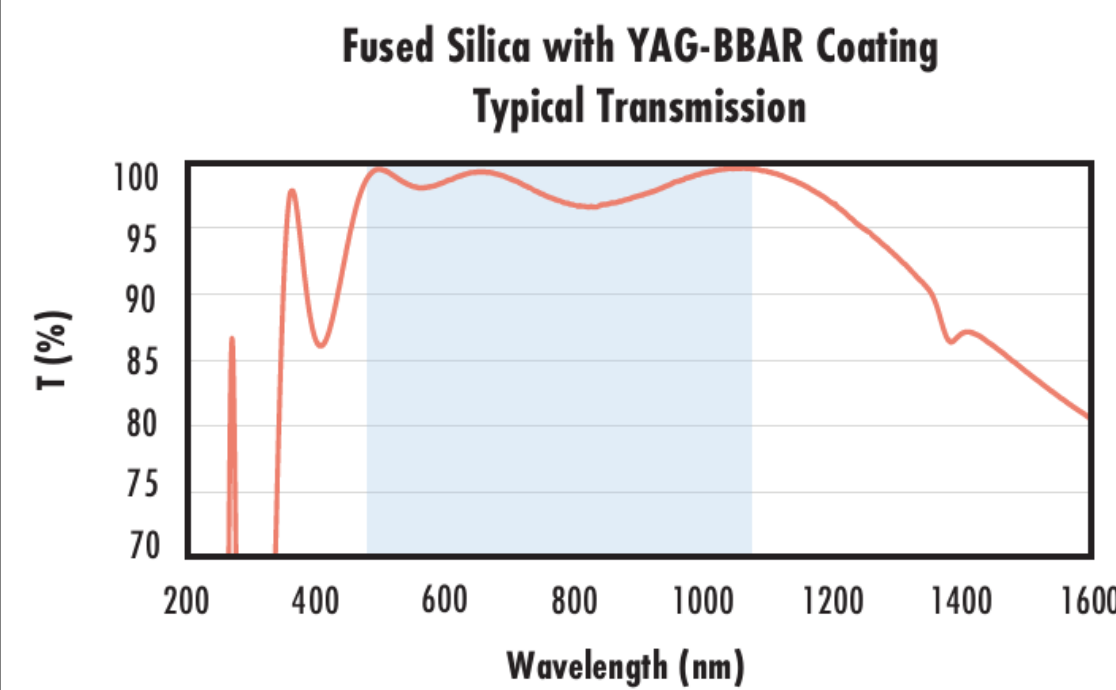
0° (425-675nm) coating at 0° AOI.

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

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

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

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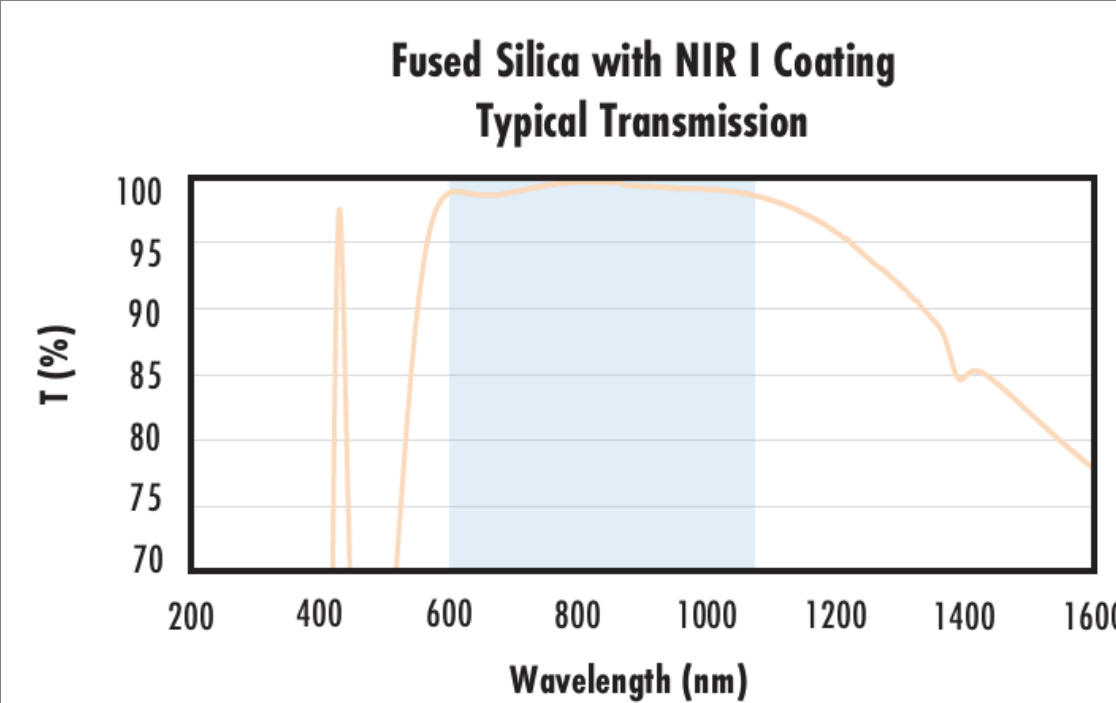
Typical transmission of a 3mm thick fused silica window with YAG-BBAR (500-1100nm) coating at 0° AOI.

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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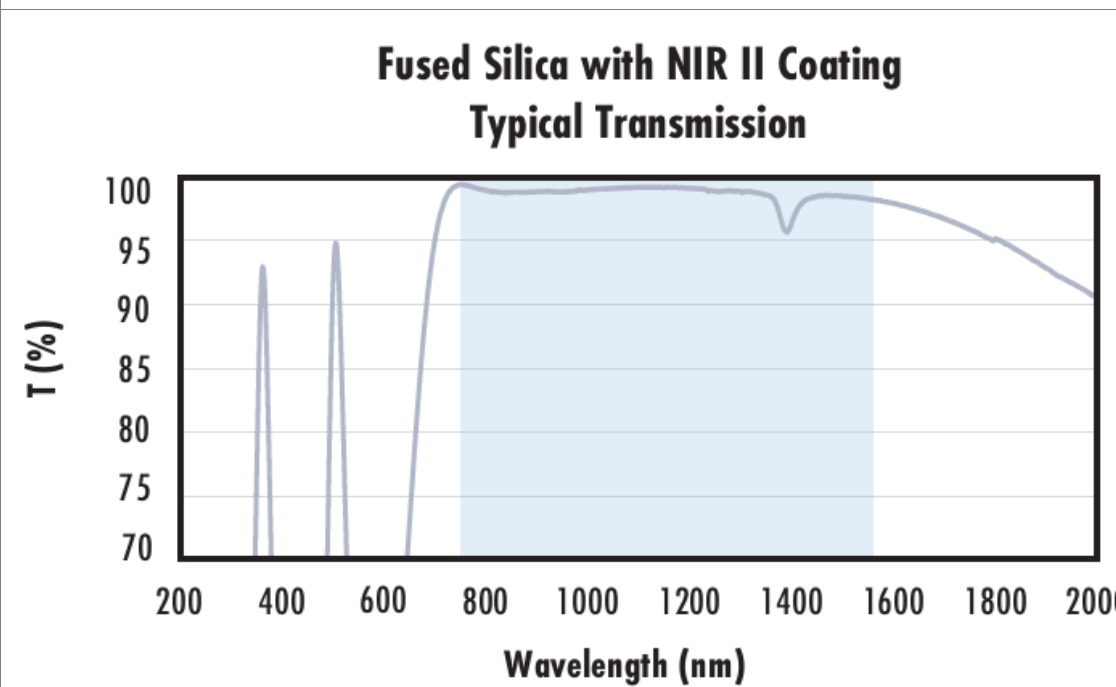
Typical transmission of a 3mm thick fused silica window with NIR I (600 - 1050nm) coating at 0° AOI.

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.

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Typical transmission of a 3mm thick 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

Compatible Mounts

