

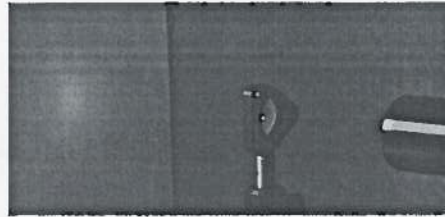
56 Sparta Avenue • Newton, New Jersey 07860
(973) 300-3000 Sales • (973) 300-3600 Fax
www.thorlabs.com



UV FUSED SILICA GROUND GLASS DIFFUSERS

- ▶ Superior Transmission in UV Range
- ▶ Offered in 120, 220, 600, and 1500 Grit Polishes
- ▶ Polished for Greater Uniformity than Sand Blasting

Application Idea
DGUV10-600 Mounted in KB1P Quick-Release Mount



DGUV10-120



DGUV10-220

OVERVIEW

Features

- Ø1" Round Diffusers
- UV Fused Silica Substrate
- Greater than 90% Transmission Above 225 nm
- Gaussian Spatial Profile
- Clear Aperture: >90% Diameter

Thorlabs' UV Fused Silica Ground Glass Diffusers produce a Gaussian intensity profile from an input light source. Unlike our diffusers based on N-BK7 substrates, UV fused silica is highly

transmissive at wavelengths below 350 nm. In addition, UV fused silica exhibits virtually no laser-induced fluorescence (as measured at 193 nm), making it an

ideal choice for applications in a range spanning the ultraviolet to the near infrared. See the *Comparison* tab for a side-by-side comparison of the wavelength-dependent transmission of N-BK7 and UV fused silica.

These diffusers feature 120, 220, 600, or 1500 grit polishes. Our polishing process results in a surface with significantly greater uniformity than sandblasted diffusers. The various grits provide a range from fine to coarse scattering. A finer grind (e.g., 1500) allows higher transmission, while a coarser grind (e.g., 120) creates a wider diffusion pattern at the expense of transmission. Please click on the image to the right to compare the width of the intensity profiles from each of our ground glass diffusers.

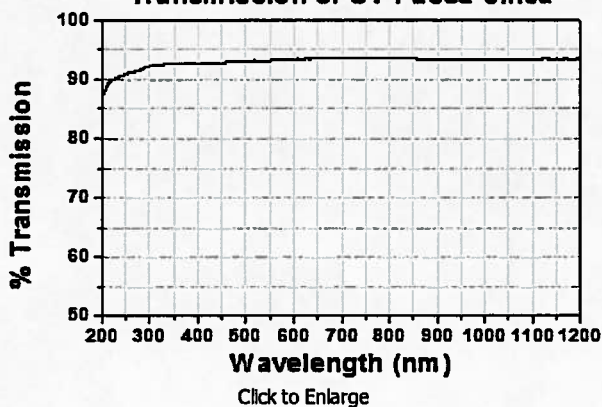
When mounting the diffusers, the grit polished side should face away from the source. Thorlabs offers fixed lens mounts to hold these diffusers.

If transmission in the ultraviolet range is not necessary for your application, please consider our line of N-BK7 Ground Glass Diffusers.

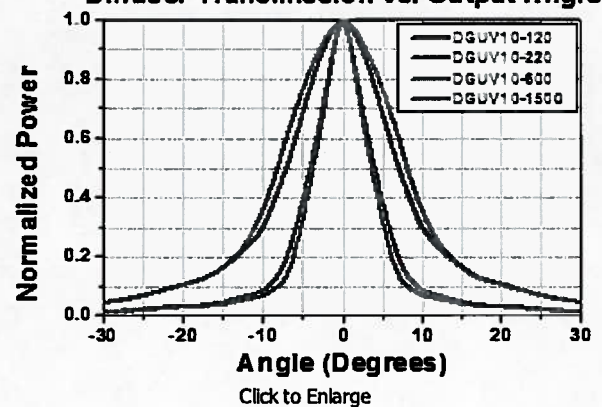
Diffuser Selection Guide

Diffuser Selection Guide			
Ground Glass Diffusers			
Standard Diffusers	N-BK7 Substrate	Unmounted, Uncoated	350 nm to 2.0 µm
		Unmounted, AR Coated	350 nm - 700 nm 650 nm - 1050 nm
		Mounted, Uncoated	350 nm - 2.0 µm
	UVFS Substrate	Unmounted, Uncoated	185 nm - 2.0 µm
Diffuse Reflectors	N-BK7 Substrate	Unmounted, UV-Enhanced Aluminum Coated	250 nm - 450 nm
		Unmounted, Protected Silver Coated	450 nm - 20 µm
		Unmounted, Protected Gold Coated	800 nm - 20 µm
Alignment Disks			
Engineered Diffusers			
Diffuser Kits			

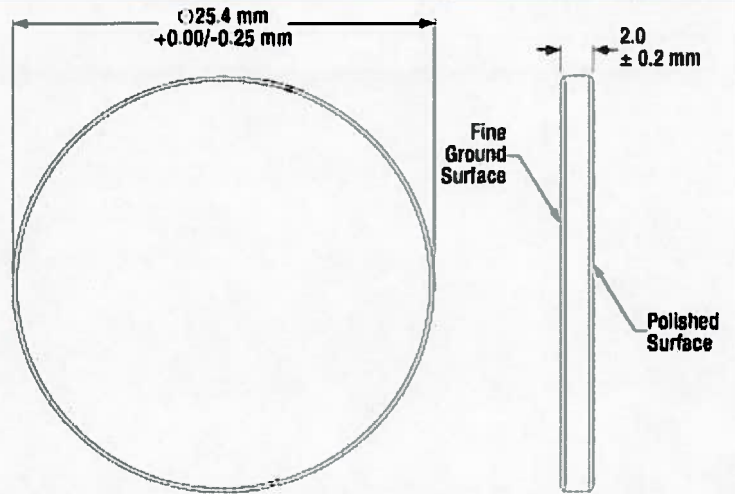
Transmission of UV Fused Silica



Diffuser Transmission vs. Output Angle



SPECS



Common Specifications

Diameter	1.00"
Diameter Tolerance	+0.00/-0.25 mm
Thickness	2.0 mm
Thickness Tolerance	±0.2 mm
Clear Aperture	>90% Diameter
Surface Flatness of Smooth Side (@ 633 nm)	<math><\lambda</math>
Surface Quality of Smooth Side	80-50 Scratch-Dig
Parallelism	<math><3 \text{ arcmin}</math>

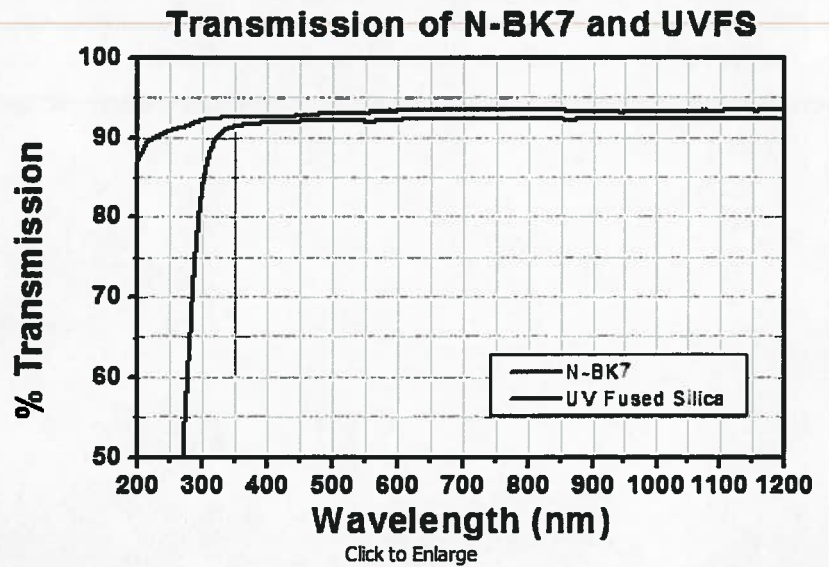
Item #	Grit
DGUV10-120	120
DGUV10-220	220
DGUV10-600	600
DGUV10-1500	1500

COMPARISON

Comparison of N-BK7 and UV Fused Silica

N-BK7 is a popular substrate because of its low cost and excellent transmission in the visible and near-infrared portions of the spectrum. However, its transmission drops off sharply at wavelengths shorter than 350 nm. For applications in the ultraviolet portion of the spectrum, UV fused silica is a superior alternative. UV fused silica offers high transmission deep into the ultraviolet, good homogeneity, and a lower coefficient of thermal expansion than N-BK7. In addition, UV fused silica exhibits virtually no laser-induced fluorescence (as measured at 193 nm), making it an ideal choice for applications from the UV to the near IR. See the graph to the right for a comparison between N-BK7 and UV fused silica.

Thorlabs also offers N-BK7 Ground Glass Diffusers for applications where UV transmission is not a requirement.



Part Number	Description	Price	Availability
DGUV10-120	Customer Inspired! Ø1" UV Fused Silica Ground Glass Diffuser, 120 Grit	\$26.25	Today
DGUV10-220	Customer Inspired! Ø1" UV Fused Silica Ground Glass Diffuser, 220 Grit	\$26.25	Today
DGUV10-600	Customer Inspired! Ø1" UV Fused Silica Ground Glass Diffuser, 600 Grit	\$26.25	Today
DGUV10-1500	Customer Inspired! Ø1" UV Fused Silica Ground Glass Diffuser, 1500 Grit	\$26.25	Today

Visit the [UV Fused Silica Ground Glass Diffusers](http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=6337) page for pricing and availability information:
http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=6337