

Products Home / Optical Elements / Optical Filters / Neutral Density Filters / Neutral Density Filters / Unmounted UV Fused Silica Reflective ND Filters



## Unmounted UV Fused Silica Reflective ND Filters

- ▶ UV to IR Spectral Range (200 - 1200 nm)
- ▶ Metallic Nickel Coating on UV Fused Silica Substrate
- ▶ Optical Densities from 0.1 to 4.0 Available



NDUV505B  
in a LMR05  
Lens Mount  
(Sold Separately)



### Related Items

Absorptive ND Filters



Absorptive ND Filters for IR



Neutral Density Filter Kits



Filter Mounts



Overview Specs Damage Thresholds LIDT Calculations Feedback

### Features

- Optimized for Light Attenuation in the UV
- Available in Ø1/2", Ø25 mm, and 50 mm x 50 mm Sizes
- Optical Densities Available from 0.1 - 4.0
- Spectral Range: 200 - 1200 nm
- Edge Blackening Available Upon Request



Thorlabs offers reflective neutral density (ND) filters made from UV fused silica substrates with nickel coatings deposited on one side, which provides a flat spectral response. These unmounted, metallic filters are usable in the 200 - 1200 nm spectral range and are available in Ø1/2", Ø25 mm, and 50 mm x 50 mm square versions. Each filter sold here includes a small, flat ground edge to visually distinguish it from our [unmounted N-BK7 reflective ND filters](#). For other mounting options and wavelength ranges, please see the Selection Guide table on the bottom right.

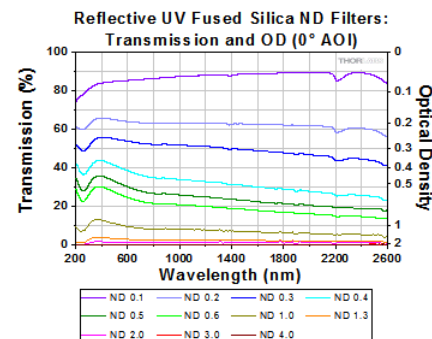
The UV fused silica substrate used in these filters exhibits high transmission and virtually no laser-induced fluorescence, as measured at 193 nm, making it an ideal choice for applications from the UV to the near IR. While the spectral range's lower limit of 200 nm is limited by the absorption of the light by the substrate, UV fused silica provides good transmission up to 2.1 µm, and thus the upper limit of 1200 nm is dependent on the increased opacity of the nickel coating. The optical density (OD) for each filter is specified at the design wavelength of 300 nm to facilitate their use in the UV: some variation in the OD will occur over the usable range. For plots showing the typical performance of the filters from 200 to 2600 nm, click on [1](#) in the row corresponding to the desired filter in the tables below.

Unprotected metal coatings like this should only be cleaned by blown air, never touched, as contact may cause scratching to the unprotected surface. Although these are reflective ND filters, the nickel coating does absorb some of the incident light, which limits the use of these filters to low-power applications. Nickel is resistant to aging under normal conditions; however, it will oxidize at elevated temperatures. To prevent oxidation, Thorlabs recommends using these ND filters at temperatures below 100°C. To achieve the best performance light should be incident on the side with the nickel coating.

The optical density, OD, is defined in terms of transmission  $T$  by the following equation:

$$OD = \log_{10} \left( \frac{1}{T} \right), \text{ or } T = 10^{-OD}$$

Choosing an ND filter with a higher optical density will translate to lower transmission and greater reflection of the incident light. For higher transmission and less reflection, a lower optical density would be appropriate.



Click to Enlarge  
Transmission and Optical Density of Reflective UVFS ND Filters

### Selection Guide for Neutral Density Filters

Absorptive		Reflective	
Uncoated (400 - 650 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>	N-BK7 (350 - 1100 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>
Uncoated (800 - 2600 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>	UV Fused Silica (200 - 1200 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>
AR Coated (350 - 700 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>	ZnSe (2 - 16 µm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>
AR Coated (650 - 1050 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>	<a href="#">Wedge Reflective</a> <a href="#">Variable Reflective</a>	
AR Coated (1050 - 1620 nm)	<a href="#">Mounted</a> <a href="#">Unmounted</a>	<a href="#">Neutral Density Filter Kits</a>	

## Ø1/2" UV Fused Silica Metallic ND Filters, Unmounted



Zoom

















Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV501B	0.1 (79%)	<a href="#">1</a>
NDUV502B	0.2 (63%)	<a href="#">1</a>
NDUV503B	0.3 (50%)	<a href="#">1</a>
NDUV504B	0.4 (40%)	<a href="#">1</a>
NDUV505B	0.5 (32%)	<a href="#">1</a>
NDUV506B	0.6 (25%)	<a href="#">1</a>

Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV510B	1.0 (10%)	<a href="#">1</a>
NDUV513B	1.3 (5%)	<a href="#">1</a>
NDUV520B	2.0 (1%)	<a href="#">1</a>
NDUV530B	3.0 (0.1%)	<a href="#">1</a>
NDUV540B	4.0 (0.01%)	<a href="#">1</a>

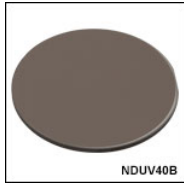
a. The optical density for each filter is specified at the design wavelength of 300 nm. Some variation will occur over the usable range. Click on [1](#) for a plot and downloadable data.

Based on your currency / country selection, your order will ship from Newton, New Jersey







+1	Qty	Docs	Part Number - Universal	Price	Available
<a href="#">1</a>	<input type="text"/>	<a href="#">1</a>	<a href="#">NDUV501B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.1	\$36.77	<a href="#">Lead Time</a>
<a href="#">1</a>	<input type="text"/>	<a href="#">1</a>	<a href="#">NDUV502B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.2	\$36.77	<a href="#">5-8 Days</a>
<a href="#">1</a>	<input type="text"/>	<a href="#">1</a>	<a href="#">NDUV503B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.3	\$36.77	<a href="#">5-8 Days</a>






	<input type="text"/>		<a href="#">NDUV504B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.4	\$36.77	Today
	<input type="text"/>		<a href="#">NDUV505B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.5	\$36.77	Today
	<input type="text"/>		<a href="#">NDUV506B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 0.6	\$36.77	<a href="#">5-8 Days</a>
	<input type="text"/>		<a href="#">NDUV510B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 1.0	\$36.77	Today
	<input type="text"/>		<a href="#">NDUV513B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 1.3	\$36.77	Today
	<input type="text"/>		<a href="#">NDUV520B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 2.0	\$46.75	Today
	<input type="text"/>		<a href="#">NDUV530B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 3.0	\$46.75	Today
	<input type="text"/>		<a href="#">NDUV540B</a> Unmounted Ø1/2" UVFS Reflective ND Filter, OD: 4.0	\$46.75	Today
<input type="button" value="Add To Cart"/>					


### Ø25 mm UV Fused Silica Metallic ND Filters, Unmounted

























 [Zoom](#)

Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV01B	0.1 (79%)	
NDUV02B	0.2 (63%)	
NDUV03B	0.3 (50%)	
NDUV04B	0.4 (40%)	
NDUV05B	0.5 (32%)	
NDUV06B	0.6 (25%)	

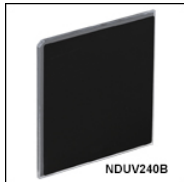
Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV10B	1.0 (10%)	
NDUV13B	1.3 (5%)	
NDUV20B	2.0 (1%)	
NDUV30B	3.0 (0.1%)	
NDUV40B	4.0 (0.01%)	

a. The optical density for each filter is specified at the design wavelength of 300 nm. Some variation will occur over the usable range. Click on  for a plot and downloadable data.







Based on your currency / country selection, your order will ship from Newton, New Jersey






+1	Qty	Docs	Part Number - Universal	Price	Available
	<input type="text"/>		<a href="#">NDUV01B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.1	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV02B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.2	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV03B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.3	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV04B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.4	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV05B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.5	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV06B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 0.6	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV10B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 1.0	\$50.70	Today
	<input type="text"/>		<a href="#">NDUV13B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 1.3	\$56.47	Today
	<input type="text"/>		<a href="#">NDUV20B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 2.0	\$61.99	Today
	<input type="text"/>		<a href="#">NDUV30B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 3.0	\$61.99	Today
	<input type="text"/>		<a href="#">NDUV40B</a> Unmounted Ø25 mm UVFS Reflective ND Filter, OD: 4.0	\$61.99	<a href="#">5-8 Days</a>
<input type="button" value="Add To Cart"/>					


### 50 mm Square UV Fused Silica Metallic ND Filters, Unmounted

























 [Zoom](#)

Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV201B	0.1 (79%)	
NDUV202B	0.2 (63%)	
NDUV203B	0.3 (50%)	
NDUV204B	0.4 (40%)	
NDUV205B	0.5 (32%)	
NDUV206B	0.6 (25%)	

Item #	Optical Density <sup>a</sup> (Transmission)	Transmission Data
NDUV210B	1.0 (10%)	
NDUV213B	1.3 (5%)	
NDUV220B	2.0 (1%)	
NDUV230B	3.0 (0.1%)	
NDUV240B	4.0 (0.01%)	

a. The optical density for each filter is specified at the design wavelength of 300 nm. Some variation will occur over the usable range. Click on  for a plot and downloadable data.

Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal	Price	Available
	<input type="text"/>		<a href="#">NDUV201B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.1	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV202B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.2	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV203B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.3	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV204B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.4	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV205B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.5	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV206B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 0.6	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV210B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 1.0	\$70.98	Today
	<input type="text"/>		<a href="#">NDUV213B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 1.3	\$79.06	Today
	<input type="text"/>		<a href="#">NDUV220B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 2.0	\$86.79	Today
	<input type="text"/>		<a href="#">NDUV230B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 3.0	\$86.79	Today
	<input type="text"/>		<a href="#">NDUV240B</a> <i>Customer Inspired!</i> Unmounted 50 mm x 50 mm UVFS Reflective ND Filter, OD: 4.0	\$86.79	Today
<input type="button" value="Add To Cart"/>					

Sales: 1-973-300-3000  
Technical Support: 1-973-300-3000