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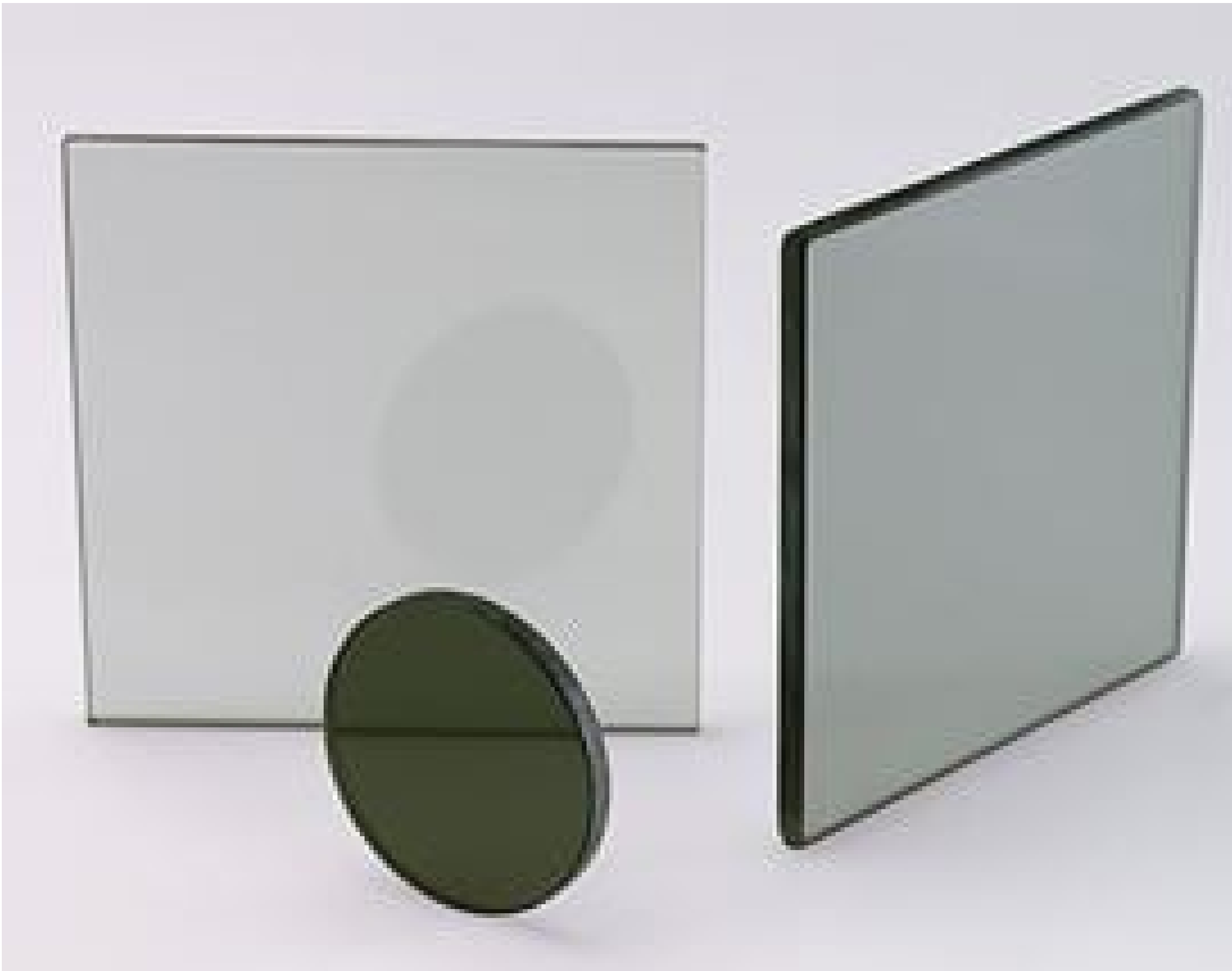
# 0.9 OD 50mm Sq, Absorptive ND Filter

See More by Hoya



Stock **#46-221** **16 In Stock**

- 1 + S$152.60

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| Volume Pricing | |
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| Qty 1-10 | **S$152.60** each |
| Qty 11-49 | **S$135.80** each |
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Product Downloads

## General

**Type:**

Neutral Density Filter

## Physical & Mechanical Properties

**Dimensions (mm):**

50.0 x 50.0

**Length (mm):**

50.00

**Thickness (mm):**

2.50 ±0.5

**Width (mm):**

50.00

**Dimensional Tolerance (mm):**

±0.2

**Parallelism (mm):**

<0.02

## Optical Properties

**Optical Density OD (Average):**

0.9 ±0.1

**Glass/Filter Number:**

Hoya ND13

**Substrate:**

ND Filter Glass

**Coating:**

Uncoated

**Index of Refraction ($n_d$):**

1.51

**Surface Quality:**

80-50

**Transmission (%):**

12.5 (average)

**Blocking Wavelength Range (nm):**

400 - 700

## Material Properties

**Transformation Temperature (°C):**

535

## Regulatory Compliance

**RoHS 2015:**

Compliant

**REACH 201:**

Compliant

**Certificate of Conformance:**

View

## 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

- Attenuates Visible Light Via Absorption, Rather than Reflection
- Multiple Filters Can be Stacked for Increased Blocking
- Optical Densities from 0.1 to 4.0 are Available
- Also Available Pre-mounted in C-Mount Housings

Hoya Absorptive Neutral Density (ND) Filters possess level spectral transmittance characteristics in the visible region and attenuate light by absorption with minimal reflection. Typically, the neutrality and density of absorptive filters are a function of the material and the thickness. Since Hoya neutral density filters are held to a specific optical density, the thickness is only a function of the glass type. Hoya Absorptive Neutral Density (ND) Filters are useful in light control applications for measuring instruments and exposure control in imaging. Spectral variations occur as optical density increases.

Optical Density exhibits an additive relationship; for example, stacking filters with OD values of 0.6 and 0.9 yields a resultant density of 1.5. The optical density is related to the transmission by the following equation: T = 10^-OD x 100 = percent transmission.

**Note:** Due to supply chain issues, our kits may be delivered with an alternative packaging solution in place of a wooden box. For any questions, please contact kits@edmundoptics.com.

### Filter Simulation Software

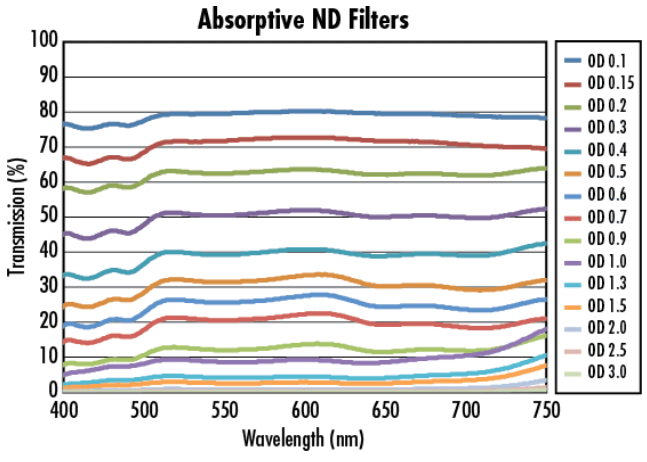
Click here to download HOYA's colored glass filter simulation software which can be used to calculate the internal transmittance and external transmission of each HOYA glass type. The software can simulate the performance of individual filters with user specified thickness.

### Absorptive Neutral Density Filter Kits

#55-222 includes 6 filters in optical density values of 0.15, 0.3, 0.4, 0.6, 0.9 and 2.5.

#63-468, #63-469, #63-470 and #66-155 each include 14 filters in optical density values of 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.9, 1.0, 1.3, 1.5, 2.0 and 2.5. Please note that OD 3.0 is the only one not included in these kits.

# Technical Information




## Compatible Mounts

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