

PhotonEdge

Precision Optical Components

Neutral Density Filter (ND Filter)

Product Datasheet | Precision Optical Filters | Standard Grade

July 2026 | V1.0

1. Product Overview

PhotonEdge Neutral Density (ND) Filters are manufactured using advanced ion-assisted deposition (IAD) coating technology. ND filters uniformly attenuate light intensity over a wide wavelength range without changing the spectral distribution. They are used for laser power control, camera exposure adjustment, and preventing sensor saturation.

All filters feature hard dielectric coatings with excellent environmental stability, high laser damage threshold, and precise spectral control.

PhotonEdge filters use IAD technology, producing dense, stable film layers with a shelf life >15 years. Custom center wavelength and bandwidth available with 3-week lead time.

2. Technical Specifications

Parameter	Specification
Substrate Material	N-BK7 / UV Fused Silica
Coating Type	Hard Dielectric (IAD)
Surface Flatness	lambda/4 @ 632.8nm (Dia 25.4mm)
Surface Quality	40-20 Scratch-Dig
Clear Aperture	> 90% of diameter
Diameter Tolerance	+0.0 / -0.15mm
Thickness	3.5mm (typical)
Operating Temperature	-50 degC to +80 degC
Shelf Life	> 15 years (proper storage)
Damage Threshold	> 0.5 J/cm^2 (10ns, 20Hz)

3. Standard Models

Custom Options: Custom center wavelength, bandwidth, blocking depth (OD4/OD5/OD6), and mounted filter assemblies are available.

Standard models are in stock with 1-2 week delivery. Custom center wavelength, bandwidth, and sizes can be manufactured in 3 weeks.

4. Coating Technology

PhotonEdge filters use ion-assisted deposition (IAD) coating technology, producing dense, humidity-insensitive dielectric films with excellent spectral stability.

Coating Key Features:

- Hard dielectric film - no absorption or outgassing
- Dense film structure - humidity does not affect spectral shift
- High laser damage threshold - suitable for laser applications
- Out-of-band rejection: OD4 standard (OD5/OD6 optional)

Coating Type	Wavelength	Reflectance	Applications
Standard	400-700nm	R < 0.5% per surface	Visible imaging, general optics
Optional	650-1000nm	R < 0.5% per surface	Near-infrared systems
Optional	400-1000nm	R < 1.0% per surface	Multi-wavelength systems
Optional	250-400nm	R < 1.5% per surface	UV imaging systems

5. Ordering Information

Filter Sets: Fluorescence filter sets (excitation + emission + dichroic) are available as matched sets. Contact us for specific configurations.

When ordering or requesting a quote, please provide:

1. Model number or wavelength/bandwidth requirements
2. Substrate material (standard N-BK7)
3. Size and quantity
4. Special requirements (cut-off depth, mounting, etc.)

Minimum Order Quantity: 1 piece for standard models.

Lead Time: 1-2 weeks for stock. 3 weeks for custom.

6. Contact Information

Beijing Hengdingguang Technology Co., Ltd.

Brand: PhotonEdge - Precision Optical Components

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Manufacturing: 15+ years experience | 67+ product types | 500+ global clients

Quality Assurance: 100% inspection | $\lambda/10$ surface flatness | Zero-defect shipping