Beijing Hengdingguang Technology Co., Ltd.

PhotonEdge

Optical Prisms & Filters
Product Catalog

Optical Prisms

- BK7 Right Angle Prisms
- UV Fused Silica Right Angle Prisms
- Penta Prisms
- Corner Cube Prisms
- Dove Prisms
- Equilateral Dispersing Prisms
- Roof Prisms

Optical Filters

- Narrow Band Interference Filters
- Fixed Neutral Density Filters
- Circular Variable ND Filters
- Linear Variable ND Filters
- UV Bandpass Filters
- IR Bandpass Filters
- Bandpass Filters

Email: sales@photonedgeoptics.com
Website: https://photonedgeoptics.com/
Tel: +86-13693009175

Optical Prisms

BK7 Right Angle Prisms

Right angle prisms are commonly used as mirrors. They can deflect light by 90° through total internal reflection, or by 180° as image retro-reflectors. They can also be used for image erection and beam deviation applications.

Material	H-K9L (BK7)
Diameter Tolerance	±0.15mm
Angle Tolerance	±10 arcsec
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Beveling	0.25mm×45°
Coatings	Custom Design

Part Number	A (mm)	B (mm)	C (mm)
LORP3-3	3.00	3.00	3.00
LORP3-5	3.00	3.00	5.00
LORP3-8	3.00	3.00	8.00
LORP3-10	3.00	3.00	10.00
LORP5-5	5.00	5.00	5.00
LORP10-10	10.00	10.00	10.00
LORP15-15	15.00	15.00	15.00
LORP20-20	20.00	20.00	20.00
LORP20-60	20.00	20.00	60.00
LORP25-25	25.00	25.00	25.00
LORP25.4-25.4	25.40	25.40	25.40
LORP30-20	30.00	20.00	30.00
LORP30-30	30.00	30.00	30.00
LORP50.8-50.8	50.80	50.80	50.80

UV Fused Silica Right Angle Prisms

UV Fused Silica right angle prisms offer excellent transmission from UV to near-IR wavelengths. They provide the same optical path deflection capabilities as BK7 prisms while being suitable for UV and high-power laser applications.

Material	UV Fused Silica
Diameter Tolerance	±0.15mm
Angle Tolerance	±10 arcsec
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Beveling	0.25mm×45°

Part Number	A (mm)	B (mm)	C (mm)
LORPF3-3	3.00	3.00	3.00
LORPF3-5	3.00	3.00	5.00
LORPF3-8	3.00	3.00	8.00
LORPF3-10	3.00	3.00	10.00
LORPF5-5	5.00	5.00	5.00
LORPF10-10	10.00	10.00	10.00
LORPF15-15	15.00	15.00	15.00
LORPF20-20	20.00	20.00	20.00
LORPF20-60	20.00	20.00	60.00
LORPF25-25	25.00	25.00	25.00
LORPF25.4-25.4	25.40	25.40	25.40
LORPF30-20	30.00	20.00	30.00
LORPF30-30	30.00	30.00	30.00
LORPF50.8-50.8	50.80	50.80	50.80

Penta Prisms

Penta prisms are 90° beam deflectors. They deflect incident light by exactly 90° regardless of the incident angle on the first surface. Unlike right angle prisms, penta prisms produce an erect image without rotation or mirror reversal. Ideal for camera viewfinders and image observation systems.

Material	H-K9L (BK7)
Diameter Tolerance	±0.15mm
Angle Tolerance	±10 arcsec
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Beveling	0.25mm×45°
Coatings	Custom Design

Part Number	A (mm)	H (mm)
LOPR7-6	7.00	6.00
LOPR8-8	8.00	8.00
LOPR10-10	10.00	10.00
LOPR12-12	12.00	12.00
LOPR20-20	20.00	20.00
LOPR25.4-25.4	25.40	25.40

Corner Cube Prisms

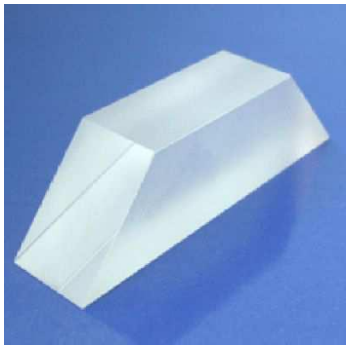
Corner cube prisms (retro-reflectors) utilize total internal reflection based on the critical angle principle. They reflect incident light by 180° regardless of the incident angle. Any incoming ray entering the aperture is efficiently returned in its original direction.

Material	H-K9L (BK7)
Diameter Tolerance	±0.15mm
Angle Tolerance	±10 arcsec

Part Number	Diameter Φ (mm)	Height H (mm)
LOCP12.7	12.70	10.20
LOCP15	15.00	11.30
LOCP25.4	25.40	19.00
LOCP38	38.00	28.50
LOCP50.8	50.80	37.50
LOCP70	70.00	52.50

Dove Prisms

Dove prisms are image rotators. Light passing through the prism produces an inverted image rotated by 180°. When the prism is rotated about its optical axis, the image rotation rate is twice the prism rotation rate, making them useful for beam rotation applications.

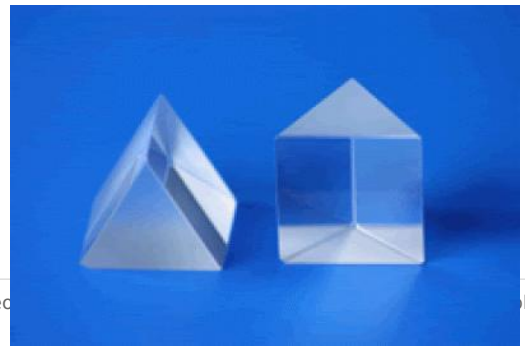


Material	H-K9L (BK7)
Diameter Tolerance	±0.15mm
Angle Tolerance	±1 arc min
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Beveling	0.25mm×45°
Coatings	Custom Design

Part Number	A (mm)	B (mm)	H (mm)
LODP01	9.30	2.60	1.30
LODP02	14.00	5.00	2.60
LODP03	80.00	20.00	20.00
LODP04	21.10	5.00	5.00
LODP05	42.30	10.00	10.00
LODP06	63.40	15.00	15.00

Equilateral Dispersing Prisms

Equilateral dispersing prisms separate white light into its constituent colors for spectral analysis. When light enters at an angle, different wavelengths refract at different angles due to wavelength-dependent refractive index, producing a spectrum. The 60° apex angle provides optimal dispersion with minimal reflection loss.



Part Number	A=B=C (mm)	H (mm)
LOEP01	12.70	12.70
LOEP02	15.00	15.00
LOEP03	25.40	25.40
LOEP04	30.00	30.00
LOEP05	38.10	38.10

Roof Prisms

Roof prisms are compact and allow the objective and eyepiece to be in a straight line, making them ideal for compact binoculars. The key feature is the roof surface - two reflecting surfaces meeting at an edge in the optical path. This design may show a dividing line in the field of view as the beam is split and recombined.

Material	H-K9L (BK7)
Diameter Tolerance	±0.15mm
Angle Tolerance	±1 arc min
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Beveling	0.25mm×45°
Coatings	Custom Design

Part Number	A=B (mm)	H (mm)
LORP01	12.00	15.00
LORP02	18.00	23.00
LORP03	40.00	56.60

Optical Filters

Narrow Band Interference Filters

Narrow band interference filters are bandpass filters that use dielectric and metal multilayer coatings for interference effects. They select specific wavelengths from incident light with half-peak bandwidth (FWHM) ranging from 1nm to 40nm. These filters can replace expensive gratings and are widely used in optical experiments and industrial applications.

Material	H-K9L (BK7)
Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm
Surface Quality	40-20
Surface Flatness	λ/4 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
Center Wavelength Tolerance	±0.2nm

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF193-25.4	193	25.4	15	>12
LONF200-25.4	200	25.4	15	>12
LONF251-25.4	251	25.4	6	>20
LONF253-25.4	253	25.4	6	>22

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF256-25.4	256	25.4	9	>17
LONF257-25.4	257	25.4	9	>18
LONF260-25.4	260	25.4	8	>48
LONF262-25.4	262	25.4	10	>27
LONF263-25.4	263	25.4	10	>15
LONF264-25.4	264	25.4	10	>24
LONF265-25.4	265	25.4	10	>23

Narrow Band Interference Filters (Continued)

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF342-25.4	342	25.4	10	>45
LONF344-25.4	344	25.4	10	>45
LONF345-25.4	345	25.4	10	>43
LONF348-25.4	348	25.4	6	>48
LONF350-25.4	350	25.4	10	>45
LONF353-25.4	353	25.4	10	>45
LONF355-25.4	355	25.4	10	>63
LONF360-25.4	360	25.4	10	>30
LONF390-25.4	390	25.4	10	>52
LONF398-25.4	398	25.4	7	>60
LONF400-25.4	400	25.4	8	>52

Narrow Band Interference Filters (Continued)

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF403-25.4	403	25.4	9	>52
LONF405-25.4	405	25.4	10	>48
LONF407-25.4	407	25.4	10	>48
LONF410-25.4	410	25.4	9	>56
LONF415-25.4	415	25.4	8	>70
LONF417-25.4	417	25.4	8	>72
LONF418-25.4	418	25.4	8	>72
LONF450-25.4	450	25.4	10	>50
LONF488-25.4	488	25.4	10	>50
LONF492-25.4	492	25.4	10	>50
LONF505-25.4	505	25.4	10	>50
LONF508-25.4	508.5	25.4	10	>50
LONF510-25.4	510	25.4	10	>50
LONF532-25.4	532	25.4	10	>50
LONF535-25.4	535	25.4	10	>50
LONF540-25.4	540	25.4	10	>50

Narrow Band Interference Filters (Continued)

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF550-25.4	550	25.4	10	>50
LONF570-25.4	570	25.4	10	>50
LONF577-25.4	577	25.4	10	>50
LONF590-25.4	590	25.4	10	>50
LONF600-25.4	600	25.4	10	>50

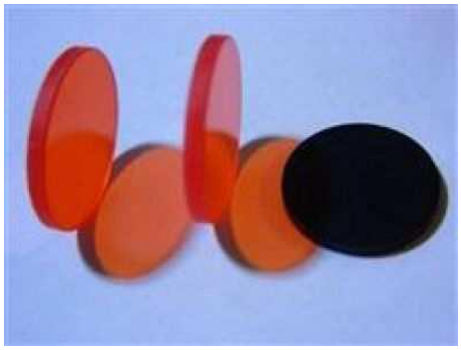
Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF620-25.4	620	25.4	10	>50
LONF630-25.4	630	25.4	10	>50
LONF632.8-25.4	632.8	25.4	10	>50
LONF650-25.4	650	25.4	10	>50
LONF670-25.4	670	25.4	10	>50
LONF690-25.4	690	25.4	10	>50

Narrow Band Interference Filters (Continued)

Part Number	CWL (nm)	Φ (mm)	FWHM (nm)	Peak T (%)
LONF700-25.4	700	25.4	10	>55
LONF710-25.4	710	25.4	10	>55
LONF750-25.4	750	25.4	10	>50
LONF770-25.4	770	25.4	10	>50
LONF800-25.4	800	25.4	10	>50
LONF820-25.4	820	25.4	10	>50
LONF840-25.4	840	25.4	20	>50
LONF870-25.4	870	25.4	20	>50
LONF900-25.4	900	25.4	20	>50

Fixed Neutral Density Filters

Neutral density filters attenuate light intensity based on absorption characteristics. The optical density (OD) determines transmittance - a filter with 0.02 transmittance allows only 2% of light to pass. Neutral density means all wavelengths are attenuated by the same proportion, preserving color balance.



Material	BK7, Fused Silica
Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm
Surface Quality	40-20
Surface Flatness	λ/2 @632.8nm
Centration	<3 arc min
Clear Aperture	>80%
OD Tolerance	±1%

Part Number	Φ (mm)	OD	T (%)
LOFNF1-12.7	12.7	1.0	10.0
LOFNF2-12.7	12.7	2.0	1.0
LOFNF3-12.7	12.7	3.0	0.1
LOFNF4-12.7	12.7	4.0	0.01

Fixed Neutral Density Filters (Continued)

Part Number	Φ (mm)	OD	T (%)
LOFNF0.045-25.4	25.4	0.045	90
LOFNF0.1-25.4	25.4	0.1	79
LOFNF0.2-25.4	25.4	0.2	63
LOFNF0.3-25.4	25.4	0.3	50
LOFNF0.4-25.4	25.4	0.4	39.8
LOFNF0.5-25.4	25.4	0.5	32
LOFNF0.8-25.4	25.4	0.8	15.8
LOFNF1-25.4	25.4	1.0	10
LOFNF1.5-25.4	25.4	1.5	3.2
LOFNF2-25.4	25.4	2.0	1
LOFNF3-25.4	25.4	3.0	0.1

Fixed Neutral Density Filters (Continued)

Part Number	Dimension	OD	T (%)
LOFNF0.1-50	50×50	0.1	79
LOFNF0.2-50	50×50	0.2	63
LOFNF0.3-50	50×50	0.3	50
LOFNF1-50	50×50	1.0	10
LOFNF2-50	50×50	2.0	1
LOFNF3-50	50×50	3.0	0.1

Fixed Neutral Density Filters (Continued)

Part Number	Φ (mm)	OD	T (%)
LOFNF1-60	60	1.0	10
LOFNF2-60	60	2.0	1
LOFNF3-60	60	3.0	0.1
LOFNF4-60	60	4.0	0.01

Circular Variable ND Filters

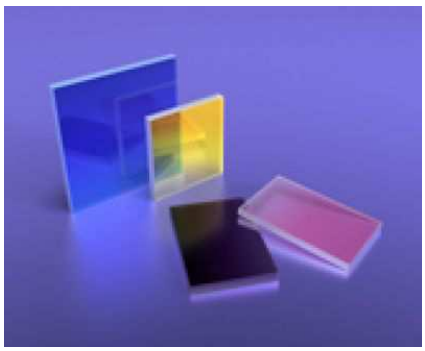
Circular neutral density gradient filters provide linear optical density attenuation through absorption and reflection from visible to near-infrared wavelengths. The density varies radially, allowing adjustable attenuation by rotating the filter.

Material	BK7, Fused Silica
Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm
Surface Quality	60-40
Surface Flatness	λ/2 @632.8nm
Centration	<3 arc min
Clear Aperture	>90%
Parallelism	<3 arc min

Part Number	OD Range	Φ (mm)
LORVF01	0.0-1.0	25.00
LORVF03	0.0-1.0	50.00
LORVF04	0.0-1.5	25.00
LORVF05	0.0-1.5	50.00
LORVF06	0.0-2.0	25.00
LORVF07	0.0-2.0	50.00
LORVF08	0.0-3.0	25.00
LORVF09	0.0-3.0	50.00

Linear Variable ND Filters

Linear variable neutral density filters provide adjustable optical density by sliding the filter to change the effective thickness. Density varies linearly across the filter length from 0.8 to 2.0 OD, covering 400-1100nm wavelength range.



Material	BK7, Fused Silica
Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm
Surface Quality	60-40
Surface Flatness	λ/2 @632.8nm
Centration	<3 arc min
Clear Aperture	>90%
Parallelism	<3 arc min

Part Number	OD Range	Wavelength (nm)	Dimension (mm)
LOLVF01	0.8-2.0	400-1100	76.2×25.4×2.0
LOLVF02	0.8-2.0	400-1100	50.8×25.4×2.0

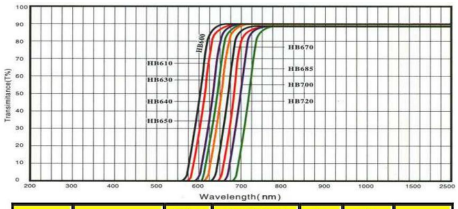
UV Bandpass Filters (UV Transmitting / Visible Absorbing)

These filters absorb visible light while allowing near-infrared light to pass through. They are primarily used for extracting UV light, such as separating UV radiation from mercury lamps in analytical and industrial applications.

Part Number	Φ (mm)	T (mm)	T@254 nm	T@280 nm	T@313 nm	T@365 nm	T@405 nm
LOZWB1-25.4	25.4	2	≥50%	≥81%		≤1.0%	≤30%
LOZWB2-25.4	25.4	2		≥38%	≥80%	≤8%	≤14%
LOZWB3-25.4	25.4	2	≥50%		≥86%	≤28.8%	≤64%

IR Bandpass Filters (IR Transmitting / Visible Absorbing)

These filters absorb short wavelengths and allow light above a specific cutoff wavelength in the infrared region to pass. Mainly used in infrared instruments and night vision devices.



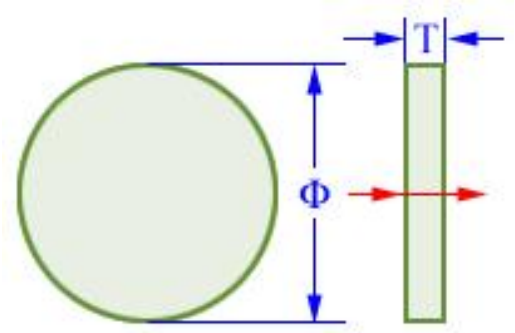
型号	直径Φ(mm)	厚度 T (mm)	截止波长 λtj (nm)	λ0 (nm)	Tλ0 (%)	K
LOHB600	25.4	2	600 ± 10	680	≥88.7	≥1.2
LOHB610	25.4	2	610 ± 10	680	≥88.7	≥1.2
LOHB630	25.4	2	630 ± 10	700	≥88.7	≥1.2
LOHB640	25.4	2	640 ± 10	720	≥88.7	≥1.2

Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm
Surface Quality	60-40
Surface Flatness	λ/2
Centration	<3 arc min
Clear Aperture	>90%
Parallelism	<3 arc min

Part Number	Φ (mm)	T (mm)	Cut-on (nm)	Cut-off (nm)	T@Cut-on (%)	T@Cut-off (%)
LOHB650	25.4	2	650±10	720	≥87.5	≥1.0
LOHB670	25.4	2	670±10	750	≥87.5	≥1.0
LOHB685	25.4	2	685±10	800	≥83.6	≥0.8
LOHB700	25.4	2	700±10	800	≥79.8	≥0.8
LOHB720	25.4	3	720±10	800	≥80.0	≥0.8
LOHB760	25.4	2	760±10	850	≥83.6	≥0.6
LOHB800	25.4	2	800±10	900	≥83.6	≥0.5
LOHB830	25.4	2	830±10	930	≥83.6	≥0.5
LOHB850	25.4	2	850±10	950	≥80.0	≥0.5
LOHB930	25.4	2	930±10	1050	≥80.0	≥0.2

Bandpass Filters

Bandpass filters have a narrow bandwidth with significant cutoff on both short and long wavelength sides. The half-width (λ2-λ1) is defined as the wavelength difference where transmittance equals half the maximum value. Short-wave cutoff is where transmittance reaches zero on the short-wavelength side of the peak.



Diameter Tolerance	±0.2mm
Thickness Tolerance	±0.15mm

Part Number	Φ (mm)	T (mm)	Peak TM/λM (nm)	SW Cutoff T/λ (nm)	LW Cutoff T/λ (nm)	FWHM (nm)
LODBT400	25.4	2	≥45/400±2	0/320±5	0/525±5	≤90
LODBT435	25.4	2	≥48/435±2	0/340±5	≤2.0/540±5	≤100
LODBT470	25.4	2	≥40/470±2	0/340±5	0/600±5	≤115
LODBT500	25.4	2	≥48/500±2	0/380±5	0/630±5	≤100
LODBT530	25.4	2	≥48/530±2	0/420±5	0/670±5	≤95
LODBT545	25.4	2	≥48/545±2	0/400±5	0/720±5	≤100
LODBT560	25.4	2	≥40/560±2	0/435±5	0/725±5	≤104
LODBT600	25.4	2	≥36/600±2	0/470±5	≤1.0/800±5	≤95
LODBT660	25.4	2	≥44/660±2	0/500±5	≤2.0/800±5	≤115
LODBT700	25.4	2	≥28/700±2	≤0.5/570±5	≤2.0/820±5	≤95
LODBT720	25.4	2	≥50/720±2	0/500±5	≤9.0/900±5	≤140