

Edgepass Interference Filters

Optics

Lenses

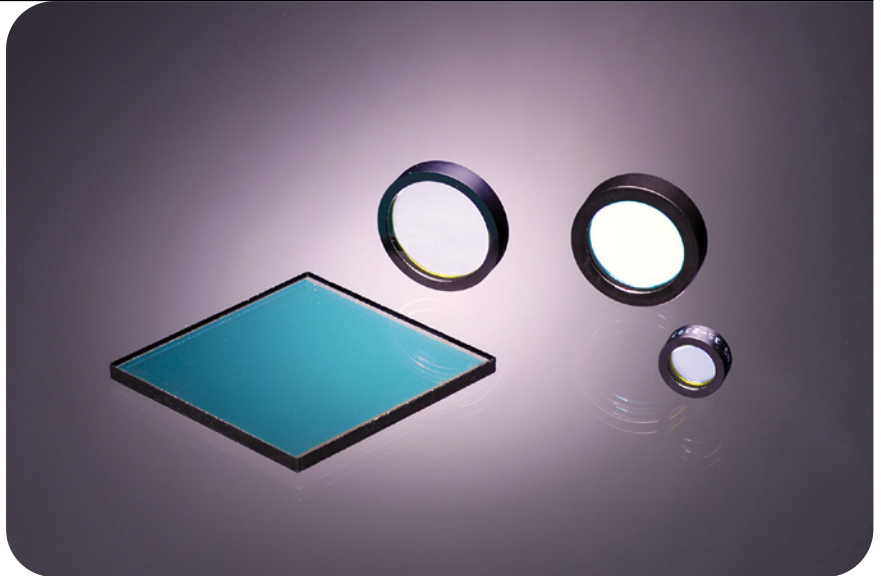
Mirrors & Beamsplitters

Prisms & Polarizers

Filters

Pinholes

- **Short-pass and long-pass for a wide range of wavelengths**
- **Very sharp cut-on and cut-off**
- **Attenuation >99% average within specified range**
- **May be combined to form custom bandpass filters**
- **Supplied with spectrophotometer traces**



Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro Positioners

Motorized Positioners

Edgepass filters are called short-pass or long-pass according to whether they transmit below or above their transition wavelength. Our Short-wave and Long-wave Pass Filters exhibit a sharp transition from a spectral region of attenuation to one of transmission. Because they attenuate by reflection, these filters can be used in either the transmissive or the reflective mode.

Transition wavelength, or cut-on/off wavelength (COWL) is the wavelength at which the transmission is 50% of its peak value. The sharpness of an edge pass filter is defined by a slope factor which is expressed as a percentage:

The value of edge filters is in rejecting unwanted wavelengths. For this reason they must be effectively blocked over a wide spectral range (see tables for specifications). Ealing edgepass filters attenuate >99% average within the specified range.

$$<6\% \text{ slope} = \frac{\lambda_{80} - \lambda_5}{\lambda_5} \times 100, \text{ where } \lambda_{80} \text{ and } \lambda_5 \text{ are the wavelength at 80\% and 5\% of peak transmission}$$

A common use for edgepass filters is to combine them with a filter or detector response in order to define a wavelength range. They may be used to

separate spectral orders, and in pairs as variable bandpass filters. They may also be used as heat or UV filters. Measured spectrophotometer traces are supplied with each filter.

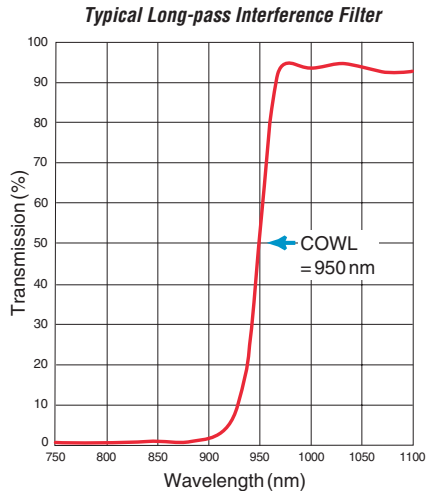
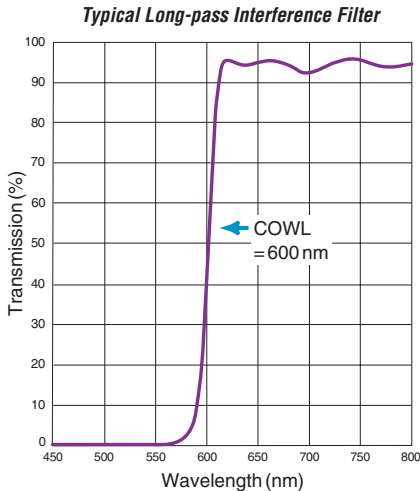
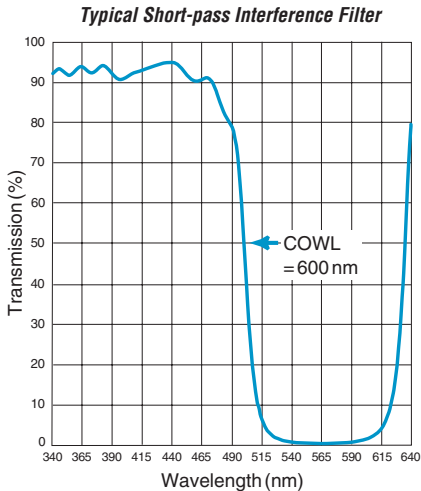
We will be pleased to discuss your specific requirements for filters not listed in this catalog and to quote for your volume OEM requirements.

Modular Filter Wheels are also available on page 91.



Filter Storage Boxes are also available.





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Specifications

- Diameter:** 25.0 +/- .025 mm diameter
- Thickness:** 1.5 ± 0.5 mm
- Min. clear aperture:** 21.0 mm
- Transmission:** >80% average within specified range
- Attenuation:** >99% average within specified range
- Slope:** <6%, where slope = $(\lambda_{80\%Tpk} - \lambda_{5\%Tobs}) / \lambda_{5\%Tobs}$
- Angle of incidence:** 0° ± 5°
- Substrate material:** Fused Silica
- Coating material:** Refractory oxide
- Surface quality:** 80/50 per Mil-O-13830B
- Coating quality:** 40/20 per Mil-O-13830B
- Wedge:** <3 arc minutes
- Wavefront distortion:** ≤1 wave per inch
- Humidity resistance:** Per Mil-C-675A
- Abrasion resistance:** Per Mil-C-675A
- Optimum temp:** 23°C
- Temperature limits:** -50°C to 100°C
- Certification:** Spectrophotometer print of lot sample
- Cleaning:** Non-abrasive method, isopropyl alcohol on lens tissue recommended
- Laser Damage Threshold:**
 - CW: 1 W/cm²
 - Pulsed: 1 J/cm²

Short-pass Interference Filters

Catalog Number	CWOL (nm)	Transmission Range (nm)	Wavelength at 50% T (nm)	Attenuation Range (nm)	Price US
40-0001	450	305-425	450 ±10	475-530	\$105.00
40-0006	500	340-475	500 ±10	525-600	\$105.00
40-0011	550	375-520	550 ±10	575-650	\$105.00
40-0016	600	400-565	600 ±10	630-750	\$105.00
40-0021	650	400-615	650 ±10	685-815	\$105.00
40-0026	700	400-660	700 ±10	735-875	\$105.00
40-0031	750	400-710	750 ±10	790-935	\$105.00
40-0036	800	400-755	800 ±10	840-1000	\$105.00
40-0041	850	400-805	850 ±10	895-1060	\$105.00
40-0047	900	400-850	900 ±10	945-1125	\$105.00
40-0052	950	400-900	950 ±10	1000-1188	\$105.00
40-0057	1000	400-945	1000 ±10	1050-1250	\$105.00

Long-pass Interference Filters

Catalog Number	CWOL (nm)	Attenuation Range (nm)	Wavelength at 50% T (nm)	Transmission Range (nm)	Price US
40-0062	400	320-380	400 ±10	440-1320	\$105.00
40-0067	450	360-425	450 ±10	495-1485	\$105.00
40-0072	500	400-475	500 ±10	550-1650	\$105.00
40-0077	550	440-520	550 ±10	605-1815	\$105.00
40-0082	600	480-565	600 ±10	660-1980	\$105.00
40-0087	650	520-615	650 ±10	715-2145	\$105.00
40-0092	700	560-660	700 ±10	770-2200	\$105.00
40-0097	750	600-710	750 ±10	825-2200	\$105.00
40-0103	800	640-755	800 ±10	880-2200	\$105.00
40-0108	850	680-805	850 ±10	935-2200	\$105.00
40-0113	900	720-850	900 ±10	990-2200	\$105.00
40-0118	950	760-900	950 ±10	1045-2200	\$105.00
40-0123	1000	800-945	1000 ±10	1100-2200	\$105.00