

Infrared Filters & Coatings

# Standard IR Bandpass Filters



Bandpass filters isolate specific regions of the spectrum, simultaneously providing high transmission of desired energy, and deep rejection of unwanted energy. Available in wide or narrow bandwidths, they can be tailored to suit your specific requirements.

Constructed of hard, durable first-surface dielectric coatings on optical-quality, IR-transmitting substrates, these filters will withstand normal cleaning and handling associated with any high-quality optical component.

Our standard IR bandpass filters are 25mm in diameter. However, we can produce custom sizes and shapes, as well as custom optical characteristics. Contact our technical sales department for a quote.

- Useful for isolating narrow spectral regions
- Constructed of hard, durable first-surface coatings
- Available in standard and custom wavelengths up to 14 $\mu$ m

## Typical Applications Include:

- Environmental
- Monitoring
- Security Systems
- Thermal Imaging
- Avionics

## General Specifications

<b>Diameter Tolerance:</b>	+0/-0.1mm
<b>Min. Clear Aperture</b>	21mm Dia.
<b>Transmission (Typ.):</b>	90% typical
<b>Blocking:</b>	T < 0.1% Average to 30 $\mu$ m
<b>24-hour Humidity:</b>	per MIL-C-48497A
<b>Moderate Abrasion:</b>	per MIL-C-48497A
<b>Adhesion:</b>	per MIL-C-48497A

*Optional: Mounted in threaded ring, see pg 58 for thread sizes*

Andover can design and fabricate custom bandpass filters to suit your particular requirements. Every phase of the process is performed in-house, including thin-film coating design, mechanical design, substrate fabrication and polishing, coating, inspection, and environmental testing.

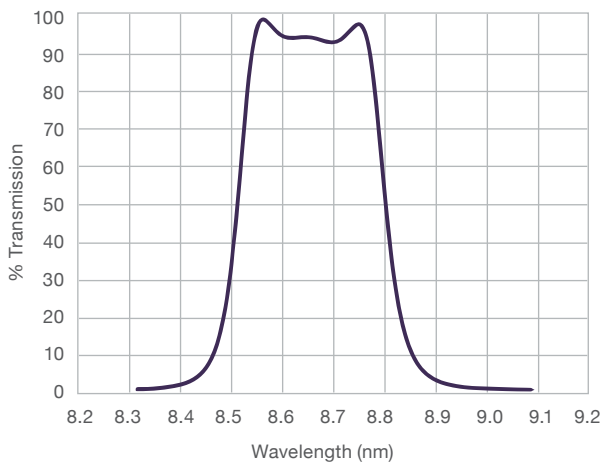
For ease of selection, we have created a matrix of typical wavelength ranges and bandwidths which are readily manufacturable. Simply specify the wavelength and bandwidth within the range, and select the appropriate part number.

If there is not a suitable filter in the table, please contact us. We can coat a variety of substrate materials, including Germanium, Sapphire, Silicon, Calcium Fluoride, Zinc Sulfide, and Zinc Selenide. Contact us for a quotation, whether it is for prototype quantities, or production quantities.

Standard IR Gas Analysis Bandpass Filters					
Gas	Center W/L (μm)	Bandwidth	Trans(%)	Blocking	Part Number
Water Vapor	2.70 ± .03μm	110 ± 30nm		UV to 30μm	2.70GA05-25
	2.95 ± .03μm	110 ± 30nm		UV to 30μm	2.95GA05-25
Methane and Ethanol	3.46 ± .04μm	140 ± 30nm		UV to 30μm	3.46GA05-25
Formaldehyde	3.60 ± .04μm	140 ± 30nm		UV to 30μm	3.60GA05-25
SWIR	4.00 ± .20μm	2000 ± 200nm	80	UV to 7μm	4.00GA20-25
CO <sub>2</sub>	4.26 ± .04μm	120 ± 30nm		UV to 30μm	4.26GA05-25
CO	4.67 ± .05μm	150 ± 30nm		UV to 30μm	4.70GA05-25
NO	5.30 ± .05μm	420 ± 50nm	90	UV to 30μm	5.30GA05-25
FIR Broadband	10.0 ± .30μm	4000 ± 500nm	80	UV to 17μm	10.00GA40-25
CO <sub>2</sub>	10.6 ± .10μm	1500 ± 100nm	80	UV to 16.5μm	10.60GA15-25

Custom IR Bandpass Filters					
Substrate	CW/L Range (nm)	FWHM (%)	Trans (%)	Blocking	Part Numbers
Sapphire	2500-5300	1-3	70	UV to 30μm	IRFC10-25
	2500-5300	3-10	75	UV to 30μm	IRFC12-25
	2500-5300	10-14	80	UV to 30μm	IRFC14-25
Germanium	7500-9500	3-8	75	UV to CW/Lx1.65	IRFC16-25
	7500-9500	8-14	80	UV to CW/Lx1.65	IRFC18-25
	9500-11000	3-8	75	UV to CW/Lx1.65	IRFC20-25
	9500-11000	8-14	80	UV to CW/Lx1.65	IRFC22-25
	7500-9500	3-8	80	7500 to 13500nm	IRFC24-25
	7500-9500	8-14	85	7500 to 13500nm	IRFC26-25
	9500-12000	3-8	80	7500 to 13500nm	IRFC28-25
	9500-12000	8-14	80	7500 to 13500nm	IRFC30-25

Typical 3% IR Bandpass Filter



Typical 1% IR Bandpass Filter

