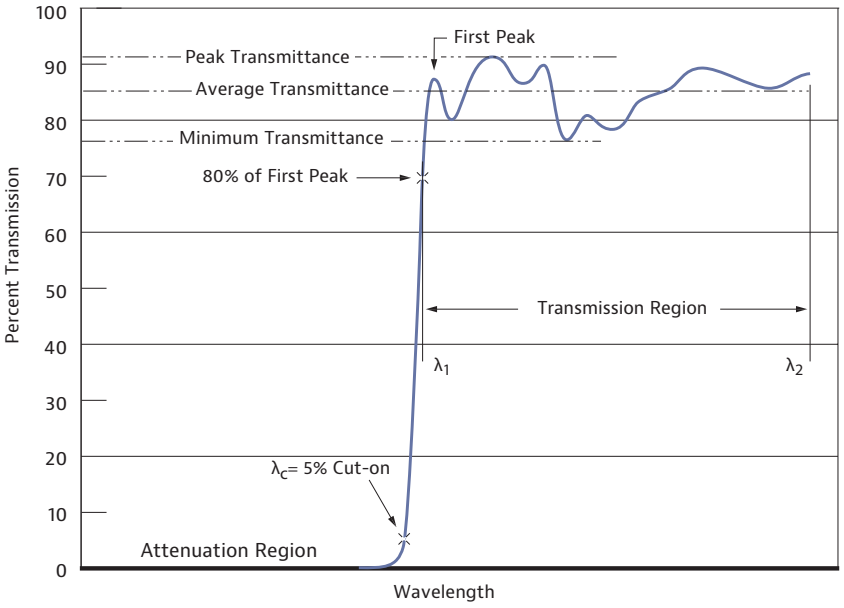
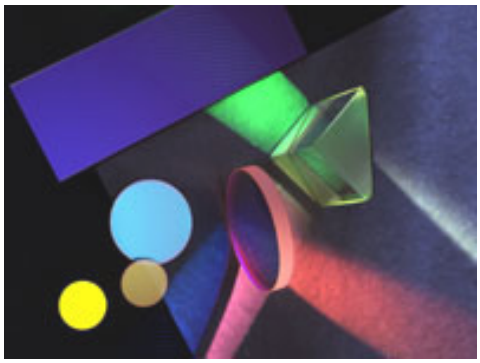
VIAVI Solutions

Data Sheet

VIAVI
Infrared Long Wavepass Filters

Infrared long wavepass filters developed by VIAVI Solutions provide high transmission over the spectral region from the cut-on wavelength to approximately twice the cut-on wavelength, and can be deposited on a variety of infrared transmitting substrates. The cut-on wavelength can be located anywhere in the infrared up to approximately 16 µm.





Key Features

- Excellent coating uniformity
- Tightly toleranced precision filter expertise
- Flat spectral profile
- High peak transmission value
- Excellent blocking
- Wide range of filters and assemblies for the infrared sensing and imaging instrumentation market
- High volume capability
- Expert application engineering support
- Available filter substrates are: Si, Ge, Glass, Sapphire, Quartz, Fused Silica, ZnS, ZnSe

Applications

- Gas monitoring
- Temperature sensing
- Thermal imaging
- Motion sensing

Standard

- Temperature, humidity, mild abrasion, adherence: MIL-F-48616

Spectral Characteristics

Parameter	Symbol	Conditions	Minimum	Maximum
Cut-on wavelength range[1]	λ_C	At 5% transmission, 25°C, 0° AOI	1 µm	16 µm
Nominal bandwidth[1, 2]	λ_2/λ_1	At 25°C, 0° AOI	1.3	1.9
Cut-on/Cut-off slope[1, 3]		At 25°C, 0° AOI	3%	6%
Absolute center wavelength drift vs temperature			0.002%/°C	0.01%/°C

Minimum Transmission

Center Wavelength Range	Nominal Bandwidth λ_1/λ_2	Minimum Average Transmittance[4,5]	Minimum Absolute Transmittance[4,5,6]
1 to 3 µm	1.3	85%	75%
	1.6	80%	70%
	1.9	80%	70%
3 to 8 µm	1.3	85%	80%
	1.6	85%	75%
	1.9	80%	70%
8 to 12 µm	1.3	80%	70%
	1.6	80%	70%
	1.9	80%	65%
12 to 15 µm	1.3	75%	65%
	1.6	70%	55%
	1.9	45%	30%

Filter Size

Type	Minimum	Maximum
Square or rectangle	2 mm	100 mm
Diameter	2 mm	150 mm
Thickness	0.3 mm	—
Thickness tolerance[7]	±0.025 mm	—

[1]AOI: angle of incidence.

[2]$\lambda 1$ is defined as λc + (3% to 6% of λc).

[3]Cut-on/Cut-off slopes ≥4% are for standard design and consistent with standard production yields.

[4]All transmission values are consistent with standard production yields.

[5]All transmission values are for filters attenuated below the cut-on wavelength to T ≤ 0.1% average.

[6]Minimum Absolute Transmission is the value below which transmission will not fall for any wavelength in the wavelength region defined by $\lambda 2/\lambda 1$.

[7]Thickness tolerance for standard design is ±0.1 mm.

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