

Pigtailed Fabry-Perot Etalon Device

Optoplex's Inline Fabry-Perot Air-Gap Etalon is based on its proprietary free-space optics technology that offers superior optical performance and excellent environmental stability. With in-situ monitoring and adjustment in manufacturing, the peak wavelength can be aligned precisely to what the customers need.

Optoplex provides a wide selection of F-P Etalons covering different wavelength ranges for C-, L-, C+L, or O-band with different FSR from 200GHz, 100GHz, 50GHz, 25GHz, 12.5GHz to 6.25GHz.

Types of Packages

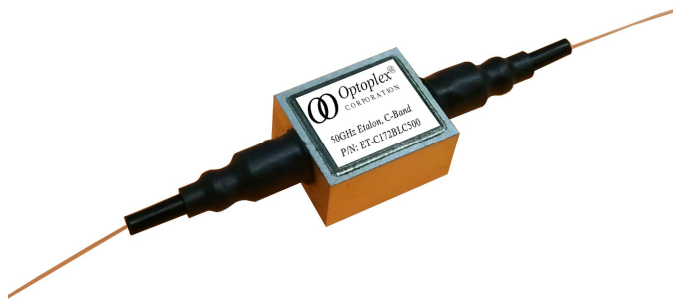


Figure 1, Standard Etalon Device, Type A
Type-A: Input and output at opposite side

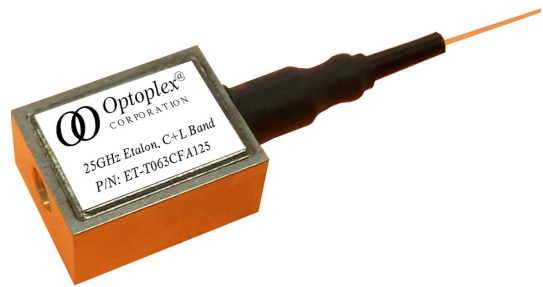


Figure 2, Standard Etalon Device, Type B
Type-B: Input and output at same side with a dual-fiber collimator. Type-B offers better peak-to-valley contrast ratio

Features

- Low insertion loss
- Precise peak wavelength (frequency) setting
- Extremely environmental stability (+/-1.5GHz lifetime)
- Compact size
- Wide selections of wavelength coverages
- Large selections of FSR: 200, 100, 50, 25, 12.5, 6.25 or customer specific
- Option with PM fiber available

Applications

- DWDM filtering
- Comb light source
- Inter-channel noise suppression
- Wavelength reference
- Signal shaping
- Spectroscopic Optical instrumentation

Optical Performance Specification

Parameter	Symbol	Unit	FSR		
Free Spectral Range (FSR)	FSR	GHz	200	100	50
FSR Tolerance	Δ FSR	GHz	\pm 0.2	\pm 0.05	\pm 0.013
Center Frequency Alignment at room temperature	$\Delta\phi$	GHz	\pm 2.6	\pm 1.3	\pm 0.7
Temperature dependent frequency shift	TDFS	MHz/°C	40	40	40

3-dB Bandwidth for T-Channel of 50, 100, and 200 GHz Etalons with Different Reflector

Mirror Reflectance	Symbol	Unit	FSR		
			200 GHz	100 GHz	50 GHz
31%	FWHM	GHz	85.1	42.5	21.3
45%	FWHM	GHz	53.8	26.9	13.5
64%	FWHM	GHz	28.9	14.5	7.2
70%	FWHM	GHz	23.0	11.5	5.7
80%	FWHM	GHz	14.3	7.1	4.6

Peak Insertion Loss at T- and R-Channels for Different Reflector

Mirror Reflectance	Symbol	Unit	T-channel	R-channel
31%	IL	dB	-1.5	-2.3
45%	IL	dB	-1.7	-1.6
64%	IL	dB	-1.8	-1.3
70%	IL	dB	-2.0	-1.2
80%	IL	dB	-2.3	-1.2

Model and Part Number Definition

