



Fiber Pigtailed Fabry-Perot Etalons

Fiber Pigtailed Fabry-Perot Etalons of WLFE-series are based on free space Fabry-Perot Etalon. They provide periodical wavelength-comb transmission. Basic layouts include 2-port transmission type, 3-port transmission/reflection type and 4-port transmission type. The 2-port device offers transmission spectrum through the Etalon, 3-port device offers both transmission and its supplementary reflection spectrum through the Etalon and 4-port device produces a phase delay between 2 output transmissions when inputting identical signals at 2 input ports. All of these devices are built based on WL Photonics' platform of "Crystal-Bench", allowing them to maintain excellent channel center wavelength stability.

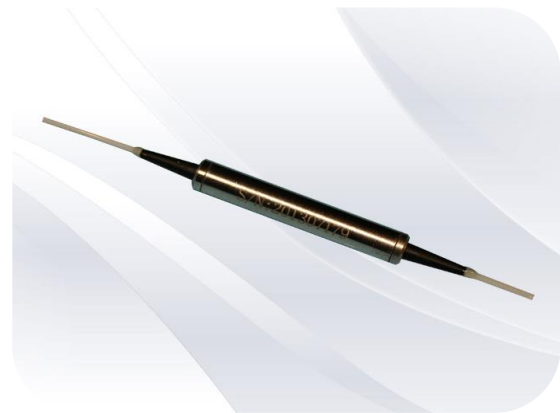
WL Photonics' fiber-pigtailed Fabry-Perot Etalons are available over wide range from C-band with both of single-mode fiber and polarization-maintaining fiber. Etalon's Free Space Range (FSR) and Finesse (F) can be customized for specific requirements. Such the etalons can be cost-effective wavelength references for diverse applications such as optical telecommunication, FBG sensing interrogation system and tunable fiber lasers.

Key Features

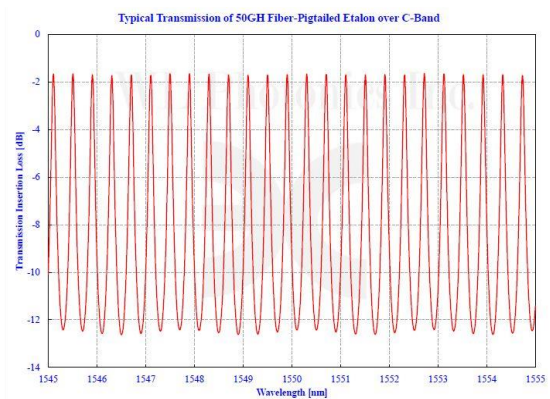
- Available over X-, O-, S-, C- & L-bands
- Compact passive package
- Low insertion loss
- SM or PM fiber pigtail
- High optical power handling

Applications

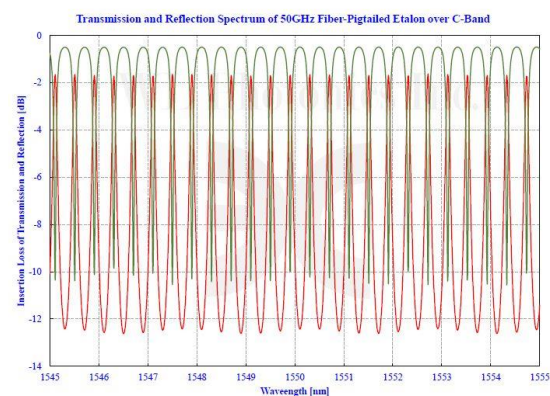
- Wavelength locker
- WDM multiplexing telecom networks
- Hand-held optical spectrum analyzer
- FBG sensing interrogation systems
- Tunable filter lasers
- Tunable optical filters



Standard Fiber Pigtailed Etalon



Spectral Shape of 2-Port Pigtailed Etalon



Spectral Shape of 3-port Pigtailed Etalon



Typical Specifications of Fiber Pigtailed Etalon (WLFE-version)

Parameter	S/C/L-Band
Center Wavelength	1550nm or specified others.
Operating Spectral Range	40nm
Typical FSR	25, 50, 100GHz or specified others
Typical FSR Tolerance	± 0.005 GHz for 100GHz FSR
Finesse	2.5~40
Insertion Loss (residual)	<0.8dB
Polarization-Dependent Loss (PDL)	<0.15dB
Extinction Ratio (ER)	>20dB (connector exclusive and for PM fiber pigtail only)
Return Loss	>45dB
Phase Delay	0 to $\lambda/4$ (for 4-port device only)
Max. Input Optical Power	500mW (CW)
Fiber Type	SMF-28e or PM 1550
Operating Temperature	10 to 50°C
Storage Temperature	-20 to 85°C
Dimension	$\varnothing 5.5$ x 35mm (L) or 40mm (L)
Others	RoHS compliant

Ordering Information

Part Number: WLFE-A-B-C-D-E/F-G-H-I

- A. Port number: 2 is for 2-port transmission type, 3 is for 3-port transmission and reflection device, and 4 is for 4-port device with phase delay between 2 output signals.
- B. Center wavelength in nanometer: 1550 is for 1550nm of C-band.
- C. Free Space Range (FSR) of Etalon in GHz: 25 is for 25GHz and 100 is for 100GHz.
- D. Finesse of Etalon: ranges from 2.5 to 40 or specified others.
- E. Fiber type: SM is for single mode fiber and PM for polarization-maintaining fiber.
- F. Pigtail length in meter: 0.5 is for 0.5m long and 1.0 is for 1M long (only existing for pigtail output).
- G. Cable diameter on pigtail in millimeter: 3.0 is for 3mm OD cable and 0.9 is for 900um OD loose tube.
- H. Connector type of either pigtail termination or receptacle adapter, such as FC/APC, FC/UPC SC/APC or LU/UPC and 00 is for no connector.
- I. Delay phase: 4 is for $\frac{1}{4}$ phase delay between 2 output signals (for 4-port device only).

Example: WLFE-2-1550-50-7.5-SM-0.9/1.0-FC/APC. Fiber pigtailed Etalon of 50 GHz FSR and 7.5 Finesse for 1550nm with 1M long, 0.9mm OD loose cabled SMF-28e single mode fiber pigtail terminated with FC/APC connector on pigtail end. 500mW (CW) max. optical input power.