Manual Etalon-Based Fiber Optic Tunable Filter

(Linewidth 3nm, Tuning range 100nm)

(patent pending)

DATASHEET

BUY NOW

Based on our proprietary thin film cavity filter technology, we manufacture Fiber Optic Tunable Filters with central wavelengths ranging from 750nm to 2450nm. These filters are continuously tunable over a wide spectral range of up to 100nm, with a peak bandwidth of 3nm. Longer center wavelengths offer a larger tuning range. The tuning mechanism involves manually rotating a mirror using a precise micrometer. The filters feature low insertion loss, making them a preferred solution for OEM applications ranging from fiber optic networks to fiber sensing interrogation. Our standard configurations are currently in volume production, providing a low-cost benefit. Customization for other wavelengths is available at an additional cost.

These grating-based tunable filters block the off-bands.

Features

- Compact and Low Cost
- Wide Tune Range
- Wide Wavelength Coverage
- Low IL and PDL
- 3nm Bandwidth
- 100nm Tuning Range

Applications

- DWDM networks
- Fiber Sensing
- ASE control
- Tunable Fiber Laser

Specifications

Parameter		Min	Typical	Max	Unit
Center Wavelength		350		2400	nm
Tuning Range [1]		-	± 50	± 70	nm
Tuning Resolution		-	0.1	-	nm
Insertion Loss [2]		1.5	2	3.5	dB
Bandwidth @-3dB		-	3	3.2	nm
Bandwidth @-20dB		-	10	-	nm
Off-Band Suppression		-	30	-	dB
PDL (SM fiber only)		-	0.15	0.35	dB
PMD (SM fiber only)		-	-	0.5	ps
Extinction Ratio (PM fiber only)		18	23	-	dB
Return Loss		40	-	-	dB
Optical Power Handling (CW)	Standard version	-	0.5		W
	High power version		10		W
Operating Temperature		0	20	60	°C
Storage Temperature		-10	-	70	°C

Notes:

[1]. Longer the wavelength, larger the tuning range

[2]. It is defined as the total light coupled out over the filter's spectral passing band. Measured using a broadband light source with integration of the transmission peak. Extra loss can occur if the laser source does not match the filter profile. A special filter can be made to match the application. The smaller the fiber core, the higher the loss. Excluding connector loss

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

Rev 07/30/24

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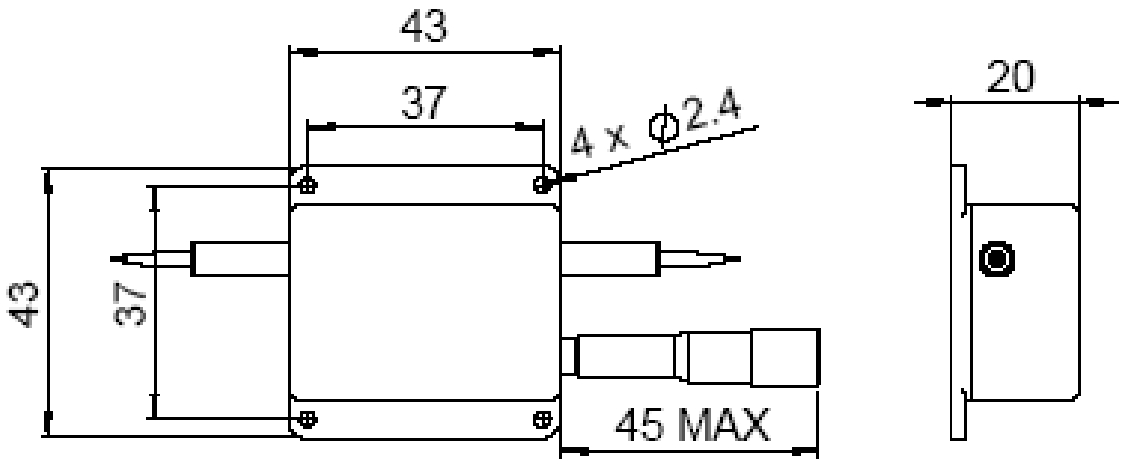
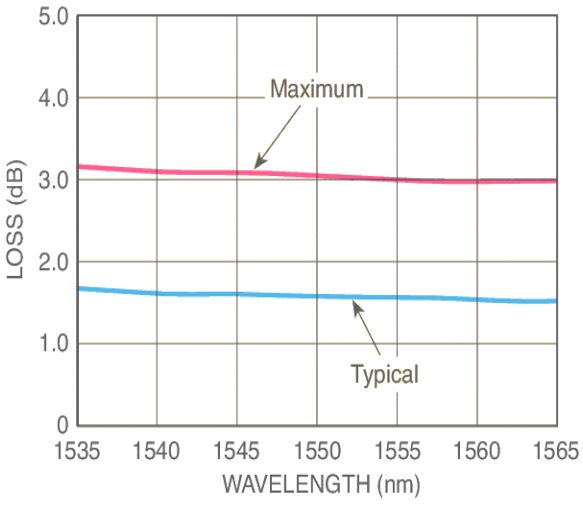
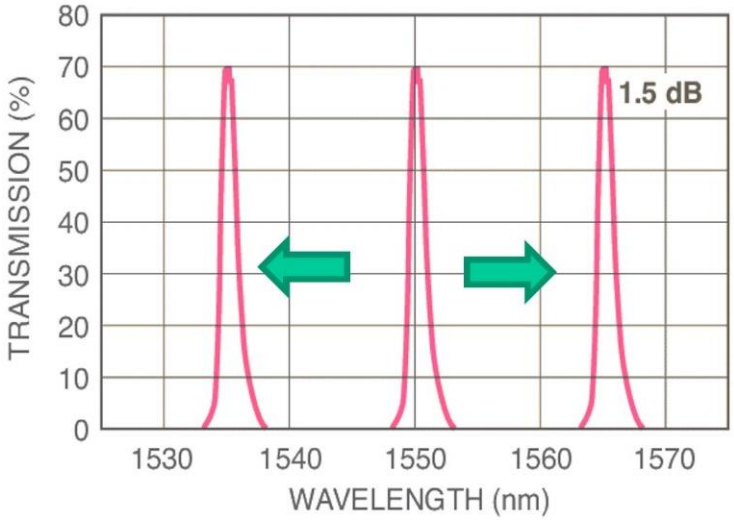
Mechanical Dimension (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Typical Transmission Curve





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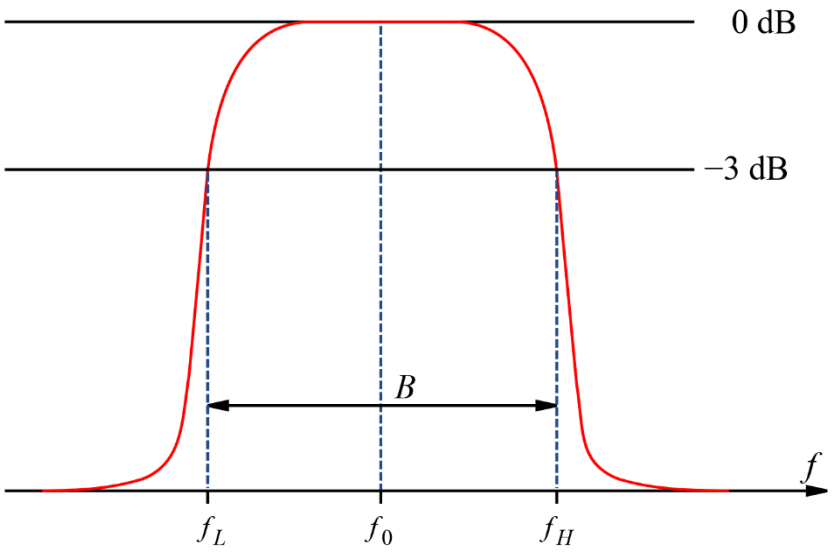
Bandwidth Definition



Ordering Information

	0 3	☐	☐	2	☐	☐	☐	☐
Prefix	**Type**	**Wavelength**	**Power**	**Pack**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
FOTF-		2295± 55nm = E 2195± 55nm = F 2095± 55nm = G 2050± 50nm = H 2000± 50nm = 2 1960± 40nm = 4 1850± 50nm = A 1620± 40nm = 7 1550± 40nm = 5 1480± 40nm = 8 1310± 40nm = 3 1130± 40nm = C 1060± 40nm = 6 1005± 45nm = B Special = 0	Standard = 1 High Power = 2		SMF-28 = 1 HI1060 = 2 PM980 = 3 PM1550 = 4 Special = 0	Bare fiber = 1 900um tube = 3 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Special = 0

Red Items require NRE of $1950 to make the filter

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How to test the insertion loss of a tunable optical filter

The filter only works in a specific range. Beyond this range, extra peaks may show. These peaks can be blocked with special order. Please follow these instructions to do an optical insertion loss test:

1. Connect a broadband fiber-coupled laser source to OSA, sweep one time over the specified range of the tunable filter, and then fix the curve in Trace A as a reference.

2. Connect the broadband laser source to the fiberoptic tunable filter fiber as input, then connect the other fiber port of the tunable filter as the output to the OSA.

3. Set OSA Trace B as 'write,' Trace C as 'Calculate: B-A.' Auto sweep Trace C from the specific range. Tune the micrometer to shift the peak at a different wavelength. Use 'Peak search' to record IL at a different wavelength."

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