MEMS Tunable Fiber Optic Filter

0.4nm peak width, 80nm tuning range, 20ms speed, 1060 to 2000nm

DATASHEET

BUY NOW

Agiltron offers Fiber Optic MEMS Tunable Filters with central wavelengths of 1060nm, 1310nm, 1550nm, and 2000nm. It is tunable continuously over a spectral range of up to 80nm at a speed of about 80ms. The wavelength tuning is actuated by driving a rotating MEMS mirror that is optically coupled with a grating and a dual fiber collimator. It is conveniently controlled with user-friendly GUI and control interfaces of USB or RS232 and I2C.

Features

- Compact
- Wide Tune Range
- Low IL and PDL
- Fast Tuning Speed
- USB. RS232, I2C Control Interfaces
- Gaussian-Shaped Passband

Applications

- DWDM networks
- Fiber Sensing
- Tunable Fiber Laser

Specifications

Parameter	Min	Typical	Max	Unit
Center Wavelength	1060	1550	2000	nm
Tuning Range [1]	-	± 40		nm
Wavelength Repeatability	-	0.03	-	nm
Tuning Speed	-	5	-	nm/ms
Insertion Loss [2]	2.5	3	5	dB
Bandwidth @-3dB	0.35	0.4	0.6	nm
Off-Band Suppression	25	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	-	0.3	1	W
Power Consumption (5V power supply)		0.3		W
Operating Temperature	-5	20	70	°C
Storage Temperature	-40	-	85	°C

Notes:

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

[2]. Measured using a broadband light source with integration of the transmission peak. If the laser source does not matching the filter profile, extra loss can occur. Special filter can be made to match the application. Smaller the fiber core, higher the loss. Excluding connector loss.

Rev 11/16/23

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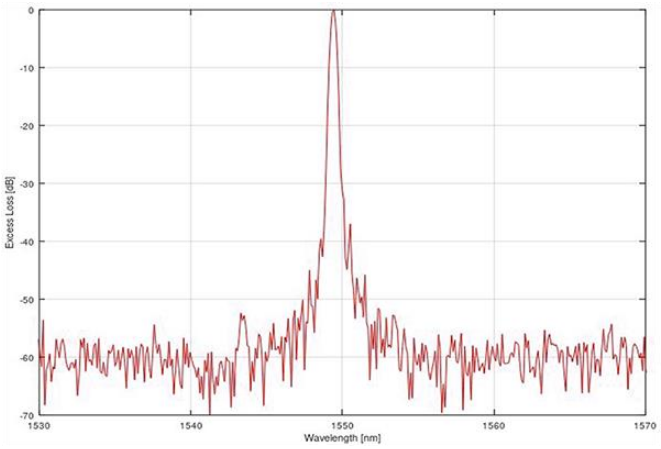
Mechanical Dimension (mm)

Ship with a 5V DC power supply, an USB-micro USB cable, an USB flash disk, and user manual.

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

Typical Transmission Curve



Electrical Driving

Agiltron provides communication protocols and a computer control kit with USB or RS232 interface and Windows™ GUI.

Connector Pin Definition:

Power	Pin 1	GND
	Pin 2	5V

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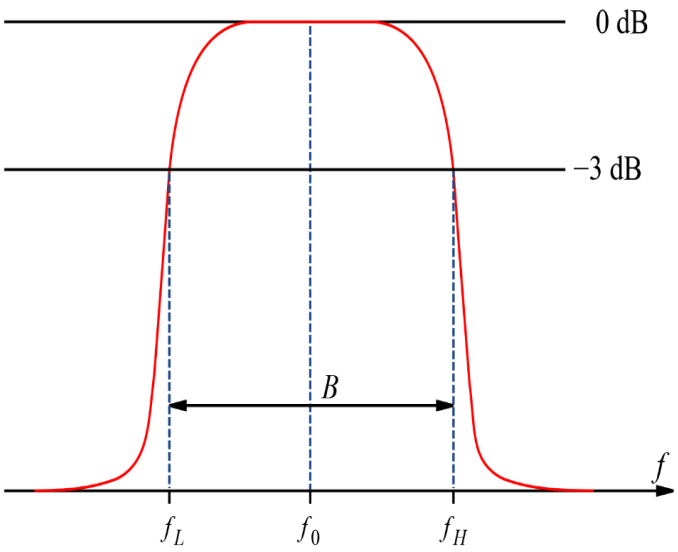
Bandwidth Definition



Ordering Information

	ME	☐	☐	☐	☐	☐	☐	☐
Prefix	**Type**	**Wavelength**	**Power**	**Control**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
FOTF-		1528~1610nm=5 1960 ± 40nm = 4 1620 ± 40nm = 7 1480 ± 40nm = 8 1395 ± 55nm = F 1310 ± 40nm = 3 1230 ± 50nm = E 1145 ± 45nm = D 1130 ± 40nm = C 1060 ± 40nm = 6 Special = 0	Standard = 1 High Power = 2	USB = 1 RS232 = 2 None = 5	SMF-28 = 1 HI1060 = 2 PM980 = 3 PM1550 = 4 SM1950 = 5 PM1950 = 6 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 LC/UPC = U Special = 0

Red Items require NRE of $1950 to make the filter

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Operation Manual

1. Connect the accompanied wall pluggable power supply
2. Install the accompanied GUI into a computer
3. Connect the device with the computer using the accompanied cable
4. Connect the optical fibers, normally with one end to a source and the other to a system
5. Open the GUI and start scanning the wavelength

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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