Electrically Tunable Grating-Based Fiber Optic Filter

(patent pending)

DATASHEET

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Agiltron's Motor Driven Grating-Based Fiber Optic Tunable Filter provides a simple way to adjust the center wavelength of narrow band over wide band. Wavelength tuning is actuated by driving a built-in precise stepper motor through interface of USB or RS232.

Based on a proprietary optics, Agiltron offers extremely low insertion loss, high stability, polarization independent operation, and high off-band suppression. It is tunable continuously over a wide spectral range. The device presents a most cost-effective solution for OEM applications from fiber optic networks to fiber sensing interrogation.

Features

- Extremely Low Loss
- Wide Tune Range
- High Off-Band Suppression
- Uniform bandwidth
- High Tuning Resolution
- Cost-Effective

Applications

- DWDM networks
- Fiber Sensing
- ASE Control
- Tunable Fiber Lasers

Specifications

Parameter		Min	Typical	Max	Unit
Wavelength Tuning Range		1060±15	1500±20	2000±20	nm
Tuning Resolution		-	0.02	-	nm
Tuning Speed					nm/s
Insertion Loss [1]	B-Grade	1.1	2.1	2.5	dB
	A-Grade	1.1	1.6	1.8	dB
Bandwidth @-3dB		-	0.25	-	nm
Bandwidth @-20dB		-	0.75	-	nm
Polarization Dependent Loss		-	0.25	-	dB
Extinction Ratio (PM fiber only)		-	20	-	dB
Off-Band Suppression		-	45	-	dB
Polarization Mode Dispersion		-	-	0.5	ps
Return Loss [1]		40	-	-	dB
Optical Power Handling (CW)		-	-	500 [2]	mW
Operating Temperature		0	20	60	°C
Storage Temperature		-10		70	°C
Dimensions			320 x 110 x 90		mm

Notes:

[1]. 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

[2]. High power version available upon request

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]:

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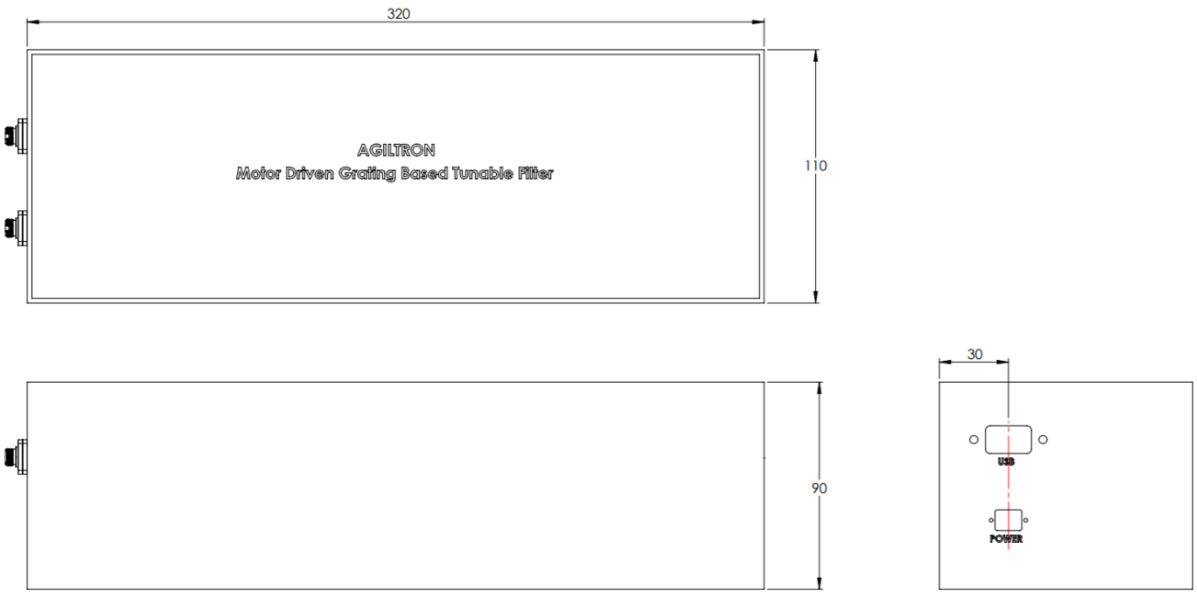
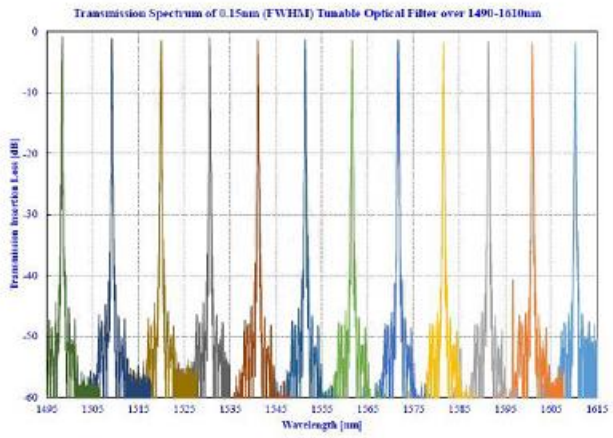
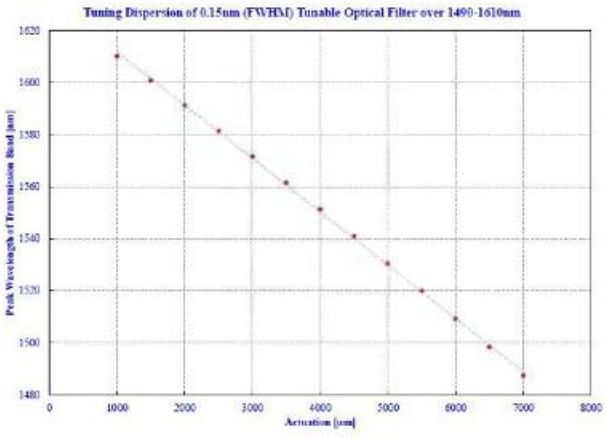
Mechanical Dimension (mm)



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

Spectrum





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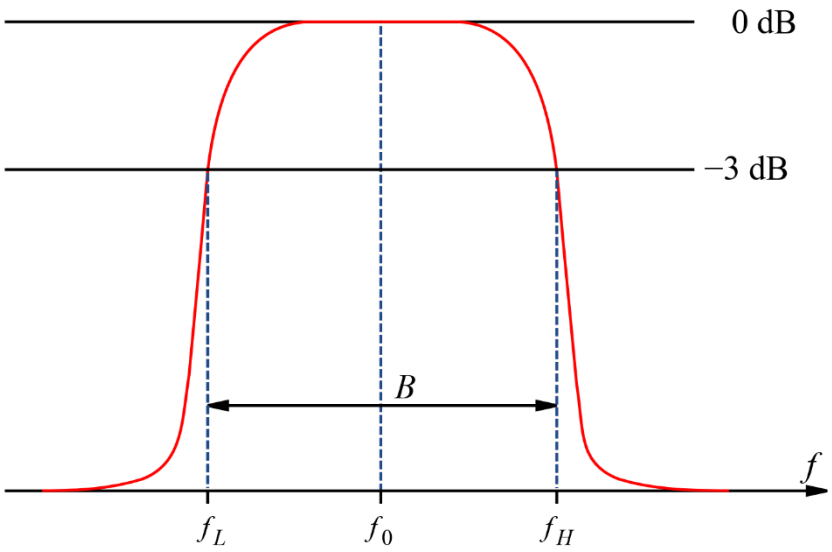
Bandwidth Definition



Ordering Information

	EG	☐	☐	☐	☐	☐	☐	☐	☐
Prefix		**Wavelength**	**Linewidth**	**Type**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**	**API** [2]
FOTF-	07 [1]	1060nm = 1 1310nm = 3 1550nm = 5 1600nm = 6 2000nm = 2	0.25nm = 2	B-grade = 1 A-grade = 2	SMF-28 = 1 Hi1060 = 2 Panda PM1550 = 5 PM980 = E Special = 0	900um loose 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	Non = N Python = P LabVIEW = L

[1]. Old part number

[2]. We provide a complete command list for customer integration but do not offer debugging support for customer code. However, an Application Programming Interface (API) service is available for an additional fee to assist with system integration and remote connectivity.

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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