Fiber Fabry-Perot Tunable Filter | FFP-TF

Description

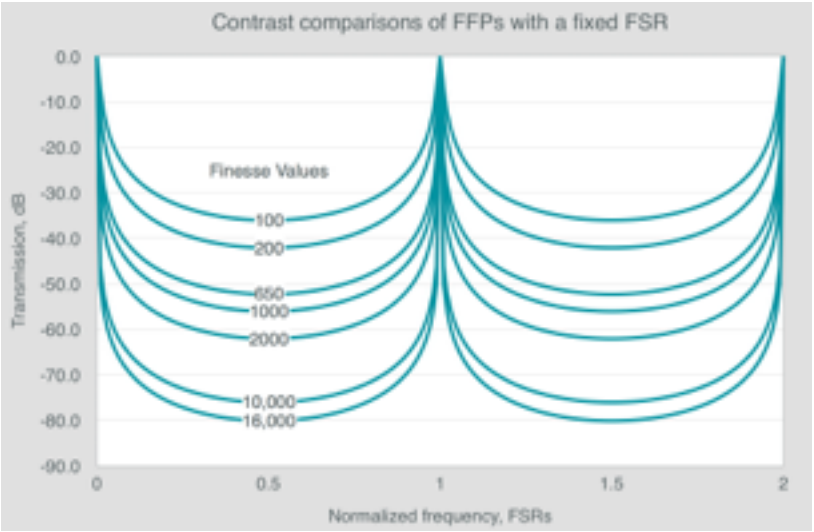
Micron Optics' patented FFP-TF, fiber Fabry-Perot (FFP) Tunable Filter achieves high finesse and maintains low loss in a rugged package.

The key to the simple and elegant design of the FFP tunable filter is the lensless all-fiber construction. There are no collimating optics or lenses, thus with the FFP tunable filter Micron Optics has eliminated the pitfalls of other Fabry-Perot component technologies, including misalignment, environmental sensitivity, and extraneous modes.

An all-fiber Fabry-Perot **super-cavity** in a robust, fast tuning Telcordia qualified package.

The FFP tunable filter follows the Airy function so closely that engineers can design it into the opto-electronic OEM systems knowing that it will provide results that match to the theoretical mathematical model.

For more than two decades, the Micron Optics FFP-TF has proven its capabilities in WDM applications, and has satisfied the ever-increasing performance demands of the telecom market including optical network monitoring, signal conditioning and dynamic networking and transport. Additionally, the filter continually proves itself as the key enabling technology for world-class test instruments.



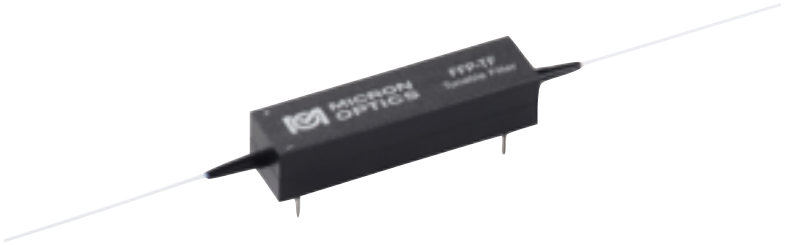
Key Features

All-fiber platform

- **High resolution** and **low loss design**
- **Super-cavity finesse**
- **Vibration** and **shock resistant**
- **Thermally stable**
- **Fast scanning** permits fast, accurate measurements

Ideal for OEM applications

- **Customizable** center wavelength, free spectral range, finesse & bandwidth
- **Center wavelength bands** from 800 to 2000 nm
- **Small** footprint
- **Low power** requirements
- **Telcordia GR 2883** qualified
- **Proven reliability** over decades of use



OEM Applications

- **Optical Coherence Tomography** (see OCT datasheet)
- **Optical performance monitoring**
- **Spectrum analysis**
- **Tunable optical noise filtering**
- **Tunable channel drop for ultra DWDM**
- **Tunable sources**
- **Optical sensing**

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Optical Properties	Standard[1] FFP-TFs				
Operating Wavelength Range	1520-1570 nm	1520-1570 nm	1520-1570 nm	1460-1620 nm	1460-1620 nm
Free Spectral Range[2]	12,500 GHz	15,000 GHz	15,000 GHz	27,500 GHz	27,500 GHz
Finesse	650	1,000	2,000	2,000	10,000
Bandwidth, (FWHM or 3dB)[3]	19 GHz	15 GHz	7.5 GHz	13.8 GHz	2.8 GHz
Insertion Loss	< 2.5 dB	< 3 dB	< 3 dB	< 3 dB	< 4 dB
Polarization Dependent Loss	< 0.2 dB				
Input Power	50 mW	30 mW	15 mW	15 mW	3 mW
Electrical Properties					
Tuning Voltage/FSR	< 12 V				
Tuning Rate/FSR[4]	2,500 Hz				
Capacitance	< 3 uF				
Tuning Voltage, Maximum	70 V				
Mechanical Properties					
Dimension; Weight	12.7 mm x 14.3 mm x 57.2 mm; 28 g				
Mounting Holes	(4) #1-72 UNF x 0.16" deep				
Cable Jacket	900 um loose buffer tubing				
Cable Length	~ 1 m				
Environmental Properties[5]					
Operating Temperature	-20 to 80 C				
Change in Voltage	< 12 V				
Change in Insertion Loss	< 0.5 dB				

Custom and OEM Options

Contact Micron Optics for configuration details

Wavelength bands: from 800 to 2000 nm

Free spectral range[2]: 100 to 27,500 GHz

Finesse: up to 16,000

Bandwidth[3]: from MHz to GHz

Ordering Information

FFP-TF wwww-wwww-bbbu-fffff-ii-ccc

wwww	Operating wavelength range For example, 1520-1570	
bbb	Bandwidth For example, 015 = 15 GHz	
u	Bandwidth unit	
	G	GHz
	M	MHz
fffff	Finesse For example, 01000 = finesse of 1000	
ii	Insertion loss For example, 2.5 = 2.5 dB loss	
ccc	000	Unconnectorized
	061	FC/APC (fusion spliced)
	063	SC/APC (fusion spliced)
	065	FC/APC (connectorized)
	070	Side terminal configuration

Notes

1. Standard specifications are fixed configurations. Please contact Micron Optics for custom specifications.
2. FSRs are fixed but customizable within these ranges.
3. Bandwidth tolerances are typically +/-20%
4. Tuning rate/FSR are recommended maximums. Experimental rates of >200 KHz have been achieved on the FFP-TF.
5. Complies to Telcordia GR 2883.

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1852 Century Place NE
Atlanta, GA 30345 USA
www.micronoptics.com