

FFP-I

Fiber Fabry-Perot Interferometer

Micron Optics' FFP-I, Fiber Fabry-Perot Interferometer family of products is based on a fixed interferometer design with smooth, uniformly spaced transmission peaks.

FFPI

The FFP-I consists of a lensless, plane Fabry-Perot Interferometer with a single-mode optical fiber waveguide between two highly reflective multilayer mirrors. The FFP-I is manufactured directly with optical fibers so no alignment or mode-matching is required. The free spectral range (FSR) may be manufactured exactly to customer specifications and a TEC package is available for thermal stability and minor adjustments of center bandpass frequency.

picoWave®

The picoWave® is Micron Optics' patented multi-wavelength reference that enables real time wavelength calibration to picometer accuracy. Combining the uniform frequency spacing of the FFP-I, a wavelength marker of a Fiber Bragg Grating, and a built-in TEC for thermal stability, the picoWave® makes an ideal calibrated wavelength reference. The FFP-I and FBG can be configured in Series or in Parallel.



Key Features

- Spectrum Sliced Source
- ITU filter
- Calibrated Wavelength Reference
- Laser Stabilization
- WDM Emulation
- Optical Sensing

OEM Applications

- Optical Performance Monitoring
- Spectrum Analysis
- Tunable Optical Noise Filtering
- Tunable Channel Drop for Ultra DWDM
- Tunable Sources
- Optical Sensing

Properties

Performance Properties		
Optical Properties	FFP-I	picoWave®
Operating wavelength range ¹	1260 - 1620 nm	
Free spectral range	0.01 - 10,000 GHz	10 - 100 GHz
Finesse	10, 40, 100, 200, 500, 1000, 2000	10
Bandwidth (FWHM or 3dB)	FSR/Finesse	
Insertion loss ²	< 3.0 dB	
Maximum input power ³	100 mW (for finesse < 200)	
Thermal coefficient	~ 1.6 GHz/C	n/a
Wavelength marker placement	n/a	User defined
Electrical Properties (Optional for FFP-I with FSR > 10 GHz, standard for picoWave®)		
TEC	Melcor Epoxy Filler 04OT2.0-30-F2-EP	
TEC drive current	< 2 A	
TEC Q_{max} ($T_H = 25\text{ °C}$)	< 4 W	
TEC V_{max} ($T_H = 25\text{ °C}$)	< 3.4 V	
TEC ΔT_{max} ($T_H = 25\text{ °C}$)	67 C	
Thermistor	10 K Ω NTC	
Thermal tuning speed	1 GHz/sec, typical	
Stability	+/- 0.125 GHz, laboratory conditions	
FSR variation over tuning range	0.05% of FSR	

Ordering Information

FFP-I-**www** - **bbb** u - **fff** - **ii** - **ccc**

www 1310 (1260-1360 nm)
 1550 (1520-1570 nm)
 1420 (1360-1480 nm)
 1600 (1570-1620 nm)
 1500 (1480-1520 nm)
 1580 (1520-1620 nm)

bbb Specify bandwidth
 For example, 040 = 40 GHz

u Bandwidth unit
 G GHz
 M MHz
 K KHz

fff Specify finesse
 For example, 0650 = finesse of 650

ii Specify insertion loss
 For example, 2.5 = 2.5 dB loss

ccc Unconnectorized
 061 FC/APC (fusion spliced)
 063 SC/APC (fusion spliced)
 065 FC/APC (connectorized)
 080 TEC Equipped

Special OEM Options

Contact Luna for configuration details.

Wavelength bands: from 780 to 1640 nm

Finesse: up to 4,000

Bandwidth: from KHz to GHz

ITU Tolerance: from 0.5 to 0.05%

Notes

1. Each useful spectral range defined by mirror pass band.
2. High resolution (BW < 2 GHz) FFP-Is are generally polarization sensitive. However, polarization properties are stable and can be adjusted by a polarization controller at the FFP-I input.
3. Maximum input power level depends on finesse value.



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