Fiber Fabry-Perot Interferometer | FFP-I

Description

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

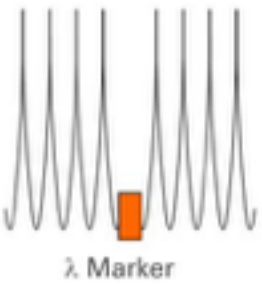
The FFP-I consists of a lensless, plane Fabry-Perot Interferometer with a single-mode optical fiber waveguide between two highly reflective multilayer mirrors. The FFP-I is manufactured directly with optical fibers so no alignment or mode-matching is required. The free spectral range (FSR) may be manufactured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

A **smooth, uniformly spaced λ reference** with or without a **wavelength marker**.

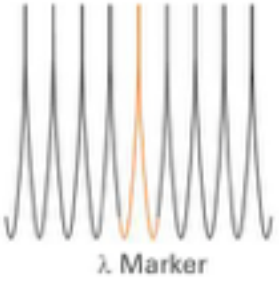
*pico*Wave®

The *pico*Wave® 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 (see diagrams below).

*pico*Wave® (Serial Configuration)



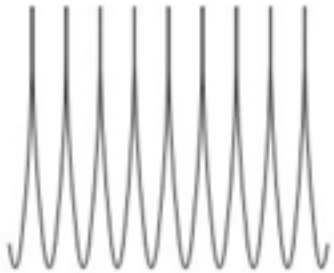
*pico*Wave® (Parallel Configuration)



Key Features

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

FFP-I, FFP-ITU, *pico*Wave®



FFP-I

OEM Applications

- 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	FFP-I	*pico*Wave®
Operating wavelength range[1]	1260 - 1620 nm	
Free spectral range	0.01 to 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 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 *pico*Wave®)	
TEC	Melcor Epoxy Filled 04OT2.0-30-F2-EP
TEC drive current	< 2 A
TEC Q_{max} (T_H= 25 °C)	< 4 W
TEC V_{max} (T_H= 25 °C)	< 3.4 V
TEC ΔT_{max} (T_H= 25 °C)	67 C
Thermistor	10 KΩ NTC
Thermal tuning speed	1 GHz/sec, typical
Stability	+/- 0.125 GHz, laboratory conditions
FSR variation over tuning range	0.05% of FSR

Special OEM Options

Contact Micron Optics

Wavelength Range: 780 - 1640 nm

Finesse: up to 4,000

Bandwidth: from KHz to GHz

ITU Tolerance: from 0.5 to 0.05%

Ordering Information

FFP-I wwww - bbb u ffff - ii - ccc

wwww	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
ffff	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)

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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