

Faraday Rotator Mirror (FRM & NFRM)



The Faraday rotator mirror is a fiber optic polarization rotation mirror designed for fiber optic networks and measurement applications. The state of polarization (SOP) of the reflected light is rotated 90 degrees from that of the input light. A unique property of Faraday rotator mirrors is that at any point along the fiber, the SOPs of the forward going and reflected light are always orthogonal to each other, regardless of the birefringence of the fiber. Therefore, when properly used, the device can help to eliminate polarization sensitivity in optical fiber systems. Applications include eliminating polarization-induced fluctuations in fiber interferometers, Brillouin amplifier systems, fiber laser systems, and fiber optic antenna remoting systems. The FRM's optical path is epoxy free and thus offers low insertion loss and high temperature stability. We also offer the NoTail™ version, which eliminates unwanted optical path delay and pigtail handling problems.

Specifications:

Operating Wavelength	1550 nm, 1310 nm	1064 nm
Operating Bandwidth	±50 nm	±5 nm
Insertion Loss	0.4 dB typical 0.6 dB max.	3.0 dB max.
Faraday Rotation Angle (single pass)	45 degrees	45 degrees
Rotation Angle Tolerance (Center Wavelength at 23 °C)	±2 degrees	±6 degrees
Rotation Angle Wavelength Dependence	-0.14 deg/nm (1550nm) -0.17 deg/nm (1310nm)	-0.26 deg/nm
Rotation Angle Temperature Dependence	-0.13 deg/°C (1550nm) -0.08 deg/°C (1310nm)	-0.14 deg/°C
PDL	0.1 dB	0.1 dB
PMD	0.05 ps	0.05 ps
Optical Power Handling	300 mW min.	150 mW
Operating Temperature	0 to 70 °C	-5 to 50 °C
Storage Temperature	-40 to 85 °C	-40 to 85 °C
Fiber Type	SMF-28	HI 1060 Fiber
Dimensions	Ø 3.8 x 22mm (pigtailed) Ø 9.5 x 50 mm (NoTail™)	Ø 3.8 x 22mm (pigtailed)
Note: Values are referenced without connectors		

Features:

- Compact size
- Low insertion loss
- High stability
- Rugged design
- NoTail™ model available

Applications:

- Polarization sensitivity elimination in:
- Fiber interferometers & sensors
- Fiber laser systems
- Brillouin amplifiers
- Fiber optic antenna remoting systems
- Fiber optic modules

Tech Info:

- [Optical Coherence Tomography Technologies](#)
- [Faraday Rotator Mirror Application Note](#)

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Typical Performance Data:

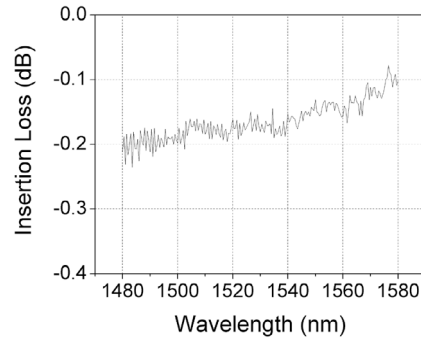
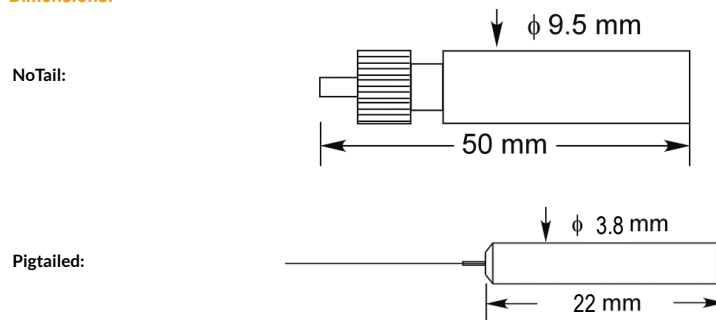
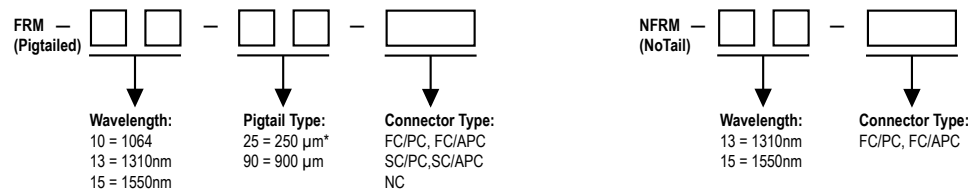


Figure 1. Insertion loss vs. wavelength

Dimensions:



Ordering Information:



Note:
* Connectors not recommended with bare fiber pigtails.