Fiber Optic
Faraday Rotator Mirror

Laser

3 dB coupler

Faraday rotator mirror

Detector

Probe
Fiber Optic Faraday Rotator Mirror

Description

Singlemode fibers by nature are randomly birefringent due to stress caused by bending and uneven pressure. As a result, optical beams traveling in a singlemode fiber experience a random birefringence which would make a fiberoptic Michelson interferometer impossible.

Fortunately, there is a simple remedy, the Faraday rotator mirror. This unique device takes the output beam from a singlemode fiber and rotates the polarization by 90 degrees before sending it back through the same fiber. By doing so, the Faraday mirror functions as a phase conjugate mirror and cancels out any birefringent effects the beam experienced along the forward path.

Specifications

- Wavelength: 1310 or 1550 nm
- Insertion loss: <1.0 dB (0.5 dB typical)
- Polarization rotation accuracy: +/- 2 degrees
- Return loss due to secondary reflections: >55 dB*
- Operating temperature: 0 to 65 °C
- Storage temperature: -40 to 85 °C
- Package Material: Stainless steel
- Fiber type: Singlemode (typically Corning SMF28)
- Fiber jacket type: 900 um tight or loose buffer
- Connector type: FC, SC, ST, LC, FC/APC, SC/APC, or LC/APC
- Dimensions: 6 mm dia x 9 mm length or 4 mm dia x 20 mm length

* Return loss due to reflection off non-mirror surfaces.

Part Number

- FRM4 (4 mm dia)
- 131=1310 nm
- 155=1550 nm
- Fiber 28=SMF28
- FC=FC
- FA=FCAPC