Polarization Maintaining Fiber (PM1550/80*)

Lucent Technologies
Bell Labs Innovations

SPECIALTY FIBER DEVICES

Description

Our PM1550/80 polarization maintaining fiber is designed specifically for use in fiber optic sensors operating in the 1550 nm wavelength region. The reduced fiber diameter of 80 μm and the coating diameter of 165 μm allow tight coiling of the fiber.

Features

- High numerical aperture ensures excellent bending performance
- Stress-induced birefringence yields low polarization crosstalk
- Easy to splice

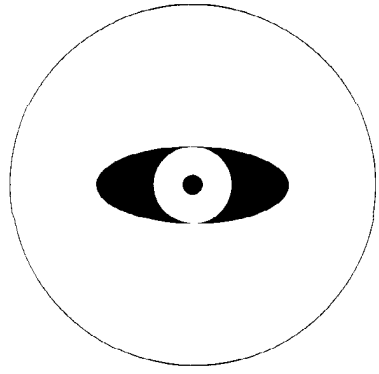
The dual layer coating ensures:

- Low loss fibers
- Excellent temperature performance from -55 to +105 °C
- High fiber strength

Physical Characteristics

Fiber Diameter	80 ±2 μm
Coating Diameter[1]	165 ±10 μm
Core Eccentricity	<1.0 μm
Proof Test	1%

[1] Different diameter specification available on request



PM fiber design

Optical Specifications

Mode field diameter[1]	6.5 ± 0.5 μm
Numerical Aperture	0.19
Cutoff Wavelength	< 1540 nm
Attenuation[2]	< 3 dB/km
Birefringence[2]	$> 5.4 \cdot 10^{-4}$
Beat Length[2]	< 2.9 mm
h-parameter[3]	$< 10^{-5}$ m^{-1}

[1] At 1550 nm; Petermann II Def.

[2] Measured at 1550 nm

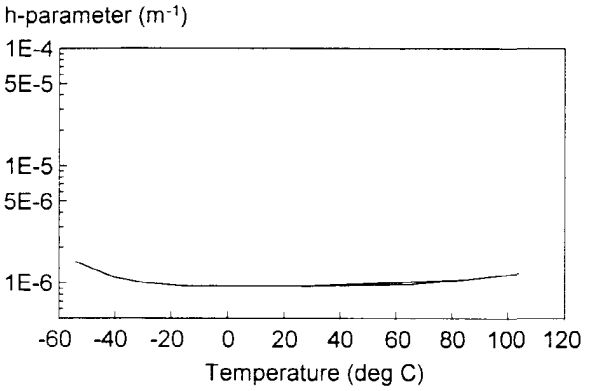
[3] The h-parameter expresses the rate at which power is coupled between two polarization axes of the fiber. The polarization crosstalk after a length, l, is found from $Py/Px = 10 \cdot \log(h \cdot l)$. An h-parameter of $< 10^{-5}$ m^{-1} corresponds to a crosstalk of <-30 dB for a 100 m length.

Related Product Data Sheets

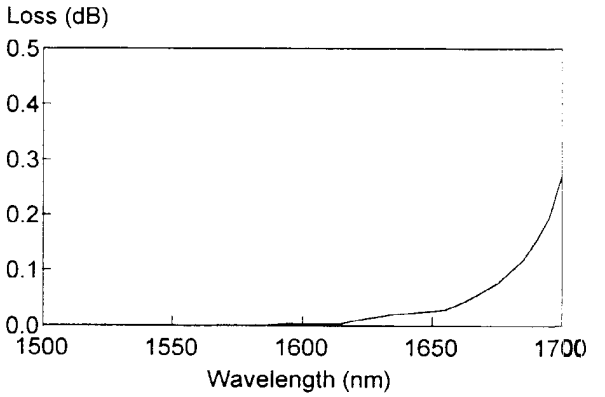
PM830/80 Polarization Maintaining Fiber

R37PM01 Erbium-doped Polarization Maintaining Fiber

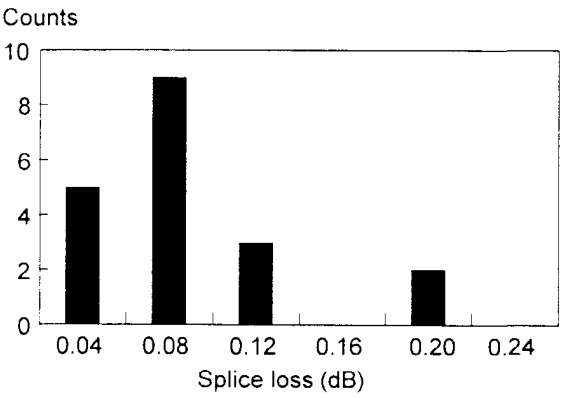
* PM1550/80 Polarization Maintaining Fiber was formerly offered under the LYCOM brand name



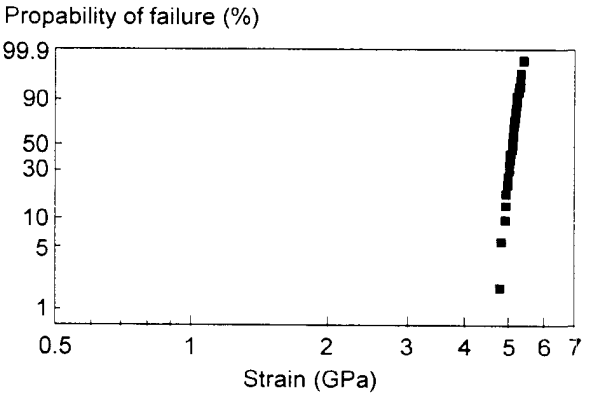
Temperature characteristic of the h-parameter.



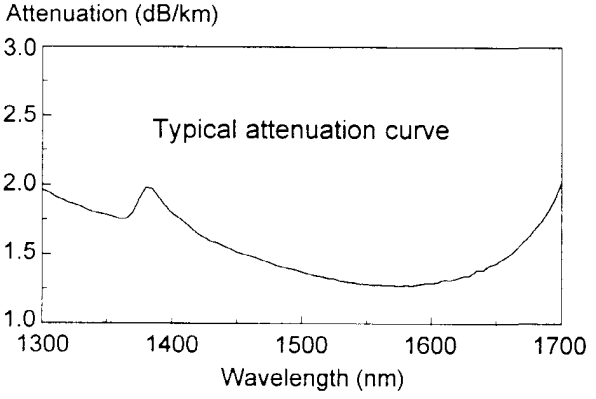
Additional macro-bend loss for 20 turns of fiber wound around a 12.7 mm diameter mandrel.



Splice loss distribution at 1550 nm. The average splice loss is 0.07 dB and the standard deviation is 0.05 dB.



Dynamic tensile strength measured according to EIA-455-28B. Median tensile strength is 5.1 GPa.



Ordering Information

When ordering, please specify the fiber length (meters) and fiber comcode 107993321

For more information or for technical assistance, please contact the Specialty Fiber Devices group at:

	U.S. location	Denmark location
Phone:	1-800-364-6404	(+45) 4345 8888
Fax:	(908)582-2422	(+45) 4345 5373

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