



Polarization Maintaining Telecommunication Fibers

The breadth of Nufern's range of Polarization Maintaining fibers is unrivaled. Designed for use from 980 to 1620 nm, these fibers are used in all PM applications for data and telecom. Nufern has applied its unique manufacturing facility and capabilities to this product area and has made substantial optical, mechanical and geometrical tolerance improvements. Furthermore, higher strength and fatigue failure resistance allows customers to achieve more uniform product results and to attain the highest possible manufacturing yields.

Typical Applications

- Lithium niobate modulators, PMD compensators
- Raman gain modules
- Pigtailling

Features & Benefits

- Tight specifications — Highly deterministic results, highest product yield
- High proof test — Low risk of mechanical handling failure
- High fatigue failure resistance — Longest service life

Optical Specifications

Operating Wavelength (nominal)
Mode Field Diameter
Second Mode Cut-Off
Attenuation
Normalized Cross Talk
Normalized Cross Talk (nominal)
Beat Length

PM980-XP

970 - 1550 nm
6.6 ± 0.7 μm @ 980 nm
920 ± 50 nm
≤ 2.5 dB/km @ 980 nm
≤ -40 dB at 4 m
≤ -30 dB at 100 m
≤ 2.7 mm @ 980 nm

PM1300-HP

1280 - 1340 nm
9.5 ± 1.0 μm @ 1300 nm
1200 +/- 70 nm
≤ 1 dB/km @ 1300 nm
≤ -40 dB at 4 m
≤ -30 dB at 100 m
≤ 4.0 mm @ 1300 nm

PM14XX-HP

1400-1490 nm
9.8 ± 0.8 μm @ 1450 nm
1320 ± 60 nm
≤ 1 dB/km @ 1450 nm
≤ -40 dB at 4 m
≤ -30 dB at 100 m
≤ 4.7 mm @ 1450 nm

PM1550-HP

1490-1620 nm
10.5 ± 0.8 μm @ 1550 nm
1370 ± 70 nm
≤ 1.0 dB/km @ 1550 nm
≤ -40 dB at 4 m
≤ -30 dB at 100 m
≤ 5.0 mm @ 1550 nm

Geometrical & Mechanical Specifications

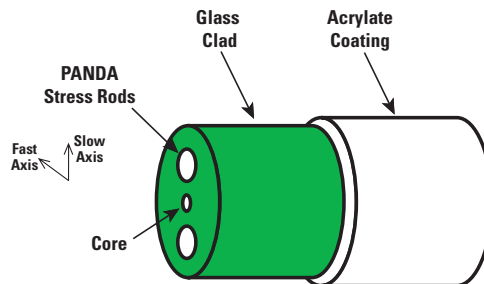
Clad Diameter
Coating Diameter
Core-Clad Concentricity
Coating/Clad Offset
Coating Material
Operating Temperature
Proof Test Level

125 ± 1 μm
245 ± 15 μm
< 0.5 μm
≤ 5 μm
UV Cured, Dual Acrylate
- 40 to + 85°C
≥ 200 kpsi (1.4 GN/m²)

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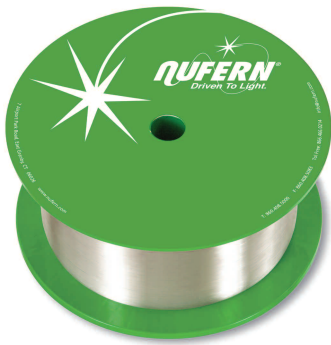


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Polarization Maintaining Low Loss Coupler Fibers

Nufern's broad line of PM fibers now includes PM980C-HP & PM14XXC-HP coupler fibers. Components designed with these new coupler fibers exhibit insertion losses up to one order of magnitude better than was previously possible. These fibers also demonstrate superior polarization control in coupler applications, resulting in increased system and network efficiencies.

Typical Applications

- Couplers and combiners
- Pump combiners
- Raman gain modules

Features & Benefits

- Dramatically reduced insertion loss — Lower system cost
- High proof test (200kpsi) — Low risk of mechanical handling failure
- High fatigue failure resistance — Longest service life

Optical Specifications

Operating Wavelength (nominal)
 Mode Field Diameter
 Second Mode Cut-Off
 Normalized Cross Talk
 Normalized Cross Talk (nominal)

PM980C-HP

980 nm
 $6.6 \pm 1.0 \mu\text{m}$ @ 980 nm
 $900 \pm 70 \text{ nm}$
 $\leq -37 \text{ dB at } 2 \text{ m}$
 $\leq -20 \text{ dB at } 100 \text{ m}$

PM14XXC-HP

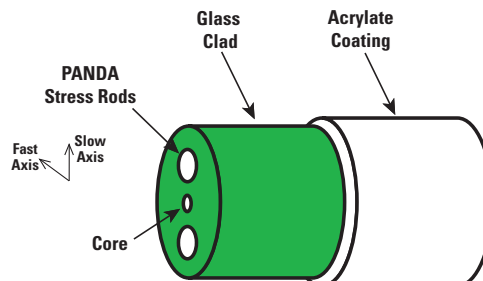
1400-1490 nm
 $9.8 \pm 0.8 \mu\text{m}$ @ 1450 nm
 $1320 \pm 60 \text{ nm}$
 $\leq -37 \text{ dB at } 2 \text{ m}$
 $\leq -20 \text{ dB at } 100 \text{ m}$

Geometrical & Mechanical Specifications

Clad Diameter
 Coating Diameter
 Core-Clad Concentricity
 Coating/Clad Offset
 Coating Material
 Operating Temperature
 Proof Test Level

$125 \pm 1 \mu\text{m}$
 $245 \pm 15 \mu\text{m}$
 $< 0.5 \mu\text{m}$
 $\leq 5 \mu\text{m}$
 UV Cured, Dual Acrylate
 $-40 \text{ to } +85^\circ\text{C}$
 $\geq 200 \text{ kpsi (1.4 GN/m}^2\text{)}$

$125 \pm 1 \mu\text{m}$
 $245 \pm 15 \mu\text{m}$
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Polarization Maintaining Telecommunication Fibers with 400 μm Coating

The breadth of Nufern's range of Polarization Maintaining fibers is unrivaled. Designed for use from 980 to 1620 nm with 400 μm dual acrylate coating, these fibers are used in PM applications for data and telecom. Nufern has applied its unique manufacturing facility and capabilities to this product area and has made substantial optical, mechanical and geometrical tolerance improvements. Furthermore, higher strength (prooftested to > 200 kpsi) and improved fatigue failure resistance allows customers to achieve more uniform product results and to attain the highest possible manufacturing yields.

Typical Applications

- Lithium niobate modulators, PMD compensators
- Raman gain modules
- Pigtailling

Features & Benefits

- Tight specifications — Highly deterministic results, highest product yield
- High fatigue failure resistance — Longest service life
- High proof test — Low risk of mechanical handling failure
- Robust 400 μm dual acrylate coating
- All fiber proof tested to > 200 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications

	PM980-400	PM1300-400	PM14XX-400	PM1550-400
Operating Wavelength	970 – 1550 nm	N/A	1390 – 1625 nm	1490 – 1620 nm
Operating Wavelength (nominal)	N/A	1300 nm	N/A	N/A
Core NA	0.120	0.120	0.125	0.125
Mode Field Diameter	6.6 \pm 0.7 μm @ 980 nm	9.0 \pm 0.5 μm @ 1300 nm	9.8 \pm 0.5 μm @ 1450 nm	10.5 \pm 0.5 μm @ 1550 nm
Cutoff	920 \pm 50 nm	1200 \pm 70 nm	1320 \pm 60 nm	1370 \pm 70 nm
Core Attenuation	\leq 2.5 dB/km @ 980 nm	\leq 1.0 dB/km @ 1300 nm	\leq 1.0 dB/km @ 1450 nm \leq 1.0 dB/km @ 1550 nm	\leq 1.0 dB/km @ 1550 nm
Beat Length	\leq 2.7 mm @ 980 nm	\leq 4 mm @ 1300 nm	\leq 4.7 mm @ 1450 nm	\leq 5.0 mm @ 1550 nm
Normalized Cross Talk	\leq -40.0 dB at 4 m @ 980 nm \leq -30.0 dB at 100 m @ 980 nm	\leq -40.0 dB at 4 m @ 1300 nm \leq -30.0 dB at 100 m @ 1300 nm	\leq -40.0 dB at 4 m @ 1550 nm \leq -30.0 dB at 100 m @ 1550 nm	\leq -40.0 dB at 4 m @ 1550 nm

Geometrical & Mechanical Specifications

Cladding Diameter	125.0 \pm 1.0 μm	125.0 \pm 1.0 μm	125.0 \pm 1.0 μm	125.0 \pm 1.0 μm
Core Diameter	5.5 μm	8.0 μm	8.0 μm	8.0 μm
Coating Diameter	400.0 \pm 15.0 μm	400.0 \pm 15.0 μm	400.0 \pm 15.0 μm	400.0 \pm 15.0 μm
Core/Clad Offset	\leq 0.50 μm	\leq 0.50 μm	\leq 0.50 μm	\leq 0.50 μm
Operating Temperature Range	-40 to 85 $^{\circ}\text{C}$	-40 to 85 $^{\circ}\text{C}$	-40 to 85 $^{\circ}\text{C}$	-40 to 85 $^{\circ}\text{C}$
Proof Test Level	\geq 200 kpsi (1.4 GN/m ²)	\geq 200 kpsi (1.4 GN/m ²)	\geq 200 kpsi (1.4 GN/m ²)	\geq 200 kpsi (1.4 GN/m ²)

These fibers are also available with 250 μm coating.



Standard specifications and design parameters are listed above. Specifications are subject to change without notice. Other configurations such as alternative form factors, optimized cut-off and UV cured color coating may be available. Let us know how Nufern can assist with your requirements.

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