

Corning® SMF-28® Ultra 200 Optical Fiber

Product Information



Leveraging Corning® SMF-28® Ultra optical fiber technology, Corning® SMF-28® Ultra 200 optical fiber is a full-spectrum fiber with a reduced coating diameter of 200 microns and enhanced optical bending performance compared to legacy single-mode fiber. This fiber features low attenuation, a 9.2 micron nominal mode-field diameter at 1310 nm, and is intended for use in miniaturized cabling applications. SMF-28® Ultra 200 fiber surpasses the requirements of ITU-T Recommendations G.657.A1 and G.652.D and is fully backwards compatible with legacy G.652 compliant fiber types.

Optical Specifications

Maximum Attenuation

Wavelength (nm)	Maximum Value* (dB/km)
1310	≤ 0.32
1383**	≤ 0.32
1490	≤ 0.21
1550	≤ 0.18
1625	≤ 0.20

* Alternate attenuation offerings available upon request.

** Attenuation values at this wavelength represent post-hydrogen aging performance.

Attenuation vs. Wavelength

Range (nm)	Ref. λ (nm)	Max. α Difference (dB/km)
1285 – 1330	1310	0.03
1525 – 1575	1550	0.02

The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength (λ) by more than the value α .

Macrobend Loss

Mandrel Radius (mm)	Number of Turns	Wavelength (nm)	Induced Attenuation* (dB)
10	1	1550	≤ 0.50
10	1	1625	≤ 1.5
15	10	1550	≤ 0.05
15	10	1625	≤ 0.30
25	100	1310, 1550, 1625	≤ 0.01

*The induced attenuation due to fiber wrapped around a mandrel of a specified radius.

Point Discontinuity

Wavelength (nm)	Point Discontinuity (dB)
1310	≤ 0.05
1550	≤ 0.05

Cable Cutoff Wavelength (λ_{cc})

$\lambda_{cc} \leq 1260$ nm

Mode-Field Diameter

Wavelength (nm)	MFD (μ m)
1310	9.2 ± 0.4
1550	10.4 ± 0.5

Dispersion

Wavelength (nm)	Dispersion Value [ps/(nm·km)]
1550	≤ 18.0
1625	≤ 22.0

Zero Dispersion Wavelength (λ_0): 1304 nm ≤ λ_0 ≤ 1324 nm

Zero Dispersion Slope (S_0): $S_0 \leq 0.092$ ps/(nm²·km)

Polarization Mode Dispersion (PMD)

	Value (ps/√km)
PMD Link Design Value	≤ 0.04*
Maximum Individual Fiber PMD	≤ 0.1

*Complies with IEC 60794-3: 2001, Section 5.5, Method 1, (m = 20, Q = 0.01%), September 2001.

The PMD link design value is a term used to describe the PMD of concatenated lengths of fiber (also known as PMD₀). This value represents a statistical upper limit for total link PMD. Individual PMD values may change when fiber is cabled.

How to Order

Contact your sales representative, or call the Optical Fiber Customer Service Department:
 Ph: 1-607-248-2000 (U.S. and Canada)
 +44-1244-525-320 (Europe)
 Email: cofic@corning.com
 Please specify the fiber type, attenuation, and quantity when ordering.



Dimensional Specifications

Glass Geometry		Coating Geometry	
Fiber Curl	≥ 4.0 m radius of curvature	Coating Diameter	200 ± 5 μm
Cladding Diameter	125.0 ± 0.7 μm	Coating-Cladding Concentricity	≤ 10 μm
Core-Clad Concentricity	≤ 0.5 μm		
Cladding Non-Circularity	$\leq 0.7\%$		

Environmental Specifications

Environmental Test	Test Condition	Induced Attenuation
		1310 nm, 1550 nm, and 1625 nm (dB/km)
Temperature Dependence	-60°C to +85°C*	≤ 0.05
Temperature Humidity Cycling	-10°C to +85°C up to 98% RH	≤ 0.05
Water Immersion	23°C \pm 2°C	≤ 0.05
Heat Aging	85°C \pm 2°C	≤ 0.05
Damp Heat	85°C at 85% RH	≤ 0.05

*Reference temperature = +23°C

Operating Temperature Range: -60°C to +85°C

Mechanical Specifications

Proof Test

The entire fiber length is subjected to a tensile stress ≥ 100 kpsi (0.69 GPa).*

*Higher proof test levels available.

Length

Fiber lengths available up to 50.4 km/spool.

Performance Characterizations

Characterized parameters are typical values.

Core Diameter	8.2 μm
Numerical Aperture	0.14 NA is measured at the one percent power level of a one-dimensional far-field scan at 1310 nm
Zero Dispersion Slope (S_0)	0.088 ps/(nm ² *km)
Effective Group Index of Refraction (N_{eff})	1310 nm: 1.4676 1550 nm: 1.4682
Fatigue Resistance Parameter (N_d)	20
Coating Strip Force	Dry: 0.5 lbs. (2N) Wet, 14-day room temperature: 0.5 lbs. (2N)
Rayleigh Backscatter Coefficient (for 1 ns Pulse Width)	1310 nm: -77dB 1550 nm: -82dB