

# Corning® ClearCurve® ZBL Optical Fiber

## Product Information



### Bend Performance and Compatibility

Corning® ClearCurve® ZBL optical fiber delivers the best macrobending performance in the industry while maintaining compatibility with current optical fibers, equipment, practices and procedures. This full-spectrum single-mode optical fiber, when subjected to smaller radii bends, experiences virtually no signal loss. ClearCurve ZBL fiber exceeds the most stringent bend performance requirements of ITU-T Recommendation G.652.D and the installed base of SMF-28e® and SMF-28e+® fibers. Now network planners and designers are able to design optical fiber into much more challenging installations and environments; cable designers can offer optical cables with an unmatched ruggedness for easier installation and handling.

### Optical Specifications

#### Maximum Attenuation

Wavelength (nm)	Maximum Value* (dB/km)
1310	≤ 0.35
1383**	≤ 0.35
1490	≤ 0.24
1550	≤ 0.20
1625	≤ 0.23

\* 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)
5	1	1550	≤ 0.10
5	1	1625	≤ 0.30

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

#### Point Discontinuity

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

#### Cable Cutoff Wavelength (λ<sub>cc</sub>)

$$\lambda_{cc} \leq 1260 \text{ nm}$$

#### Mode-Field Diameter

Wavelength (nm)	MFD (μm)
1310	8.6 ± 0.4
1550	9.65 ± 0.5

#### Dispersion

Wavelength (nm)	Dispersion Value [ps/(nm·km)]
1550	≤ 18.0
1625	≤ 23.0

Zero Dispersion Wavelength (λ<sub>0</sub>): 1304 nm ≤ λ<sub>0</sub> ≤ 1324 nm

Zero Dispersion Slope (S<sub>0</sub>): ≤ 0.092 ps/(nm<sup>2</sup>·km)

#### Polarization Mode Dispersion (PMD)

	Value (ps/√km)
PMD Link Design Value	≤ 0.06*
Maximum Individual Fiber PMD	≤ 0.2

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

The link design value is a term used to describe the PMD of concatenated lengths of fiber (also known as PMD<sub>0</sub>). 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](mailto:cofic@corning.com)

Please specify the fiber type, attenuation, and quantity when ordering.



## Dimensional Specifications

Glass Geometry		Coating Geometry	
Fiber Curl	$\geq 4.0$ m radius of curvature	Coating Diameter	$242 \pm 5$ $\mu\text{m}$
Cladding Diameter	$125.0 \pm 0.7$ $\mu\text{m}$	Coating-Cladding Concentricity	$< 12$ $\mu\text{m}$
Core-Clad Concentricity	$\leq 0.5$ $\mu\text{m}$		
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	$-60^{\circ}\text{C}$ to $+85^{\circ}\text{C}^*$	$\leq 0.05$
Temperature Humidity Cycling	$-10^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ up to 98% RH	$\leq 0.05$
Water Immersion	$23^{\circ}\text{C} \pm 2^{\circ}\text{C}$	$\leq 0.05$
Heat Aging	$85^{\circ}\text{C} \pm 2^{\circ}\text{C}$	$\leq 0.05$
Damp Heat	$85^{\circ}\text{C}$ at 85% RH	$\leq 0.05$

\*Reference temperature =  $+23^{\circ}\text{C}$

Operating Temperature Range:  $-60^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

## Mechanical Specifications

### Proof Test

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

\*Higher proof test levels available.

### Length

Fiber lengths available up to 25.2 km/spool.

## Performance Characterizations

Characterized parameters are typical values.

Numerical Aperture	1310 nm: 0.14
Effective Group Index of Refraction ( $N_{\text{eff}}$ )	1310 nm: 1.4670 1550 nm: 1.4677
Fatigue Resistance Parameter ( $N_d$ )	20
Coating Strip Force	Dry: 0.6 lbs. (3N)
Rayleigh Backscatter Coefficient (for 1 ns Pulse Width)	1310 nm: -77 dB 1550 nm: -82 dB