

# Corning® ClearCurve® LBL Optical Fiber

## Product Information



Corning® ClearCurve® LBL optical fiber is a full-spectrum fiber with enhanced macrobend performance compared to traditional bend-improved single-mode fibers. ClearCurve LBL fiber exceeds the ITU-T Recommendation G.657.A2/B2 and remains fully compliant with ITU-T Recommendation G.652.D. ClearCurve LBL fiber is compatible with the installed base of Corning® SMF-28e® and SMF-28e+® fibers.

### 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. $\lambda$ (nm)	Max. $\alpha$ 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 ( $\lambda$ ) by more than the value  $\alpha$ .

#### Macrobend Loss

Mandrel Radius (mm)	Number of Turns	Wavelength (nm)	Induced Attenuation* (dB)
7.5	1	1550	≤ 0.4
7.5	1	1625	≤ 0.8

\*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 ( $\lambda_{cc}$ )

$\lambda_{cc} \leq 1260$  nm

#### Mode-Field Diameter

Wavelength (nm)	MFD ( $\mu$ m)
1310	8.6 ± 0.4
1550	9.6 ± 0.5

#### Dispersion

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

Zero Dispersion Wavelength ( $\lambda_0$ ): 1304 nm ≤  $\lambda_0$  ≤ 1324 nm

Zero Dispersion Slope ( $S_0$ ): ≤ 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>Q</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

Fiber Curl	$\geq 4.0$ m radius of curvature
Cladding Diameter	$125.0 \pm 0.7$ $\mu\text{m}$
Core-Clad Concentricity	$\leq 0.5$ $\mu\text{m}$
Cladding Non-Circularity	$\leq 0.7\%$

### Coating Geometry

Coating Diameter	$242 \pm 5$ $\mu\text{m}$
Coating-Cladding Concentricity	$< 12$ $\mu\text{m}$

## 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 50.4 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