

# Corning® LEAF® Optical Fiber

## Product Information

CORNING

Corning® LEAF® optical fiber is the world's best and most widely deployed non-zero dispersion-shifted fiber (NZDSF). Typically deployed in non-coherent long-haul and metro networks, LEAF fiber combines low dispersion and low loss. This enables improved performance, flexibility, and compatibility with emerging network technologies. LEAF fiber has industry-leading performance specifications, including the lowest attenuation of any NZDSF product, and maintains compliance with Recommendation ITU-T G.655.D.

### Optical Specifications

#### Maximum Attenuation

| Wavelength (nm) | Maximum Value* (dB/km) |
|-----------------|------------------------|
| 1383            | ≤ 0.4                  |
| 1410            | ≤ 0.32                 |
| 1450            | ≤ 0.26                 |
| 1550            | ≤ 0.19                 |
| 1625            | ≤ 0.21                 |

#### Attenuation vs. Wavelength

| Range (nm)  | Ref. λ (nm) | Max. α Difference (dB/km) |
|-------------|-------------|---------------------------|
| 1525 – 1575 | 1550        | 0.02                      |
| 1550 – 1625 | 1550        | 0.03                      |

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) |
|---------------------|-----------------|-----------------|---------------------------|
| 16                  | 1               | 1550, 1625      | ≤ 0.50                    |
| 30                  | 100             | 1550, 1625      | ≤ 0.05                    |

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

#### Point Discontinuity

| Wavelength (nm) | Point Discontinuity (dB) |
|-----------------|--------------------------|
| 1550            | ≤ 0.05                   |

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

λ<sub>cc</sub> ≤ 1360 nm

#### Mode Field Diameter

| Wavelength (nm) | Mode Field Diameter (μm) |
|-----------------|--------------------------|
| 1550            | 9.6 ± 0.4                |

#### Dispersion

| Wavelength (nm) | Dispersion Value [ps/(nm·km)] |
|-----------------|-------------------------------|
| 1530            | 2.0 – 5.5                     |
| 1565            | 4.5 – 6.0                     |
| 1625            | 5.8 – 11.2                    |

#### Polarization Mode Dispersion (PMD)

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

\*Complies with ITU-T G.650-2 Appendix IV, (m = 20, Q = 0.01%), August 2015.

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

#### ColorPro® Identification Technology

LEAF fiber is also available in colored variants, enabled by ColorPro® identification technology. Corning fibers with ColorPro® identification technology deliver better efficiency in cable manufacturing, simplify inventory management, and leverage an enhanced fiber product offering.

#### How to Order

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

### Dimensional Specifications

#### Glass Geometry

|                          |                             |
|--------------------------|-----------------------------|
| Fiber Curl               | ≥ 4.0 m radius of curvature |
| Cladding Diameter        | 125.0 ± 0.7 μm              |
| Core-Clad Concentricity  | ≤ 0.5 μm                    |
| Cladding Non-Circularity | ≤ 0.7%                      |

#### Coating Geometry

|                                |            |
|--------------------------------|------------|
| Coating Diameter               | 242 ± 5 μm |
| Coating-Cladding Concentricity | < 12 μm    |



## Environmental Specifications

| Environmental Test           | Test Condition              | Induced Attenuation<br>1550 nm and 1625 nm<br>(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 ± 2°C                  | ≤ 0.05  |
| Heat Aging                   | 85°C ± 2°C                  | ≤ 0.05  |
| Damp Heat                    | 85°C at 85% RH              | ≤ 0.05  |

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

\*Reference temperature = +23°C

## Mechanical Specifications

### Proof Test

The entire fiber length is subjected to a tensile stress ≥ 100 kpsi (0.69 GPa). Higher proof test levels are available.

### Length

Fiber lengths available up to 50.4 km/spool.

## Performance Characterizations

Characterized parameters are typical values.

|  |  |
|--|--|
| Numerical Aperture   | 0.14<br>NA is measured at the one percent power level of a one-dimensional far-field scan at 1550 nm |
| Effective Area ( $A_{eff}$ )                               | 1550 nm: 72 $\mu\text{m}^2$  |
| Effective Group Index of Refraction ( $n_{eff}$ )          | 1550 nm: 1.4693  |
| Fatigue Resistance Parameter ( $n_f$ )                     | 20   |
| Coating Strip Force  | Dry: 0.6 lbs. (3 N)<br>Wet, 14-day room temperature: 0.6 lbs. (3 N)                                  |
| Rayleigh Backscatter Coefficient<br>(for 1 ns Pulse Width) | 1550 nm: -81 dB<br>1625 nm: -82 dB   |
| Chromatic Dispersion                                       | 4 ps/(nm•km) at 1550 nm<br>10 ps/(nm•km) at 1625 nm  |

### Spectral Attenuation (Typical Fiber)

| Wavelength (nm) | Attenuation (dB/km) |
|-----------------|---------------------|
| 1383            | 0.33                |
| 1410            | 0.27                |
| 1450            | 0.23                |
| 1550            | 0.19                |
| 1625            | 0.20                |

