

Corning® Multimode Optical Fiber

InfiniCor™ 600 Fiber

Product Information

CORNING

PI1207
Issued: 10/99
ISO 9001 Registered

High Performance. Guaranteed.

InfiniCor™ 600 fiber is part of Corning's line of high-performance multimode fibers. InfiniCor fiber is engineered specifically for high-performance laser-based LAN protocols such as Gigabit Ethernet. InfiniCor 600 fiber is guaranteed⁽¹⁾ for transmission distances up to 600 meters in Gigabit Ethernet (IEEE 802.3z) compliant systems at both 850 nm and 1300 nm. InfiniCor 600 fiber can operate at significantly greater distances (greater than 2,000 meters) at slower protocols such as Fast Ethernet, FDDI, and 155 Mb/s ATM.

Ultimate Compatibility

InfiniCor fiber ensures compatibility with legacy LAN systems by exceeding the minimum overfilled launch bandwidth (OFLBW) standard (EIA/TIA 568-A) in the 850 nm and 1300 nm operating windows. In addition, it guarantees Gigabit Ethernet performance by guaranteeing operating distance in standards-compliant systems. The traditional OFLBW specification is a measure of relative fiber performance capability when used with light-emitting diode (LED) sources. Laser performance represents link length capability with high-speed sources such as 850 nm vertical-cavity surface-emitting lasers (VCSELs), 1300 nm Fabry-Perot lasers, and 780 nm CD lasers.

Corning InfiniCor 600 fiber operates with a

wide range of sources at 850 nm and 1300 nm. InfiniCor 600 fiber is a nominal 50/125 µm graded-index multimode fiber design that is guaranteed to be system-compatible with the installed base of standard 62.5/125 µm fiber. InfiniCor 600 fiber also is system-compatible with standard 50/125 µm fiber and with the advanced InfiniCor 300 fiber for all standards-compliant links.⁽²⁾

Perfect For All Premises Applications

InfiniCor 600 fiber is suitable for installation in all premises applications including the backbone, riser, and horizontal. Typical applications are local area and campus-wide networks carrying data, voice, and/or video services using LEDs, 850 nm VCSELs, 780 nm CD lasers, and 1300 nm Fabry-Perot lasers. This product exceeds industry standards for fiber-optic network protocols, including Ethernet, Token Ring, FDDI, ATM, and Fibre Channel.

InfiniCor 600 fiber's excellent laser performance makes it a perfect choice for Gigabit Ethernet and other high-speed laser protocols. Since Gigabit Ethernet is expected to be the protocol of choice for backbone and riser links, Corning recommends InfiniCor 600 fiber for these applications.

Everything You Need In A Premises Fiber

- Higher data rates
- Longer transmission distances
- Upgradeability
- Increased power budget

InfiniCor 600 fiber comes with an advanced mechanically strippable acrylate coating (CPC6) with a 245 μm nominal outside diameter. It may be overcoated for use in tight buffer, loose tube and ribbon cable designs. The CPC6 coating provides superior protection of the glass fiber while allowing excellent stripping performance.

⁽¹⁾ Corning guarantees that InfiniCor fiber will perform up to its guaranteed link length for Gigabit Ethernet (IEEE 802.3z) speeds under associated cabling warranty programs. This guarantee applies only to links that are covered by a Corning-approved warranty program. The warranty program is implemented and serviced through various cable manufacturers. Actual warranty terms may vary from cabling to cabling.

⁽²⁾ 10 Mb/s Ethernet link lengths are limited to 1,000 meters when mixing 50 μm and 62.5 μm fiber. Other standard-based link lengths are unaffected. See cabling warranty for specific compatibility guarantee.

Optical Specifications

Performance

- LED-based sources: 500/500 MHz•km @ 850/1300 nm based on overfilled launch conditions
- Laser-based sources: Laser performance is guaranteed to achieve 600/600 meters @ 850/1300 nm for Gigabit Ethernet (IEEE 802.3z) standard-compliant links

Attenuation

$\leq 2.5/0.8$ dB/km @ 850/1300 nm

- No point discontinuity greater than 0.2 dB
- The attenuation at 1380 nm does not exceed the attenuation at 1300 nm by more than 3.0 dB/km
- The induced attenuation caused by wrapping the fiber 100 turns around a 75 mm mandrel shall not exceed 0.5 dB at 850 nm and 1300 nm

Chromatic Dispersion

- Zero Dispersion Wavelength (λ_0):
 $1297 \text{ nm} \leq \lambda_0 \leq 1316 \text{ nm}$
- Zero Dispersion Slope (S_0):
 $\leq 0.101 \text{ ps}/(\text{nm}^2 \cdot \text{km})$

Core Diameter

$$\text{Dispersion} = D(\lambda) \approx \frac{S_0}{4} \left[\lambda - \frac{\lambda_0^4}{\lambda^3} \right] \text{ ps}/(\text{nm} \cdot \text{km})$$

For $750 \text{ nm} < \lambda < 1450 \text{ nm}$, $\lambda =$ Operating Wavelength

- $50.0 \pm 3.0 \mu\text{m}$

Numerical Aperture

- 0.200 ± 0.015

Environmental Specifications

Environmental Test Condition	Induced Attenuation (dB/km)	
	850 nm	1300 nm
Temperature Dependence -60°C to +85°C	≤ 0.20	≤ 0.20
Temperature - Humidity Cycling -10°C to +85°C and 4% to 98% RH	≤ 0.20	≤ 0.20
Operating Temperature Range: -60°C to +85°C		

Dimensional Specifications

Standard Length (km/reel)

- 1,100 - 4,400 meters
- Special lengths available upon request.

Glass Geometry

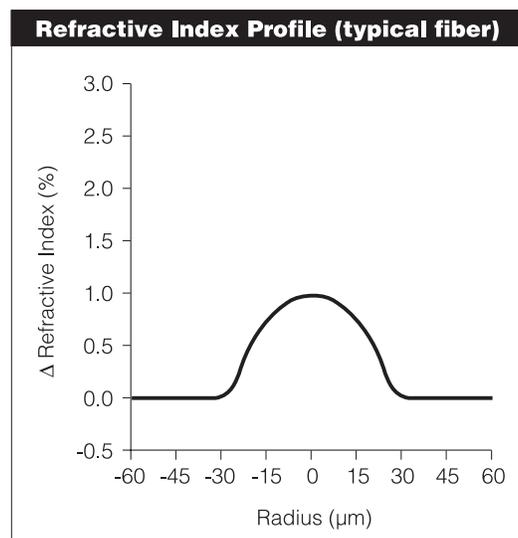
- Cladding Diameter: $125.0 \pm 2.0 \mu\text{m}$
- Core-Clad Concentricity: $\leq 3.0 \mu\text{m}$
- Cladding Non-Circularity: $< 2.0\%$
- Core Non-Circularity: $\leq 5\%$

Non-Circularity is defined as:

$$\left[1 - \frac{\text{Min. Diameter}}{\text{Max. Diameter}} \right] \times 100$$

Coating Geometry

- Coating Diameter: $245 \pm 5 \mu\text{m}$
- Coating-Cladding Concentricity: $< 12 \mu\text{m}$



Mechanical Specifications

Proof Test

- The entire length of fiber is subjected to a tensile proof stress ≥ 100 kpsi (0.7 GN/m^2).

Performance Characterizations

Characterized parameters are typical values.

Effective Group Index of Refraction (N_{eff})

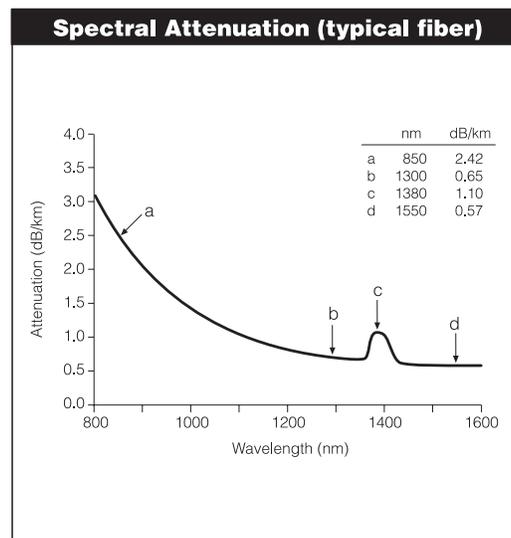
- 1.490 at 850 nm
- 1.486 at 1300 nm

N_{eff} was empirically derived to the third decimal place using a specific commercially available OTDR.

Fatigue Resistance Parameter (n_d): 20

Coating Strip Force

- Dry: 0.7 lbs (3.2 N)
- Wet: 14 days in 23°C water soak: 0.7 lbs (3.2 N)



Ordering Information

To order Corning® InfiniCor™ 600 CPC6 optical fiber, contact your sales representative, or call the Telecommunications Products Division Customer Service Department at **910-395-7659** (North America) and **+1 607-974-7174** (International). Please specify the following parameters when ordering:

Fiber Type: Corning® InfiniCor™ 600

Reel Lengths: 1100, 1700, 2200, 3300, and 4400 meters

Fiber Quantity: kms

Proof Test: 100 kpsi (0.7 GN/m²)

Other: (Requested ship date, etc.)

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