

PI359

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ISO 9001 Registered

Corning® 50/125 CPC6 Multimode Optical Fiber

GENERAL

Corning® 50/125 μm fiber is a graded index multimode optical fiber with a 50 μm core diameter and a 125 μm cladding diameter. Corning 50/125 fiber is specified for operation at the 850 nm and/or 1300 nm wavelengths.

CPC6 is an advanced mechanically strippable acrylate coating with a 245 μm nominal outside diameter. It is overcoated for use in tight buffer cable designs, ribbon cable, and in loose tube and slotted core cable designs. CPC6 provides superior protection of the glass fiber while allowing excellent craft-friendly stripping performance.

Typical applications are local area and wide area networks, carrying data, voice and/or video services. This product offers both the highest bandwidth and the lowest attenuation of most commercially available multimode optical fibers, and is ideal for Gigabit Ethernet applications as well as 622 Mbit ATM. This product complies with IEC Publication 793-2.

OPTICAL SPECIFICATIONS

• Attenuation

Measurement methods comply with ITU recommendations G.650 and G.651 as appropriate.

Attenuation Cells			
Attenuation Cells (dB/km)			
1300 nm only		850/1300 nm	
Premium	Standard	Premium	Standard
≤ 0.5	≤ 0.8	$\leq 2.4/0.5$	$\leq 2.5/0.8$

Special attenuation cells available upon request.

Point Discontinuity

No point discontinuity greater than 0.2 dB.

Attenuation Difference

The attenuation at 1380 nm does not exceed the attenuation at 1300 nm by more than 3.0 dB/km.

Attenuation with Bending

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.

• Bandwidth

Standard Bandwidth Cells	
–/1300 nm	850/1300 nm
	400/400
	400/600
–/800	400/800
–/1000	400/1000
	500/500*
	600/600

Other bandwidth cells available upon request.

** Recommended bandwidth as proposed for revised IEC 11801 and TIA 568 specifications.*

- **Chromatic Dispersion**

Zero Dispersion Wavelength (λ_0): $1297 \text{ nm} \leq \lambda_0 \leq 1316 \text{ nm}$

Zero Dispersion Slope (S_0): $\leq 0.101 \text{ ps}/(\text{nm}^2 \cdot \text{km})$

Dispersion Calculation	
Dispersion = D (λ):	$\approx \frac{S_0}{4} \left[\lambda - \frac{\lambda_0^4}{\lambda^3} \right] \text{ ps}/(\text{nm} \cdot \text{km}), \quad \text{for } 750 \text{ nm} \leq \lambda \leq 1450 \text{ nm} \quad \lambda = \text{Operating Wavelength}$

- **Core Diameter**

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

- **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): 1100 - 4400 m

**Special lengths available upon request.*

Glass Geometry

Cladding Diameter: $125.0 \pm 2.0 \text{ } \mu\text{m}$

Core-Clad Concentricity: $< 3.0 \text{ } \mu\text{m}$

Cladding Non-Circularity: $< 2.0\%$

Core Non-Circularity: $\leq 5\%$

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

Coating Geometry

Coating Diameter: $245 \pm 10 \text{ } \mu\text{m}$

Coating-Cladding Concentricity: $< 12 \text{ } \mu\text{m}$

MECHANICAL SPECIFICATIONS

Proof Test:

The entire length of fiber is subjected to a tensile proof stress $\geq 100 \text{ kpsi}$ (0.7 GN/m^2)*.

** Higher proof test available at a premium.*

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.

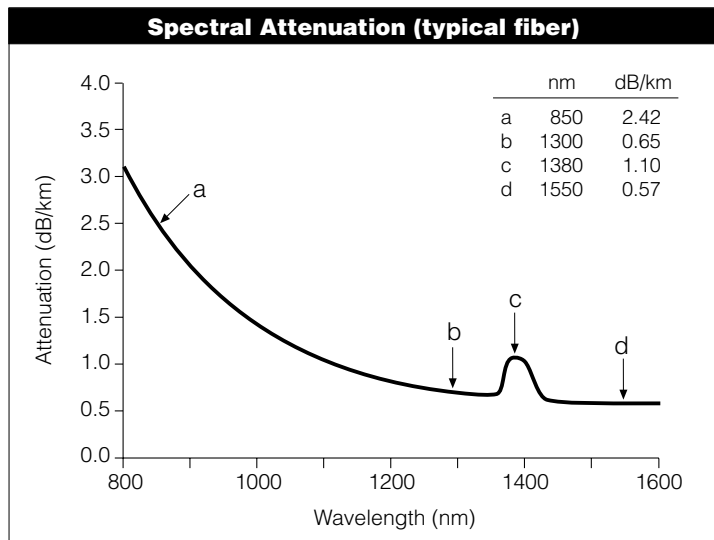
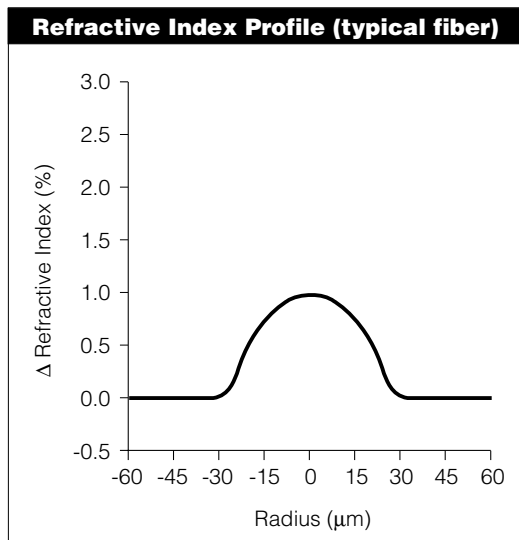
Fatigue Resistance Parameter (n_d):

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® 50/125 CPC6 optical fiber, contact your sales representative, or call the Telecommunications Products Division Customer Service Department at **910-395-7659** (in North America) and **607-974-7174** (outside of North America). Please specify the following parameters when ordering.

Fiber Type: Corning® 50/125 μ m multimode fiber

Coating: CPC6 (245 μ m outside diameter)

Desired Attenuation Cell: at 850 nm and/or 1300 nm (dB/km) e.g. 2.5/0.8

Desired Bandwidth Cell: at 850 nm and/or 1300 nm (MHz•km) e.g. 400/400

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

Fiber Quantity: kms

Proof Test: 100 kpsi (0.7 GN/m²) or special proof test

Other: (Requested ship date, etc.)

CORNING

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Corning fiber is
made in the USA.

