

Description

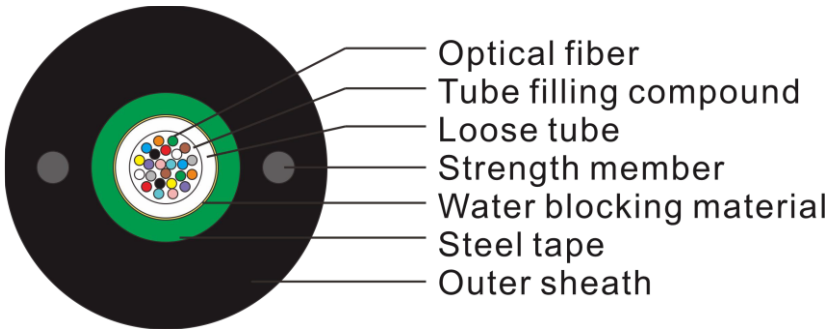
PROSE Outdoor Optical Fiber FC03 Series cables deliver high-performance fiber connectivity, exceeding TIA/EIA-568.3-D, ISO/IEC 11801, and EN50173 standards. Designed for excellent EMI resistance and easy installation, they offer superior flexibility, adaptability, and integrated structure.

Ideal for outdoor applications such as trunk and inter-building overhead pipelines, the cable features 250μm fibers within a central loose tube filled with waterproof compound. A double-sided coated steel tape and water-blocking materials ensure longitudinal sealing, while parallel steel wires and a PE sheath provide mechanical strength and durability.

Key Features

- The center beam tube structure has good mechanical properties.
- The double-sided coated plastic steel strip can improve the anti-moisture ability of optical cable.
- Two parallel steel wires can ensure the tensile strength of the fiber cable;
- Provide single mode, multi-mode, 2-24 core multiple models;

Profile/Outline



Reference standard

ITU-T G.652	Characteristics of a single-mode optical fiber
IEC 60794-1-1	Optical fiber cables-part 1-1: Generic Specification-General
IEC 60794-1-2	Optical fiber cables-part 1-2: Generic Specification-Basic optical cable test procedure
IEC 60794-3	Optical fiber cables-part 3: Sectional Specification-Outdoor cables

Cable Identification

1. Fiber color code

No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Gray	White
No.	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Pink	Aqua

Cable Assembly & Dimensions

Item	Contents	Value		
		4/6	12	24
Loose tube	Number	1		
	Outer diameter (mm)	2.5±0.1		3.0±0.1
	Thickness(mm)	0.4±0.05		0.45±0.05
	Material	PBT		
	Water blocking	Tube filling compound		
Water blocking	Material	Water blocking jelly		
Armored	Material	Corrugated steel tape	Steel tape	
Strength member	Material	Steel wire		
	Diameter (mm)	1.0±0.1		1.3±0.1
	Number	2		
Outer Sheath	Material	PE		
	Color	Black		
	Thickness (mm)	Nominal 2.5, Minimum 2.2		Nominal 2.8, Minimum 2.5
Cable diameter(mm) Approx.		8.7±0.3		9.8±0.3
Cable weight(kg/km) Approx.		77±15%		101±15%

Performance of Cabled Optical Fiber

1. The performance of cabled optical fiber (ITU-T Rec. G.652D)

Item		Specification
Fiber type		Single mode
Fiber material		Doped silica
Attenuation coefficient	@ 1310 nm	≤ 0.36 dB/km
	@ 1550 nm	≤ 0.22 dB/km
Cable cut-off wavelength		≤ 1260 nm
Zero-dispersion wavelength		1300 ~ 1324 nm
Zero-dispersion slope		≤ 0.092 ps/(nm ² .km)
Chromatic dispersion	@ 1288 ~ 1339 nm	≤ 3.5 ps/(nm. km)
	@ 1550 nm	≤ 18 ps/(nm. km)
	@ 1625 nm	≤ 22 ps/(nm. km)
PMD		≤ 0.2 ps/km ^{1/2}
Mode field diameter	@ 1310 nm	9.2 ± 0.4 μm
Core / Clad concentricity error		≤ 0.6 μm
Cladding diameter		125.0 ± 1.0 μm
Cladding non-circularity		≤ 1.0 %
Primary coating diameter		245 ± 10 μm

2. The performance of cabled optical fiber (OM3)

Item		Specification
Core diameter		50 ± 2.5 μm
Core-cladding concentricity		≤ 1.5 μm
Cladding non-circularity		≤ 2.0 %
Coating diameter		245 ± 10 μm
Cladding-coating concentricity		≤ 12.5 μm
Cladding diameter		125 ± 1.0 μm
Attenuation coefficient	@ 850 nm	≤ 2.5 dB/km
	@ 1310 nm	≤ 0.8 dB/km
Bandwidth	@ 850 nm	≥ 1500 MHz.km
	@ 1310 nm	≥ 500 MHz.km

3. The performance of cabled optical fiber (OM4)

Item		Specification
Core diameter		50 ± 2.5 μm
Core-cladding concentricity		≤ 10 μm
Cladding non-circularity		≤ 1.0 %
Coating diameter		245 ± 10 μm
Cladding-coating concentricity		≤ 12 μm
Cladding diameter		125 ± 1.0 μm
Attenuation coefficient	@ 850 nm	≤ 3.5 dB/km
	@ 1310 nm	≤ 0.7 dB/km
Bandwidth	@ 850 nm	≥ 3500 MHz.km
	@ 1310 nm	≥ 500 MHz.km

Mechanical Parameters

Item	Specification
Cable bending radius(static)	10 x cable diameter
Cable bending radius(dynamic)	20 x cable diameter
Operating temperature range	-40°C to +70°C
Storage / Transport temperature range	-40°C to +70°C
Installation temperature range	-20°C to +60°C

Mechanical & Environmental Performance Test

S/N	Item	Test Method	Acceptance Condition
1	Tensile Strength IEC 60794-1-21-E1	- Load: 1500N - Length of cable under load: 50 m - Load time: ≥ 1min	- Loss change ≤ 0.1 dB @ 1550 nm - Fiber strain ≤ 0.6 % - No fiber break and no sheath damage.
2	Crush Test IEC 60794-1-21-E3	- Load: 1000N/100mm - Load time: ≥ 1min	- Loss change ≤ 0.1 dB @ 1550 nm - No fiber break and no sheath damage.

3	Impact Resistance IEC 60794-1-21-E4	- Points of impact: 5 - Times of per point: 1 - Impact energy: 4.5N.m	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
4	Repeated Bending IEC 60794-1-21-E6	- Bending radius:20 x cable diameter - No. of cycle: 30	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
5	Torsion IEC 60794-1-21-E7	- Length:1m - Twist angle: $\pm 90^\circ$ - No. of cycle: 10	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
6	Water Penetration Test IEC 60794-1-22-F5B	- Height of water: 1 m - Sample length: 3 m - Test time: 24 hours	- No water shall have leaked from the opposite end of cable.
7	Temperature Cycling Test IEC 60794-1-22-F1	- Low temperature: -40°C - High temperature: $+70^\circ\text{C}$ - Time per each step: 12 hours - No. of cycle: 2	- Loss change ≤ 0.1 dB/km @1550 nm - No fiber break and no sheath damage.
8	Compound Flow IEC 60794-1-21-E14	- Sample length: 30 cm - Temp: $70^\circ\text{C} \pm 2^\circ\text{C}$ - Time: 24 hours	- No compound flow

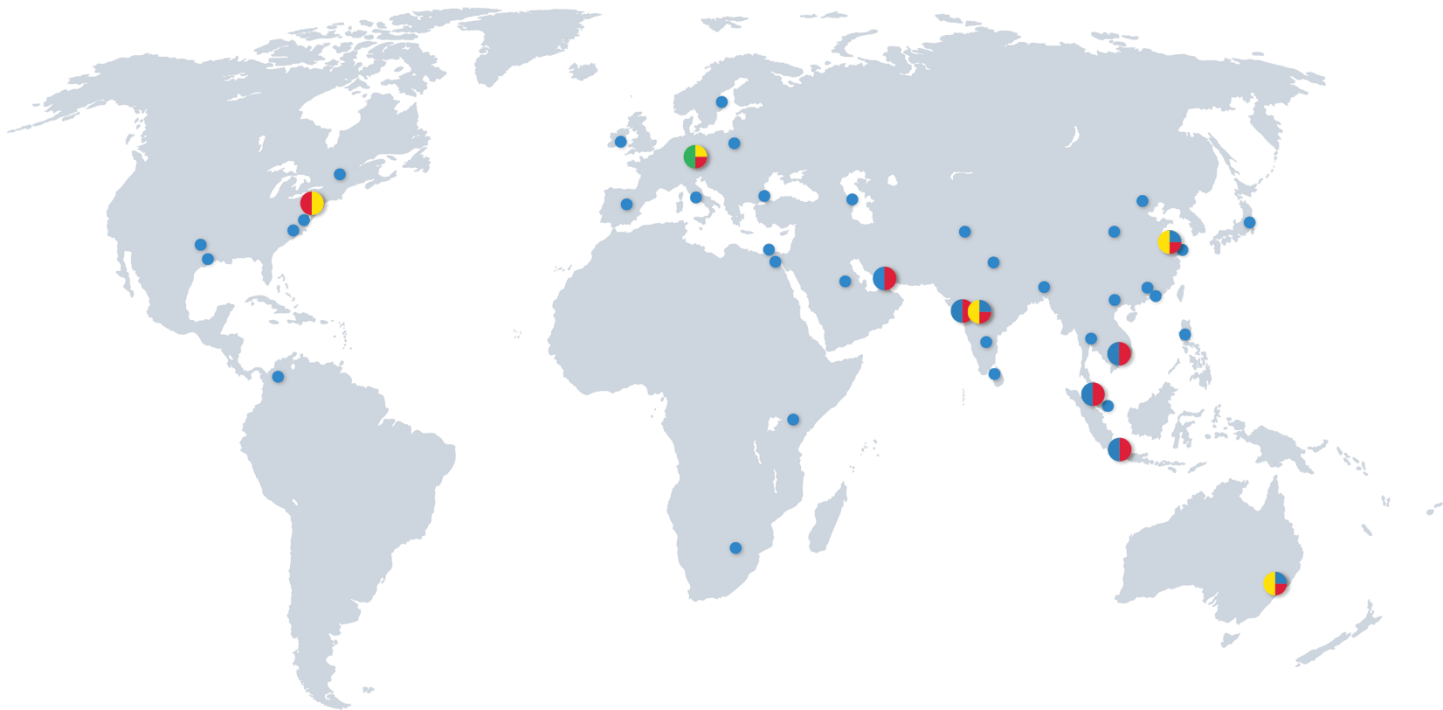
Ordering Information

Category	Cable Structure	Fiber Type	Outer Sheath Material	Fiber Count
FC: Fiber Cable	03: Outdoor, Light Armored, Central tube (2-24F)	GD: G652D M2: OM2 M3: OM3 M4: OM4 M5: OM5	3: PE	004:4F 006:6F 008:8F 012:12F 016:16F 024:24F

Example:

Order Number	Fiber count	Description
FC03-GD3006	6	Cable, Outdoor, Armored, GYXTW, Central Tube, 6F, SM G652D, PE
FC03-M33012	12	Cable, Outdoor, Armored, GYXTW, Central Tube, 12F, MM OM3, PE
FC03-M43024	24	Cable, Outdoor, Armored, GYXTW, Central Tube, 24F, MM OM4, PE

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