

Description

PROSE FC06 Series outdoor optical fiber cables are designed for backbone conduit systems and inter-building aerial links, ensuring reliable transmission in outdoor environments.

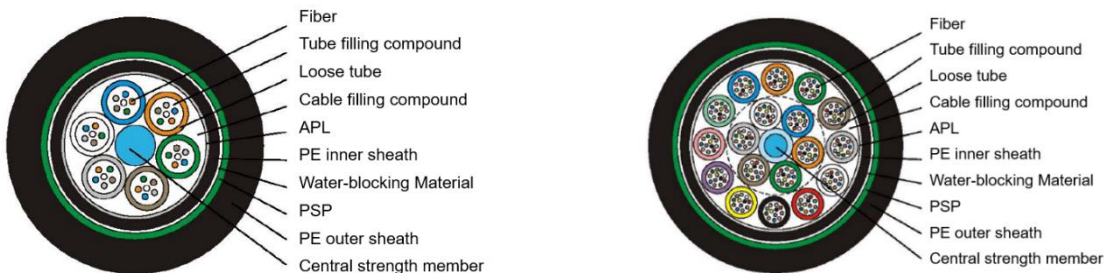
250µm fibers are housed in hydrolysis-resistant loose tubes filled with water-blocking compound. Tubes are stranded around a central steel strength member, forming a compact cable core. An APL barrier and additional water-blocking materials provide excellent moisture protection, while PSP steel tape and dual PE sheaths enhance mechanical strength, durability, and long-term outdoor performance.

Key Features

- Excellent mechanical and temperature performance
- Hydrolysis-resistant high-strength loose tubes
- Special tube filling compound for reliable fiber protection
- Central steel wire strength member for enhanced tensile performance
- Outstanding crush resistance and flexibility
- APL moisture barrier for superior water blocking
- PSP layer for additional moisture-proof and mechanical protection
- Comprehensive water-blocking design for long-term reliability



Profile/Outline



Reference standard

ITU-T G.652/1	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

2. Loose tube (LT) & filler rod (FR) color code

Fiber count	1	2	3	4	5	6	7	8	9	10	11	12
12	LT	LT	FR	FR	FR	FR						
24/48	LT	LT	LT	LT	FR	FR						

* "LT" means "Loose Tube"; ** "FR" means "Filler Rod".

Cable Assembly & Dimensions

Item	Contents	Value	Value
		12/24	48
Loose tube	Number	2/4	4
	Outer diameter (mm)	1.8±0.1	2.0±0.1
	Thickness(mm)	0.3±0.05	0.3±0.05
	Material	PBT	PBT
	Water blocking	Tube filling compound	
Filler	Number	4/2	2
	Material	PP	PP
Max. Fiber count per tube	Number	6	12
Central strength member	Material	Steel wire	Steel wire
	Diameter (mm)	1.8±0.1	2.0±0.1
	PE Layer diameter (mm)	-	-
Water blocking	Material	Cable filling compound	
Armored	Material	Aluminium tape	
Inner Sheath	Material	PE	PE
	Color	Black	Black
	Thickness (mm)	Nominal 0.8, Minimum 0.6	
Armored	Material	Corrugated steel tape	
Outer Sheath	Material	PE	PE
	Color	Black	Black
	Thickness (mm)	Nominal 1.7, Minimum 1.5	
Cable diameter(mm) Approx.		12.6±0.4	13.2±0.4
Cable weight(kg/km) Approx.		157±15%	174±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 μ m
Core / Clad concentricity error		≤ 0.6 μ m
Cladding diameter		125.0 ± 1.0 μ m
Cladding non-circularity		≤ 1.0 %
Primary coating diameter		245 ± 10 μ m

2. The performance of cabled optical fiber (OM3)

Item		Specification
Core diameter		50 ± 2.5 μ m
Core-cladding concentricity		≤ 1.5 μ m
Cladding non-circularity		≤ 2.0 %
Coating diameter		245 ± 10 μ m
Cladding-coating concentricity		≤ 12.5 μ m
Cladding diameter		125 ± 1.0 μ m
Attenuation coefficient	@ 850 nm	≤ 3.3 dB/km
	@ 1310 nm	≤ 1.0 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 μ m
Core-cladding concentricity		≤ 10 μ m
Cladding non-circularity		≤ 1.0 %
Coating diameter		245 ± 10 μ m
Cladding-coating concentricity		≤ 12 μ m
Cladding diameter		125 ± 1.0 μ m
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)	12.5 x cable diameter
Cable bending radius(dynamic)	25 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: 300N - Length of cable under load: 50 m - Load time: ≥ 1 min	- Loss change ≤ 0.1 dB @ 1550 nm - Fiber strain ≤ 0.33 % - No fiber break and no sheath damage.
2	Crush Test IEC 60794-1-21-E3	- Load: 300N/100mm - Load time: ≥ 1 min	- 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: 6.5N.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°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°C $\pm 2^\circ$ C - Time: 24 hours	- No compound flow

Ordering Information

Category	Cable Structure	Fiber Type	Outer Sheath Material	Fiber Count
FC: Fiber Cable	06: Outdoor, Heavy Armored, stranded, GYTA53	GD: G652D M2: OM2 M3: OM3 M4: OM4	1: OFNR 2: LSZH 60332-1 3: PE	002:2F 012:12F 024:24F 036:36F 144:144F

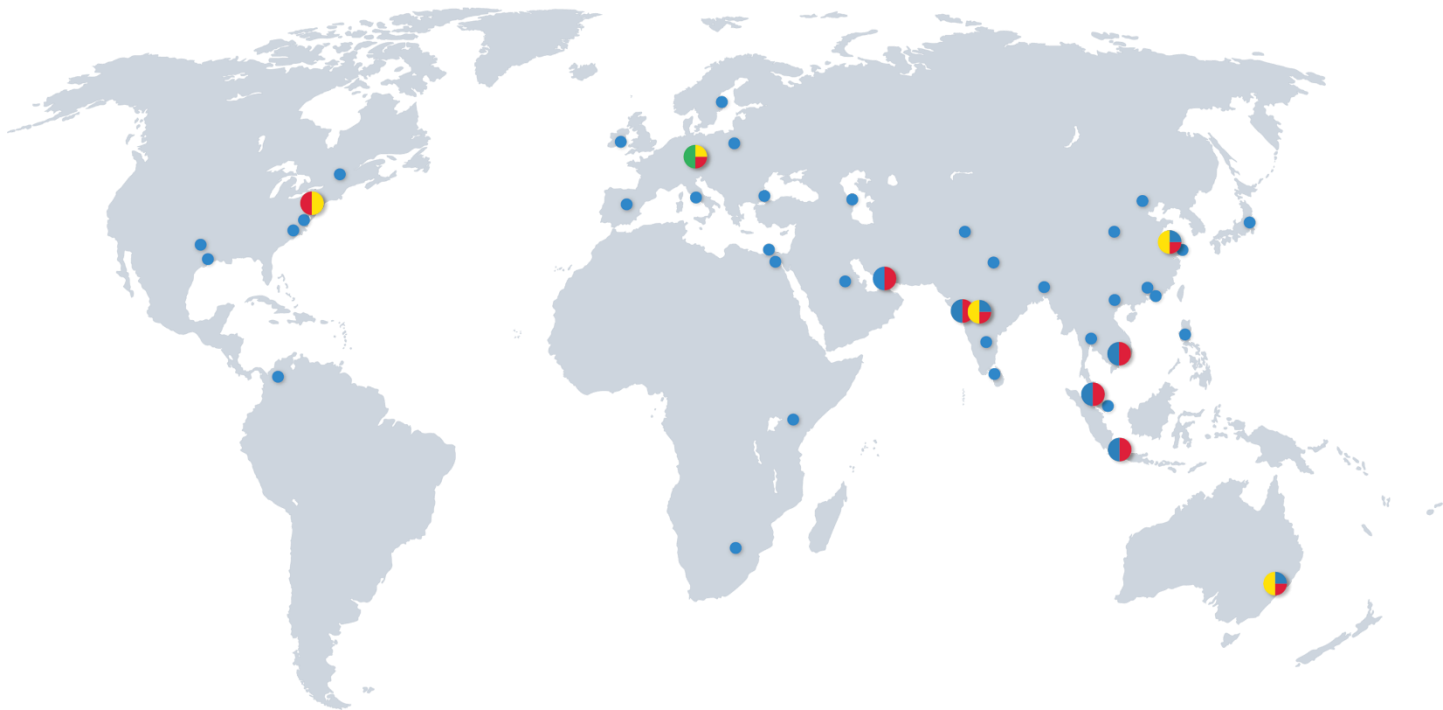
Outdoor Cabel, Heavy Armored, Stranded
FC06 Series GYTA53



For Example:

Order Number	Fiber count	Description
FC06-GD3012	12	Cable, Outdoor, Heavy Armored, Stranded, GYTA53 ,12F, SM G652D, PE
FC06-GD3024	24	Cable, Outdoor, Heavy Armored, Stranded, GYTA53 ,24F, SM G652D, PE
FC06-M33048	48	Cable, Outdoor, Heavy Armored, Stranded, GYTA53 ,48F, MM OM3, PE
FC06-M33072	72	Cable, Outdoor, Heavy Armored, Stranded, GYTA53 ,72F, MM OM3, PE

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