

Applications

Prose outdoor optical fiber FC03 series cables are designed for fiber solutions with excellent performance which exceed TIA / EIA 568.3-D, ISO / IEC 11801, EN50173 requirements. Good EMI-resistant, easy installation, meanwhile having extremely high flexibility, adaptability and maximally integrated designing.

It is mainly used for optical fiber connection of outdoor areas, trunk pipelines or overhead pipelines between buildings. The optical cable is a 250um optical fiber inserted into the center beam tube, and the tube is filled with waterproof compound. The tube is longitudinally wrapped with a double-sided chromium-coated plastic steel strip, and water blocking material is added between the steel strip and the tube to ensure the compact and longitudinal water blocking of the cable. Two parallel steel wires are placed on both sides of the tube and the extruded PE sheath is formed.

Feature/Characteristic

- 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



Structural parameters

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%

Optical Parameters

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

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

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: ±90° - 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	- Loss change ≤ 0.1 dB/km @1550 nm - No fiber break and no sheath damage.



		- Time per each step: 12 hours - No. of cycle: 2	
8	Compound Flow IEC 60794-1-21-E14	- Sample length: 30 cm - Temp: 70°C ± 2°C - Time: 24 hours	- No compound flow



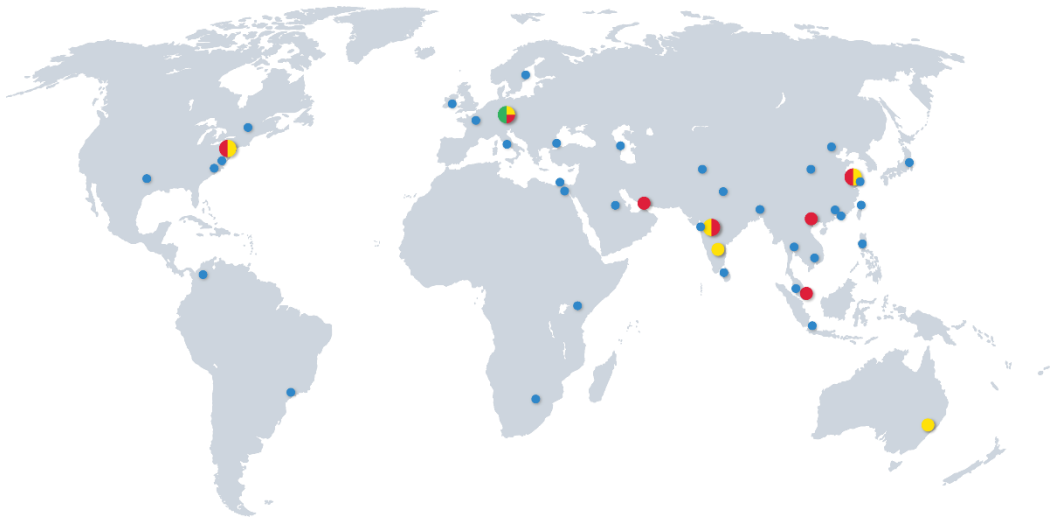
Ordering Information

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

GLOBAL FOOTPRINT



Headquarters

Donauwörth - Germany
PROSE Technologies GmbH
Add.: Dr.-Friedrich-Drechsler-Straße 14, 86609
Donauwörth, Germany
E-mail: info.eu@prosetechnologies.com

Western Europe

Dublin - Ireland
PROSE Technologies (Ireland) Limited
Add.: 6th Floor, South Bank House, Barrow Street,
Dublin 4 Ireland
E-mail: Info@prosetechnologies.com

Eastern Europe & Central Asia

E-mail: info.eeca@prosetechnologies.com

North America

New Jersey - America
PROSE Technologies LLC
Add.: 550 Clark Drive Budd Lake, NJ 07828, United
States of America
Tel: +1 888 840 4066
E-mail: info.us@prosetechnologies.com

Middle East

ubai - UAE
PROSE Technologies DMCC
Add.: 3702, Mazaya Business Avenue BB2, JLT, Dubai
Tel: +971 4 3999168
E-mail: info.ae@prosetechnologies.com

Africa

Nairobi - Kenya
PROSE Technologies Africa (PTY) Ltd
Tel: +254 780440410
E-mail: info.ke@prosetechnologies.com

Gauteng, (Johannesburg) - South Africa
PROSE Technologies Africa (PTY) Ltd
Add.: Building 20, Cambridge Office Park, 5 Bauhina
Road, Highveld Techno Park Centurion, Gauteng 0169,
South Africa
Mobile: +27 725554840
E-mail: info.za@prosetechnologies.com

South Asia

Mumbai - India
PROSE Technologies India Private Limited
Add.: 403-407, Eco Star, Vishveshwar Nagar,
Goregaon East, Mumbai ,India 400063
Tel: +91 22-66453000
E-mail: info.in@prosetechnologies.com

Pune - India
PROSE Technologies India Pvt.Ltd
Add.: A-79, Block-A , Horizon Industrial Parks, Phase II,
MIDC Chakan Industrial Area, Khed, Pune , India
410501
Tel: +91 2135-635200
E-mail: info.in@prosetechnologies.com

Bangalore - India
PROSE Technologies India Private Limited
Add.: No.494 East End Main Road, Jayanagar IX Block,
Bangalore, India 560069
E-mail: info.in@prosetechnologies.com

New Delhi - India
PROSE Technologies India Pvt.Ltd
Add.: H-3/157, 2nd Floor, Vikas Puri, New Delhi, India
110018
E-mail: info.in@prosetechnologies.com

Dhaka - Bangladesh
PROSE Technologies (Bangladesh) Limited
Add.: House-360 (2nd Floor), Lane-5 (East), Baridhara
DOHS, Dhaka-1206, Bangladesh
Tel: +880 1977070130
E-mail: info.bd@prosetechnologies.com

Islamabad - Pakistan
Add.: Unit 514, 5th Floor, ISE Towers, Islamabad,
Pakistan
Tel: +92 3335357733
E-mail: info.pk@prosetechnologies.com

Sri Lanka
Tel: +880 1977070130
E-mail: info.lk@prosetechnologies.com

South East Asia

Selangor - Malaysia
PROSE Technology (M) Sdn. Bhd
Add.: Unit 2-1, Level 2, The Podium, Tower 3, UOA
Business Park, No 1, Jalan Pengaturcara U1/51a,
Seksyen U1, 40150 Shah Alam, Selangor, Malaysia
Tel: +60 126859319
E-mail: info.my@prosetechnologies.com

Bangkok - Thailand
PROSE Technology (Thailand) Co., Ltd
Add.: 349 SJ Infinite I Business Complex,9 Floor, Room
905, Vibhavadi Rangsit Road, Chom Phon Sun-district,
Chatuchak District, Bangkok Prowice, Thailand
Tel: +66 80 6606630
E-mail: info.th@prosetechnologies.com

Singapore
PROSE Technologies (Singapore) Pte.Ltd
Add.: 10 Anson Road#13-15 International Plaza
Singapore 079903
Tel: +6598366793
E-mail: info.sg@prosetechnologies.com

Hanoi - Vietnam
PROSE Technologies (Vietnam) Company Limited
Add.: Floor 15, Vinaconex 9 Building, HH-2 Block,
Pham Hung Street, Me Tri Ward, Nam Tu Liem District,
Hanoi, Vietnam
Tel: +84 933086498
E-mail: info.vn@prosetechnologies.com

Taguig - Philippines
PROSE Technologies Philippines, Inc.
Add.: Unit 17 19th Floor Highstreet South Corporate
Plaza Tower 1, 26th Street corner 9th Avenue, Bonifacio
Global City, Taguig City, Philippines
Tel: +63 27572762
E-mail: info.ph@prosetechnologies.com

Jakarta - Indonesia
PT. PROSE Technologies Indonesia
Add.: Plaza Sentral 6th Floor, Jalan Jenderal Sudirman
No. 47, Jakarta 12930, Indonesia
Tel: +62 21 57901997
E-mail: info.id@prosetechnologies.com

East Asia

Suzhou - China
PROSE Technologies (Suzhou) Co.,Ltd
Add.: No. 6, Shen'an Road, DianShanHu, Suzhou,
JiangSu, China
E-mail: Info@prosetechnologies.com

Beijing - China
PROSE Technologies (Beijing) Co.,Ltd
E-mail: Info@prosetechnologies.com

Shanghai - China
PROSE Technologies (Shanghai) Co.,Ltd
E-mail: Info@prosetechnologies.com

Dongguan - China
Add.: Room 1506, building 1, No. 1, Yile Road,
Songshanhu Park, Dongguan City, Guangdong
Province, China
E-mail: Info@prosetechnologies.com

Hongkong - China
PROSE Technologies Company Limited
Add.: Unit B 13/F,Prat Commercial Building, 17-19 Prat
Avenue, Tsimshatsui, Kowloon, HongKong, China
Tel:+86 512 86896789 - 2921/2922
E-mail: info.hk@prosetechnologies.com

Taiwan
Tel: +63 2 7572762
E-mail: info.tw@prosetechnologies.com

Oceania

New South Wales - Australia
PROSE Technologies (Australia) Pty. Ltd
Add.: 5/13 Boundary Rd, Northmead, NSW 2152,
Australia
Tel: +61 2 78055523
E-mail: info.au@prosetechnologies.com