

Armored Optical Fiber Cable [GYXTW 2-12F]

Technical Data Sheet

1. Cable Construction

1.1 Cross-Sectional Structure & Components:

- Optical Fiber (2 - 12 Cores)
- Tube Filling Compound (Thixotropic Jelly)
- Loose Tube (PBT Plastic)
- Water-Blocking Material / Compound
- PSP (Corrugated Steel Tape Armor)
- Parallel Steel Wires (2 Strength Members, 0.7mm)
- Outer Sheath (PE - Polyethylene)

1.2 Structure Specifications:

ITEMS	SUB-ITEMS	DESCRIPTION
Fiber Count		2 - 12F
Loose Tube	OD (mm)	2.2 ± 0.1
	Material	PBT
Water Block Material		Water Blocking Compound
Armor		Corrugated Steel Tape (PSP)
Strength Member (Steel)	Diameter & Qty	0.7 mm × 2
Sheath	Thickness Material	Nom. 1.7 mm PE (Polyethylene)
OD of Cable (mm)		7.0
Net Weight (kg/km)		54

2. Fiber Color Identification

NO.	1	2	3	4	5	6	7	8	9	10	11	12
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Color	Blue	Orange	Green	Brown	Slate	Natural	Red	Black	Yellow	Violet	Pink	Aqua
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3. Optical Fiber Specifications

3.1 Single Mode Fiber (G.652D / G.657A)

ITEMS	UNITS	G.652D SPECIFICATION	G.657A SPECIFICATION
Attenuation	dB/km	1310nm ≤ 0.36 1550nm ≤ 0.22	1310nm ≤ 0.36 1550nm ≤ 0.22
Chromatic Dispersion	ps/nm·km	1310nm ≤ 3.5 1550nm ≤ 18 1625nm ≤ 22	1310nm ≤ 3.5 1550nm ≤ 18 1625nm ≤ 22
Zero Dispersion Slope	ps/nm ² ·km	≤ 0.092	≤ 0.092
Zero Dispersion Wavelength	nm	1300 ~ 1324	1300 ~ 1324
Cut-off Wavelength (cc)	nm	≤ 1260	≤ 1260
Attenuation vs. Bending (60mm x 100 turns)	dB	(30mm radius, 100 turns) ≤ 0.1 @1625nm	(10mm radius, 1 turn) ≤ 1.5 @1625nm
Mode Field Diameter	μm	9.2 ± 0.4 at 1310nm	9.2 ± 0.4 at 1310nm
Core-Clad Concentricity	μm	≤ 0.5	≤ 0.5
Cladding Diameter	μm	125 ± 1	125 ± 1
Cladding Non-circularity	%	< 0.8	< 0.8
Coating Diameter	μm	245 ± 5	245 ± 5
Proof Test	GPa	≥ 0.69	≥ 0.69

3.2 Multi Mode Fiber (62.5/125, 50/125, OM3, OM4)

ITEMS	UNITS	62.5/125	50/125	OM3-150	OM3-300 / OM4-550
Fiber Core Diameter	μm	62.5 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5
Fiber Core Non-circularity	%	≤ 6.0	≤ 6.0	≤ 6.0	≤ 6.0
Cladding Diameter	μm	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0
Cladding Non-circularity	%	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0

Coating Diameter	μm	245 ± 10	245 ± 10	245 ± 10	245 ± 10
Coat-Clad Concentricity	μm	≤ 12.0	≤ 12.0	≤ 12.0	≤ 12.0
Coating Non-circularity	%	≤ 8.0	≤ 8.0	≤ 8.0	≤ 8.0
Core-Clad Concentricity	μm	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Attenuation @ 850nm	dB/km	3.0	3.0	3.0	3.0
Attenuation @ 1300nm	dB/km	1.5	1.5	1.5	1.5
OFL Bandwidth @ 850nm	MHz·km	≥ 160	≥ 200	≥ 700	≥ 1500 / 3500
OFL Bandwidth @ 1300nm	MHz·km	≥ 300	≥ 400	≥ 500	≥ 500
Theoretical Numerical Aperture	-	0.275 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015

4. Mechanical and Environmental Performance

NO.	ITEMS	TEST METHOD	ACCEPTANCE CRITERIA
1	Tensile Loading Test	IEC 60794-1-E1 • Long-tensile load: 300N • Short-tensile load: 600N • Cable length: ≥ 50m	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
2	Crush Resistance Test	IEC 60794-1-E3 • Long load: 300 N/100mm • Short load: 1000 N/100mm • Load time: 1 minute	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
3	Impact Resistance Test	IEC 60794-1-E4 • Impact height: 1m • Impact weight: 450g • Impact points: ≥ 5 • Impact frequency: ≥ 3 per point	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
4	Repeated Bending	IEC 60794-1-E6 • Mandrel diameter: 20D (D = Cable OD) • Subject weight: 15kg • Bending frequency: 30 times • Bending speed: 2s/time	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
5	Torsion Test	IEC 60794-1-E7 • Cable length: 1m • Subject weight: 25kg • Angle: ±180 degrees • Frequency: ≥ 10 times	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
6	Water Penetration Test	IEC 60794-1-F5B • Height of pressure head: 1m	• Attenuation increment @ 1550nm ≤ 0.1 dB

		• Length of specimen: 3m • Test time: 24 hours	• No water leak at cable end
7	Temperature Cycling Test	IEC 60794-1-F1 • Steps: +20°C → -20°C → +70°C → +20°C • Time per step: 12 hours • Cycle index: 2	• Attenuation increment @ 1550nm ≤ 0.1 dB • No jacket cracking and fiber breakage
8	Drop Performance	IEC 60794-1-E14 • Testing length: 30cm • Temp range: 70 ± 2°C • Test time: 24 hours	• No filling compound drop out
9	Temperature Range	• Operating: -40°C ~ +60°C • Storage / Transport: -50°C ~ +70°C • Installation: -20°C ~ +60°C	• Stable attenuation characteristics across rated operating ranges

5. Package and Marking

5.1 Packaging Details:

- Delivered in Fumigation-free plywood drum (equipped with wooden strip seals, set screws, and axle hole).
- Two length units of cable are NOT allowed in one drum.
- Both cable ends must be sealed to prevent moisture ingress.
- Both ends packed securely inside the drum, with reserved cable length of not less than 3 meters.

5.2 Cable Marking:

Cable outer sheath is marked at 1-meter intervals with: Brand name, Cable Type (GYXTW), Fiber Type & Count, Year of Manufacture, and Sequential Meter Marking.

6. Test Report & Certification

Full factory test report and quality compliance certificates are supplied with each delivery drum.

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