



Optical Fiber Cable Specification

Small Figure-8 Central Tube Cable

GYXC8H-8B6

1. General

This specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. It also includes premium designed cable with optical, mechanical and geometrical characteristics.

Cable type	Application
GYXC8H-8B6	Self-support aerial installation

n represent the number of fibers in the cable.

1.1 Cable Description

The cable has excellent optical transmission and physical performance, to meet customer requirements.

1.2 Quality

We ensure a stable quality control system for our cable products through several programs including ISO 9001.

1.3 Reliability

Initial and periodic qualification tests for raw material and cable product are performed to assure the cable's performance and durability in the field environment.

1.4 Reference

ITU-T G.657	Characteristics of a single-mode optical fibre
IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General
IEC 60794-1-2	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure
IEC 60794-3	Optical fibre cables-part 3: Sectional specification-Outdoor cables



XI'AN OPT Communication Co., Ltd.

Building 4, Free Trade Industrial Park, No. 2168, Zhenghe Fourth Road, Fengdong new town, XI'AN, China
Tel.:+8615399425989, E-mail: liyong@opt-ika.com

IEC 60794-3-10	Optical fibre cables-part 3-10: Outdoor cables-Family specification for duct and direct buried optical communication cables
IEC 60794-3-11	Optical fibre cables-Part 3-11: Outdoor cables-Detailed specification for duct and directly buried single-mode optical fibre telecommunication cables

1.5 Life Time

Optical fibre cables supplied in compliance with this specifications is capable to withstand the typical service condition for a period of THIRTY (30) years without detriment to the operation characteristics of the cable.



2. Optical Fiber

Optical Fibers supplied in this specification meet the requirements of ITU-T G.657A1

Characteristics	Conditions	Specified Values	Units
Optical characteristics			
Attenuation	1310 nm 1550 nm	<0.35 <0.21	[dB/km] [dB/km]
Chromatic Dispersion	1310 nm 1550 nm 1625 nm	≤3.5 ≤18 ≤22	[ps/(nm·km)] [ps/(nm·km)] [ps/(nm·km)]
Zero dispersion wavelength		1312±10	[nm]
Zero dispersion slope		≤0.092	[ps/(nm ² ·km)]
PMD Maximum Individual Fibre Link Design Value (M=20,Q=0.01%)		≤0.1 ≤0.06	[ps/km] [ps/km]
Cable cutoff wavelength λ _{cc}		≤1260	[nm]
Mode field diameter (MFD)	1310 nm 1550 nm	9.2±0.4 10.3±0.5	[μ m] [μ m]
Core-clad Concentricity		≤0.5	[μ m]
Cladding diameter		125±1	[μ m]
Cladding Non-circularity		≤0.8	[%]
Coating diameter		245±5	[μ m]
Proof test		≥0.69	[Gpa]



XI'AN OPT Communication Co., Ltd.

Building 4, Free Trade Industrial Park, No. 2168, Zhenghe Fourth Road, Fengdong new town, XI'AN, China
Tel.:+8615399425989, E-mail: liyong@opt-ika.com

3. Optical Cable

3.1 General Design

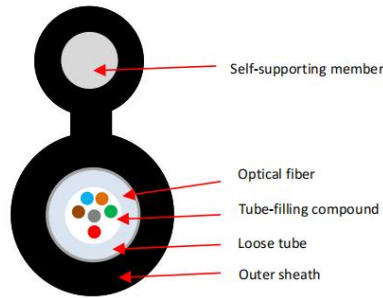
Optical fibers are housed in loose tubes that are made of high-modulus plastic and filled with waterproof compounds.

Phosphated steel wire is applied as Messenger.

Figure 8 type LSZH sheath are applied as outer sheath

3.2 Construction

3.2.1 Cross Section of Cable



GYXC8H-nB1.3

3.2.2 Dimensions and Descriptions of Cable Constructions

The standard structure of GYXTC8Y cable is shown in the following table, other structure and fibre count are also available according to customer requirements.

Items		Descriptions
Fiber	Fiber type	G.657A1
	Fiber counts	8
Self-supporting member	Material	Phosphated steel wire
	Diameter (mm)	1.2
Web	Height (mm)	1.5
	Width (mm)	2.0
Loose tube	Material	PBT
	Diameter (mm)	2.5
Outer sheath	Material	LSZH
	Thickness (mm)	1.0
Cable diameter approx. (± 0.5 mm)		4.6*9.8
Cable weight approx. (kg/km)		48



XI'AN OPT Communication Co., Ltd.

Building 4, Free Trade Industrial Park, No. 2168, Zhenghe Fourth Road, Fengdong new town, XI'AN, China
Tel.:+8615399425989, E-mail: liyong@opt-ika.com

3.2.3 Main Mechanical and Environmental Performance of Cable

Tensile performance(N)	Crush(N/100mm)	
1500	Short term	Long term
	1000	300

Operation temperature: -30°C~+70°C

3.2.4 Color Code of the Fibre and Loose tube

Each fibre can be identifiable throughout the length of the cable in accordance with the following color sequence.

	1	2	3	4	5	6
Fiber color code	Blue	Orange	Green	Brown	Slate	White
	7	8	9	10	11	12
	Red	Black	Yellow	Purple	Pink	Aqua

Tube will be identification in Natural.



XI'AN OPT Communication Co., Ltd.

Building 4, Free Trade Industrial Park, No. 2168, Zhenghe Fourth Road, Fengdong new town, XI'AN, China
Tel.:+8615399425989, E-mail: liyong@opt-ika.com

3.3 Mechanical, Electrical and Environmental Test Characteristics

The mechanical and environmental performance of the cable are in accordance with the following table. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1550nm.

Item	Test Method	Requirements
Tension	IEC 60794-1-2-E1 Load: According to 3.2.3 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation after test: ≤ 0.1 dB No damage to outer jacket and inner elements
Crush	IEC 60794-1-2-E3 Load: According to 3.2.3 Duration of load: 1min	Additional attenuation after test: ≤ 0.1 dB No damage to outer jacket and inner elements
Impact	IEC 60794-1-2-E4 Radius: 300mm Impact energy: 3J Impact number: 1 times on each point Impact points: 3	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Bend	IEC 60794-1-2-E11A Mandrel radius: 10Dmm Turns:10 Cycles:5	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Repeated bending	IEC 60794-1-2-E6 Bending radius: 20Dmm Cycles: 30 Load: 150N	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Torsion	IEC 60794-1-2-E7 Cycles:10 Length under test: 1m Turns: 90° Load: 150N	Additional attenuation: ≤ 0.1 dB No damage to outer jacket and inner elements
Temperature cycling	IEC 60794-1-2-F1 Sample length: at least 1000m Temperature range: -30°C→+70°C Cycles: 2 Temperature cycling test dwell time: 12 hours	The change in attenuation coefficient shall be less than 0.1 dB/km
Water Penetration	IEC 60794-1-2-F5B Time : 24 hours Sample length : 3m Water height : 1m	No water leakage.
Other parameters	According to IEC 60794 ,	



4. Packaging and Drum

4.1 Cable Sheath Marking

Unless otherwise specified, the cable sheath marking shall be as follows:

Color: white

Contents: Brand, the year of manufacture, the type of cable, cable number, length marking

Interval: 1 m

Outer sheath marking legend can be changed according to user's requests.

4.2 Reel Length

Standard reel length: 2/3 km/reel, other length is also available.

4.3 Cable Drum

The cables are packed in fumigated wooden drums.

4.4 Cable Packing

Both cable ends are protected against water penetration and firmly secured to the drum, so the cable cannot move and the turns cannot slide when it is moved, handled or laid. The inner end has around 3 meters of accessible length to perform reception tests.