

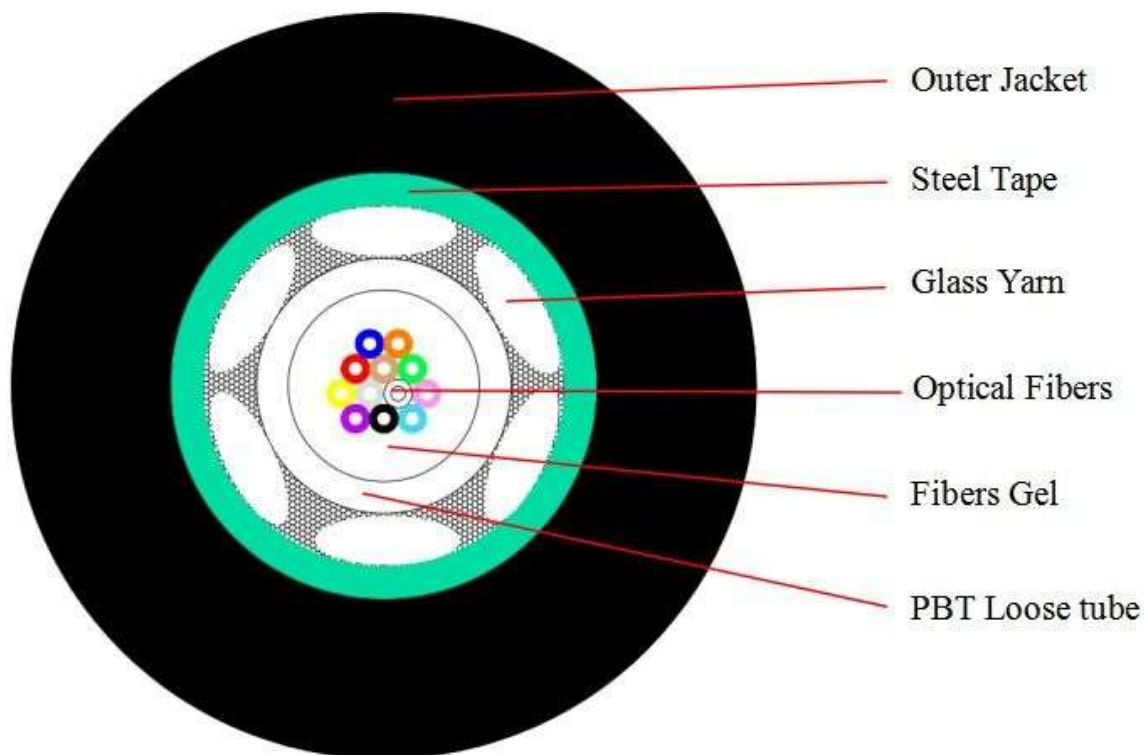
NETSYSTEM

Outdoor Center Tube Armoured Optic Cable

[**GYFXTKS**]

1. CABLE CONSTRUCTION

1.1 CROSS SECTIONAL DIAGRAM



2. TECHNICAL SPECIFICATION

2.1 TECHNICAL SPECIFICATION

Fiber Count		4	8	16	24
Loose Tube	Number	1			
	Material	PBT			
	Diameter	2.1±0.1mm	2.1±0.1mm	2.2±0.1mm	2.45±0.1mm
Max.Fiber Counts Per Tube		4	8	16	24
Strength Member	Material	Glass Yarn			
Water Blocking Material		Water Blocking Glass Yarn			
Corrugated Steel Tape	Material	Plastic Coated Steel Tape (PSP)			
	Thickness	0.2±0.05mm			
Outer Jacket	Material	MDPE			
	Color	Black			
	Thickness(mm)	1.7			
Max.Tensile Strength		3000 N			
Cable Diameter(mm)		7.3±0.3mm	7.3±0.3mm	7.5±0.3mm	8.0±0.3mm
Net weight (Kg/km)		55 ±10Kg	55 ±10Kg	57 ±10Kg	60 ±10Kg
Static Bending Radius		10 D/mm			
Dynamic Bending Radius		20 D/mm			

2.2 TEMPERATURE RANGE

Operating temperature	- 40℃~+70℃
Store/Transport temperature	- 40℃~+70℃
Installation temperature	- 5℃~+50℃

3. FIBER AND LOOSE BUFFER TUBE IDENTIFICATION

NO.	1											
Tube Color	White											
NO.	1	2	3	4	5	6	7	8	9	10	11	12
Fibers Color	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua
NO.	13	14	15	16	17	18	19	20	21	22	23	24
Fibers Color	Blue ●	Orange ●	Green ●	Brown ●	Gray ●	White ●	Red ●	Colourless ●	Yellow ●	Violet ●	Pink ●	Aqua ●

4. OPTICAL FIBER

4.1 The Optical and Geometrical Performance of Single Mode Fiber (ITU -T G.652D)

ITEMS	UNITS	SPECIFICATION
Fiber Type	-	G652D
Attenuation	dB/km	1310nm $\leq$ 0.36 1550nm $\leq$ 0.22
Chromatic Dispersion	ps/nm.km	1310nm $\leq$ 3.5 1550nm $\leq$ 18 1625nm $\leq$ 22
Zero Dispersion Slope	ps/nm ² .km	0.093
Zero Dispersion Wavelength	nm	1300 ~ 1324
PMD (M=20, Q=0.01%)	ps/ $\sqrt{\text{km}}$	$\leq$ 0.2
Cut-off Wavelength (λ_{cc})	nm	$\leq$ 1260
Attenuation vs. Bending (60mm x100turns)	dB	$\leq$ 0.1 at 1625nm
Mode Field Diameter@1310nm	μm	9.2 ± 0.4
Core-Clad Concentricity	μm	$\leq$ 0.6
Cladding Diameter	μm	125 ± 1
Cladding Non-circularity	%	$\leq$ 0.8
Coating Diameter	μm	245 ± 10
Proof Test	Gpa	$\geq$ 0.70
Temperature Dependence	dB	$\leq$ 0.5 (-60°C to +85°C)

4.2 The Optical and Geometrical Performance of Multi Mode Fiber (ITU -T G651)

ITEMS		UNITS	SPECIFICATION				
Fiber Type		-	OM1	OM2	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	50.0 ± 2.5
Fiber Core Non-Circularity		%	≤ 6.0	≤ 6.0	≤ 6.0	≤ 6.0	≤ 6.0
Cladding Diameter		μm	125.0 ± 1	125.0 ± 1	125.0 ± 1	125.0 ± 1	125.0 ± 1
Cladding Non- circularity		%	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0
Coating Diameter		μm	245.0 ± 10	245.0 ± 10	245.0 ± 10	245.0 ± 10	245.0 ± 10
Coat- Clad Concentricity		μm	≤ 12.0	≤ 12.0	≤ 12.0	≤ 12.0	≤ 12.0
Coating Non- circularity		%	≤ 8.0	≤ 8.0	≤ 8.0	≤ 8.0	≤ 8.0
Core- Clad Concentricity		μm	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Attenuation	@850nm	dB/km	3.0	3.0	3.0	3.0	3.0
	@1300nm		1.0	1.0	1.0	1.0	1.0

OFL BW	@850nm	MHz • km	≥160	≥500	≥700	≥1500	≥3500
	@1300nm		≥500	≥500	≥500	≥500	≥500
10GBASE-SR	@850nm	M	-	-	150	300	550
Theory numerical aperture		/	0.275±0.015	0.200±0.015			

5. Mechanical and Environmental Performance of the Cable

NO.	ITEMS	TEST METHOD	ACCEPTANCE CRITERIA
1	Tensile Loading Test	#Test method: IEC 60794-1-E1 -. load: 3000N -. Cable length: ≥ 50 m Load time: 1 minutes	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
2	Crush Resistance Test	#Test method: IEC 60794-1-E3 -.Long load: 300 N/100mm -.Short load: 1000 N/100mm Load time: 1 minutes	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
3	Impact Resistance Test	#Test method: IEC 60794-1-E4 -.Impact height: 1 m -.Impact weigh: 450 g -.Impact point: ≥ 5 -.Impact frequency: ≥ 1/point	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
4	Repeated Bending Test	#Test method: IEC 60794-1-E6 -.Mandrel diameter: 20 D -.Subject weight: 15 Kg -.Bending frequency: 30 times -.Bending speed: 2sec/cycle	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
5	Torsion Test	#Test method: IEC 60794-1-E7 -.Length: 1m -.Subject Weight: 15kg -.Angle: ±180 degree -.Frequency: ≥ 10/point	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
6	Water Penetration Test	#Test method: IEC 60794-1-F5B -.Height of pressure head: 1 m -.Length of specimen: 3 m -.Test time: 24 hours	-. No leakage through the open cable end
7	Temperature Cycling Test	#Test method: IEC 60794-1-F1 -.Temperature steps: + 20℃、- 40℃、+ 70℃、+ 20℃ -.Testing Time: 12 hours/step -.Cycle index: 2	-. Attenuation increment @1550nm : ≤ 0.1 dB -. No jacket cracking and fiber breakage
8	Drop Performance	#Test method: IEC 60794-1-E14 -.Testing length: 30cm -.Temperature range: 70±2℃ -.Testing Time: 24hours	-.No filling compound drop out

6. PACKAGE AND MARK

6.1 PACKAGE

Not allowed two length units of cable in one drum, two ends should be sealed, Two ends should be packed inside drum, reserve length of cable not less than 3 meters.

Type	Length	Drum	Size (L×W×H)
7.5mm	2000M	Plywood Wood Drum	73*75*73cm
8.0mm	2000M	Plywood Wood Drum	83*75*83cm

6.2 Cable MARK

Cable shall be permanently marked in English at regular intervals with the following information.

NETSYSTEM

↑

Name of Manufacturer

Outdoor Optical Cable

↑

Type and Core Number

GYFXTS

↑

Fiber Type

12Fo SM PE

↑

Production Time and Cable Length

Document Type	Spec. No.
Tech.Specification	1-2023082801A

Approved by	Prepared by	Date
-	Richard	28-Aug-23