

# Specification

FOR  
**Self-Supporting  
Armored Optic Cable**

---

**[ GYFTC8Y ]**

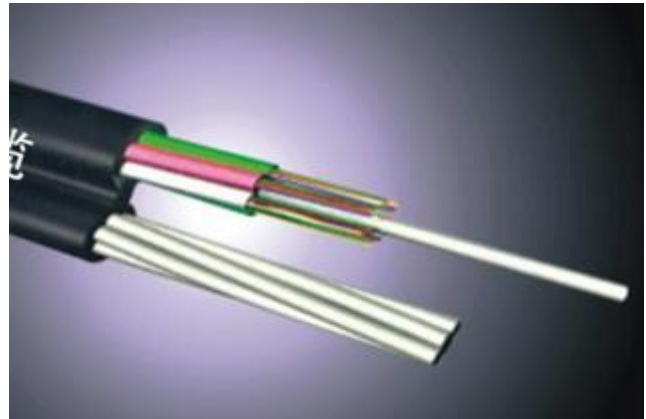
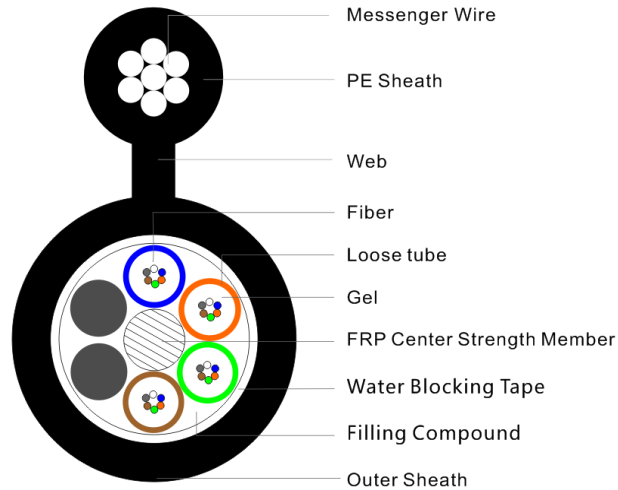
Canal autorizado:

**Unicor s.a.**

[www.unicorsa.com.ar](http://www.unicorsa.com.ar)

## 1. CABLE CONSTRUCTION

### 1.1. CROSS SECTIONAL DIAGRAM



### 1.2. TECHNICAL SPECIFICATION

<b>Fiber count</b>		2~30	32~36	38~60	62~72	74~84
Loose Tube	OD(mm):	1.8±0.1	1.8±0.1	2±0.1	2±0.1	2±0.1
	Material:	PBT				
Max fiber count/tube		6	6	12	12	12
Core unit		5	6	5	6	7
Steel/Coating (mm)		1.8	1.8	1.8	2.0	2.0/2.7
Water Block Material:		Water blocking Compound				
Supporting wire (mm)		7*1.0mm				
Sheath	Thickness:	Non. 1.5mm				
	Material:	PE				
OD of cable (mm)		8.8*15.6	8.8*15.6	9.4*16.2	9.4*16.2	10.1*16.9
Net weight (kg/km)		110	110	114	125	136
<b>Fiber count</b>		86~96	98~108	110~120	122~132	134~144
Loose Tube	OD(mm):	2.0±0.1	2.0±0.1	2.0±0.1	2.0±0.1	2.0±0.1
	Material:	PBT				
Max fiber count/tube		12	12	12	12	12
Core unit		8	9	10	11	12
Steel/Coating (mm)		2.5/3.4	2.5/4.0	3.0/4.7	3.0/5.3	3.0/6.0
Water Block Material:		Water blocking Compound				
Supporting wire (mm)		7*1.0mm				
Sheath	Thickness:	Non. 1.5mm				

Material:	PE				
OD of cable (mm)	10.8*17.6	11.4*18.2	12.1*18.9	12.7*19.5	13.4*20.2
Net weight (kg/km)	144	154	168	179	190

## 2. FIBER AND LOOSE BUFFER TUBE IDENTIFICATION

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

## 3.OPTICAL FIBER

### 3.1 Single Mode Fiber

LTEMS	UNITS	SPECIFICATION	
Fiber type		G652D	G657A
Attenuation	dB/km	1310nm ≤ 0.36 1550nm ≤ 0.22	
Chromatic Dispersion	ps/nm.km	1310nm ≤ 3.5 1550nm ≤ 18 1625nm ≤ 22	
Zero Dispersion Slope	ps/nm <sup>2</sup> .km	≤ 0.092	
Zero Dispersion Wavelength	nm	1300 ~ 1324	
Cut-off Wavelength (λ <sub>cc</sub> )	nm	≤ 1260	
Attenuation vs. Bending (60mm x100turns)	dB	(30mm radius, 100ring) ≤ 0.1 @ 1625nm	(10mm radius, 1ring) ≤ 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

LTEMS		UNITS	SPECIFICATION				
			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		
Fiber Core Non-circularity		%	≤6.0	≤6.0	≤6.0		
Cladding Diameter		µm	125.0±1.0	125.0±1.0	125.0±1.0		
Cladding Non-circularity		%	≤2.0	≤2.0	≤2.0		
Coating Diameter		µm	245±10	245±10	245±10		
Coat-Clad Concentricity		µm	≤12.0	≤12.0	≤12.0		
Coating Non-circularity		%	≤8.0	≤8.0	≤8.0		
Core-Clad Concentricity		µm	≤1.5	≤1.5	≤1.5		
Attenuation	850nm	dB/km	3.0	3.0	3.0		
	1300nm	dB/km	1.5	1.5	1.5		
OFL	850nm	MHz . km	≥160	≥200	≥700	≥1500	≥3500
	1300nm	MHz . km	≥300	≥400	≥500	≥500	≥500
The biggest theory numerical aperture		/	0.275±0.015	0.200±0.015	0.200±0.015		

### 4. Mechanical and Environmental Performance of the Cable

NO.	ITEMS	TEST METHOD	ACCEPTANCE CRITERIA
1	Tensile Loading Test	#Test method:IEC 60794-1-E1 -. Long-tensile load: 1000N -. Short-tensile load: 3000N -. Cable length: ≥50m	-. Attenuation increment@1550nm:≤0.1dB -. 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:≤0.1dB -. No jacket cracking and fiber breakage
3	Impact Resistance Test	#Test method:IEC 60794-1-E4 -.Impact height: 1 m	-. Attenuation increment@1550nm:≤0.1dB

		<ul style="list-style-type: none"> <li>-Impact weigh: 450 g</li> <li>-Impact point: <math>\geq 5</math></li> <li>-Impact frequency: <math>\geq 3/\text{point}</math></li> </ul>	- No jacket cracking and fiber breakage
4	Repeated Bending	<ul style="list-style-type: none"> <li>#Test method: IEC 60794-1-E6</li> <li>-Mandrel diameter: 20D (D = cable diameter)</li> <li>-Subject weight: 15kg</li> <li>-Bending frequency: 30 times</li> <li>-Bending speed: 2s/time</li> </ul>	<ul style="list-style-type: none"> <li>- Attenuation increment@1550nm:<math>\leq 0.1\text{dB}</math></li> <li>- No jacket cracking and fiber breakage</li> </ul>
5	Torsion Test	<ul style="list-style-type: none"> <li>#Test method: IEC 60794-1-E7</li> <li>-Length: 1m</li> <li>-Subject weight: 15kg</li> <li>-Angle: <math>\pm 180</math> degree</li> <li>-Frequency: <math>\geq 10/\text{point}</math></li> </ul>	<ul style="list-style-type: none"> <li>- Attenuation increment@1550nm:<math>\leq 0.1\text{dB}</math></li> <li>- No jacket cracking and fiber breakage</li> </ul>
6	Water Penetration Test	<ul style="list-style-type: none"> <li>#Test method: IEC 60794-1-F5B</li> <li>-Height of pressure head: 1m</li> <li>-Length of specimen: 3m</li> <li>-Test time: 24 hours</li> </ul>	- No leakage through the open cable end
7	Temperature Cycling Test	<ul style="list-style-type: none"> <li>#Test method: IEC 60794-1-F1</li> <li>-Temperature steps: <math>+20^{\circ}\text{C}</math>、<math>-40^{\circ}\text{C}</math>、<math>+70^{\circ}\text{C}</math>、<math>+20^{\circ}\text{C}</math></li> <li>-Testing Time: 24 hours/step</li> <li>-Cycle index: 2</li> </ul>	<ul style="list-style-type: none"> <li>- Attenuation increment@1550nm:<math>\leq 0.1\text{dB}</math></li> <li>- No jacket cracking and fiber breakage</li> </ul>
8	Drop Performance	<ul style="list-style-type: none"> <li>#Test method: IEC 60794-1-E14</li> <li>-Testing length: 30cm</li> <li>-Temperature range: <math>70\pm 2^{\circ}\text{C}</math></li> <li>-Testing Time: 24 hours</li> </ul>	- No filling compound drop out
9	Temperature	Operating: $-40^{\circ}\text{C}\sim +60^{\circ}\text{C}$ Store/Transport : $-50^{\circ}\text{C}\sim +70^{\circ}\text{C}$ Installation $-20^{\circ}\text{C}\sim +60^{\circ}\text{C}$	

## 5. FIBER OPTIC CABLE BENDING RADIUS

Static bending:  $\geq 10$  times than cable out diameter

Dynamic bending:  $\geq 20$  times than cable out diameter.

## 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.

## 6.2 MARK

Cable Mark: Brand、Cable type、Fiber type and counts、Year of manufacture、Length marking 。

## 8. TEST REPORT

Test report and certification supplied.