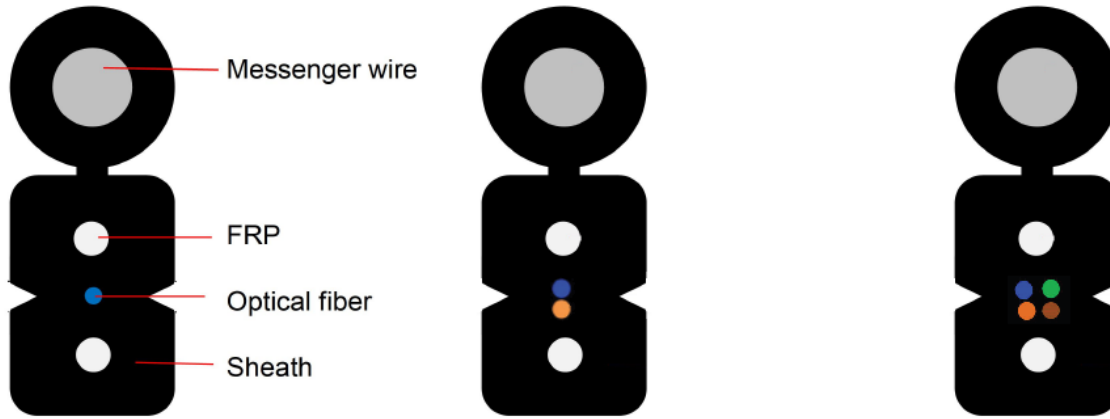


# GJYXFCH

## 1. Cable cross-section



## 2. Cable Specification

### 2.1 Introduction

The optical fiber unit is positioned in the center. Two parallel FRP are placed at two sides. LSZH outer sheath with messenger wire combined.

### 2.2 Fiber color code

No.	1	2	3	4
Color	Blue	Orange	Green	Brown

### 2.3 Optical fiber type and properties

G657A2 Characteristic of Optical Fiber

Item	Unit	Specification	
		G. 657A2	
Mode field diameter	1310nm	$\mu\text{m}$	$8.6 \pm 0.4$
	1550nm	$\mu\text{m}$	$9.6 \pm 0.5$
Cladding diameter	$\mu\text{m}$	$125.0 \pm 0.7$	
Cladding non-circularity	%	$\leq 1.0$	
Core concentricity error	$\mu\text{m}$	$\leq 0.5$	
Coating diameter	$\mu\text{m}$	$245 \pm 5$	
Coating/cladding concentricity error	$\mu\text{m}$	$\leq 12$	
Cable cut-off wavelength	nm	$\leq 1260$	
Attenuation Coefficient	1310nm	dB/km	$\leq 0.35$
	1550nm	dB/km	$\leq 0.21$
Macro-bend loss (1 turn, 7.5mm radius)	1550nm	dB	$\leq 0.5$
	1625nm	dB	$\leq 1.0$
Proof stress level	kpsi	$\geq 100$	

Other parameters meet standard ITU-T G.657.

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## 2.4 Cable structure and parameter

Item	Contents	Unit	Value
Optical Fiber	/	/	1 / 2 / 4
Strength member	Material	/	FRP
	Diameter	mm	Nominal 0.5
Messenger wire	Diameter	mm	Nominal 1.0
	Material	/	Steel wire
Outer jacket	Dimension	mm	5.2(±0.2)*2.0(±0.1) Without messenger wire: 3.0(±0.1)*2.0(±0.1)
	Material	/	LSZH
	Color	/	Black
Tensile performance	Short term	N	600
	Long term	N	300
Crush	Short term	N/100mm	2200
	Long term	N/100mm	1000
Cable attenuation		dB/km	≤ 0.4 at 1310nm, ≤ 0.3 at 1550nm
Cable weight (Approx.)		kg/km	18

## 3. Characteristic of Optical Cable

### 3.1 Min. bending radius without messenger wire

Static: 15mm

Dynamic: 30mm

### 3.2 Application temperature range

Operation: -20°C ~ +70°C

Installation: -20°C ~ +60°C

Storage/transportation: -20°C ~ +70°C

### 3.3 Main mechanical & environmental performance test

Item	Test Method	Acceptance Condition
Tensile Strength IEC 60794-1-2-E1	- Load: Short term tension - Length of cable: ≥ 50m - Load time: 1min	- Fiber strain ≤ 0.6%. - No fiber break and no sheath damage.
	- Load: Long term tension - Length of cable: ≥ 50m - Load time: 1min	- No fiber break and no sheath damage.
Crush Test IEC 60794-1-2-E3	- Load: Short term crush - Load time: 1min	- No fiber break and no sheath damage.
	- Load: Long term crush - Load time: 1min	- No fiber break and no sheath damage.
Impact Test IEC 60794-1-2-E4	- Points of impact: 3 - Times of per point: 1 - Impact energy: 1J	- No fiber break and no sheath damage.

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Item	Test Method	Acceptance Condition
Repeated Bending IEC 60794-1-2-E6	<ul style="list-style-type: none"> <li>- Bending radius: 30 x Cable height</li> <li>- No. of cycle: 300</li> <li>- Load: 20N</li> </ul>	<ul style="list-style-type: none"> <li>- Loss change <math>\leq 0.4\text{dB}@1550\text{nm}</math> after test.</li> <li>- No fiber break and no sheath damage.</li> </ul>
Torsion IEC 60794-1-2-E7	<ul style="list-style-type: none"> <li>- Length: 1m</li> <li>- Twist angle: <math>\pm 180^\circ</math></li> <li>- No. of cycle: 20</li> </ul>	<ul style="list-style-type: none"> <li>- No fiber break and no sheath damage.</li> </ul>
Temperature Cycling IEC 60794-1-2-F1	<ul style="list-style-type: none"> <li>- Temperature: <math>-20^\circ\text{C}\sim+70^\circ\text{C}</math></li> <li>- Time of each step: 8h</li> <li>- Number of cycle: 2</li> </ul>	<ul style="list-style-type: none"> <li>- Loss change <math>\leq 0.4\text{dB}/\text{km}@1550\text{nm}</math>.</li> <li>- No fiber break and no sheath damage.</li> </ul>
Flame retardant IEC 60332-1	<ul style="list-style-type: none"> <li>- Sample length: <math>600\text{mm} \pm 25\text{mm}</math></li> <li>- Time: 60s</li> </ul>	<ul style="list-style-type: none"> <li>- Pass the single cable vertical flame propagation test.</li> </ul>

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