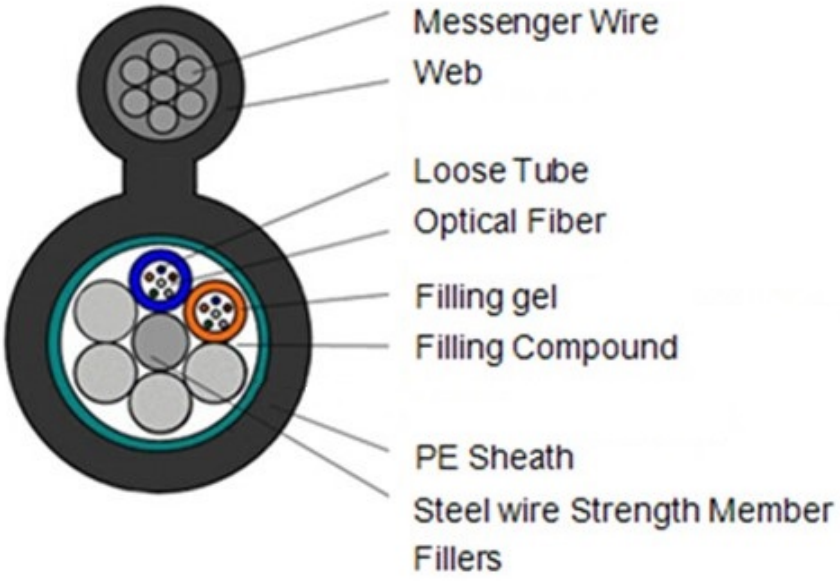
TECHNICAL DATA SHEET
FOR
Single Mode Optical Fiber Cable With Messenger
Type: Multi-tube and Self-Supporting Optical Fiber Cable

A. Features:

1). Core cable filled ointment to ensure that the vertical water blocking effect.
2). Loose pieces of casing around the centres of the SZ-cutter.
3). When not set up another release strand, the rate of increase of 3-4 times.

B. Structure:

Strengthening of the centre for wire, or fiber loose-tube PBT may have filled rope around the outside package, the cable core filled ointment, with water blocking vertical packages, PE layer of Protection, and with the Strand (or wire) Parallel 8 fonts placed at the same time as cable sheathing.



C. Application:

Long distance and interoffice communication

D. Laying mode:

By Aerial

E. Technical parameter:

Fiber count (core)	24 (2Tx12F)	
Outer diameter (±0.5mm)	8.8 x 4.9	
Loose tube (mm)	3.0	
Steel Stranded wire (mm)	2.7	
Weight (Kg/Km)	125	
Long tensile strength (N)	3000	
Crushing (short) (N/100mm)	1000	
Bending radius	Static	10 times of diameter
	Dynamic	20 times of diameter
Temperature range (0°C)	-40°C — +60°C	

Fiber Color Identification

Unit S.N.	1	2	3	4	5
Fiber S.N.	Blue Tube	Orange Tube	Green Tube	Brown Tube	Natural Filler
1	Blue	Blue	Blue	Blue	N/A
2	Orange	Orange	Orange	Orange	N/A
3	Green	Green	Green	Green	N/A
4	Brown	Brown	Brown	Brown	N/A
5	Slate	Slate	Slate	Slate	N/A
6	White	White	White	White	N/A

The properties of single mode optical fiber (ITU-T Rec. G.652D)

Parameter	Specification
Fiber type	Single mode
Fiber material	Doped silica
Attenuation coefficient @ 1310 nm @ 1383 nm @ 1550 nm @ 1625 nm	 ≤ 0.36 dB/km ≤ 0.36 dB/km ≤ 0.22 dB/km ≤ 0.30 dB/km
Point discontinuity	≤ 0.05 dB
Cable cut-off wavelength	≤ 1260 nm
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	≤ 0.093 ps/(nm^2.km)
Chromatic dispersion @ 1288 ~ 1339 nm @ 1271 ~ 1360 nm @ 1550 nm @ 1625 nm	 ≤3.5 ps/(nm. km) ≤5.3 ps/(nm. km) ≤18 ps/(nm. km) ≤22 ps/(nm. km)
PMD_Q (Quadrature average*)	≤0.2 ps/km$^{1/2}$
Mode field diameter @ 1310 nm	9.2±0.4 um
Core/Clad concentricity error	≤ 0.5 um
Cladding diameter	125.0 ± 0.7 um
Cladding non-circularity	≤1.0%
Primary coating diameter	245 ± 10 um
Proof test level	**100 kpsi (=0.69 Gpa), 1%**
Temperature dependence 0°C~ +70°C @ 1310 & 1550nm	≤ 0.1 dB/km

* PMD_Q is a link of 20 cable sections (M) and a probability level of 0.01% (Q).

Main mechanical & environmental characteristics test

NO	ITEM	TEST METHOD	ACCEPTANCE REQUIREMENTS
1	Tensile Strength IEC 794-1-E1	- Load: 6, 000 N - Length of cable under load: 50m	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
2	Crush Test IEC 60794-1-E3	- Load: 1, 000 N/100mm - Load time: ≥1min	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
3	Impact Test IEC 60794-1-E4	- Points of impact: 5 - Times of per point: 5 - Impact energy: 4.5Nm - Radius of hammer head: 12.5mm - Impact rate: 2sec/cycle	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
4	Repeated Bending IEC 60794-1-E6	- Bending Dia.: 20 x OD - Load: 150N - Flexing rate: 3sec/cycle - No. of cycle: 30	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
5	Torsion IEC 60794-1-E7	- Length: 1m - Load: 150N - Twist rate: 1min/cycle - Twist angle: ±180° - No. of cycle: 10	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
6	Water Penetration IEC 60794-1-F5B	- Height of water: 1m - Sample length: 3 m - Time: 24 hour	- No water shall have leaked from the opposite end of cable
7	Temperature Cycling IEC 60794-1-F1	- Temperature step: +20℃→-40℃→+60℃ →+20℃ - Time per each step: 24 hrs - Number of cycle: 2	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
8	Compound Flow IEC 60794-1-E14	- Sample length: 30 cm - Temp: 70°C ± 2°C - Time: 24 hours	- No compound flow
9	Sheath High Voltage Test	- On line test - 9t KV (t-sheath thickness)	- No sheath breakdown