GTEK FIBER

Spec No.: GL26-0731D

TECHNICAL SPECIFICATION

Ribbon Cable
144-6912 250um

Email: info@geekfiwifi.com Phone & Whatsapp: 602-456-5656

1. General

1.1 This specification covers the requirements for the supply of optical fiber ribbon cables.
1.2 The single mode optical fiber cable comply with the requirements of this specification and generally meet any latest relevant ITU-T Recommendation G.657A1.

2. Fiber characteristics

2.1 G.657A1

2.1.1 Geometric characteristics

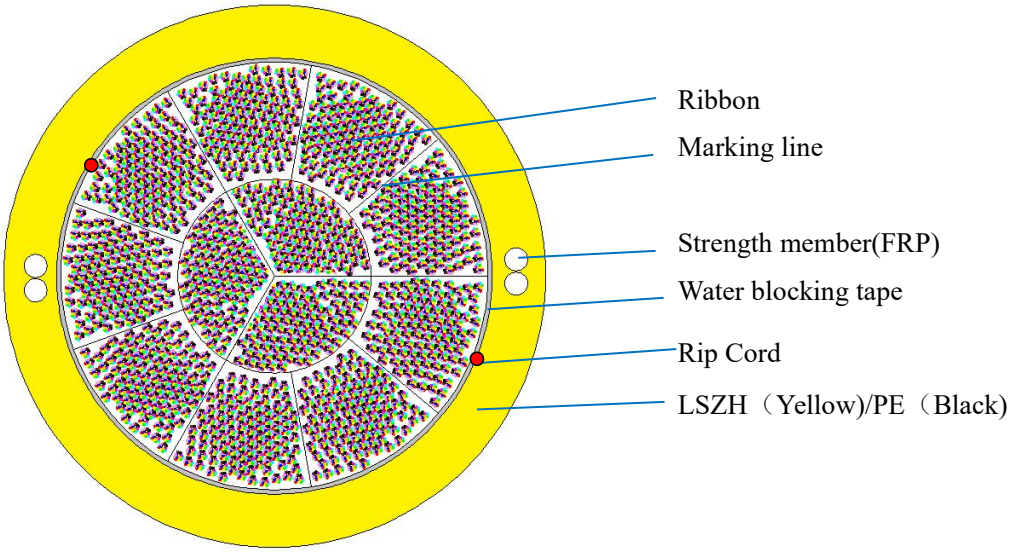
Item		Construction
Mode field diameter	At 1310nm	8.6±0.4μm
Cladding diameter		125±0.7μm
Core concentricity error		≤0.5μm
Cladding non-circularity		≤0.7%
Cut-off wavelength (λcc) (for cable)		≤1260nm
Cut-off wavelength (λc) (for fiber)		1180nm~1330nm
Primary coating diameter	(Not included color layer)	245±10μm
	(Included color layer)	250±10μm
Coating-cladding concentricity error		≤12.0μm
Fiber curl radius		≥4m

2.1.2 Transmission characteristics

Item		Performance
Attenuation	At 1310nm	≤0.40dB/km
	At 1550nm	≤0.30dB/km
Macro bending loss	Φ=30mm, 10turns at 1550nm	≤0.25dB
	Φ=30mm, 10turns at 1625nm	≤1.0dB
	Φ=20mm, 1turn at 1550nm	≤0.75dB
	Φ=20mm, 1turn at 1625nm	≤1.5dB
Chromatic dispersion	Within 1288~1339nm	≤3.5ps/nm·km
	At 1550nm	≤18ps/nm·km
Zero dispersion wavelength		1300~1324nm
Zero dispersion slope		≤0.092ps/nm^2·km

3 Optical Fiber Cable

3.1 Cross section



3.2 Dimension of the cable

Amount of fiber	Fibers per ribbon	Ribbons in the cable		Diameter (Appr.)	Weight(LSZH) (Appr.)	Weight(PE) (Appr.)
		16F	12F	mm	Kg/km	Kg/km
144	16/12	9	12	10.5	124	93
288	16/12	18	24	12.5	158	118
432	16/12	27	36	14.0	185	139
576	16/12	36	48	15.0	207	157
864	16/12	54	72	17.5	257	196
1152	16/12	72	96	19.5	301	231
1728	16/12	108	144	24.0	394	305
3456	16/12	216	288	31.0	585	480
6912	16/12	432	576	41.6	953	788

The tolerance for the Weight and the Cable diameter is ±10%

The above structural dimensions are preliminary designs and may be adjusted during actual production.

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3.3 Performance

NO	ITEM	TEST METHOD	SPECIFICATION
1	Tensile performance IEC60794-1-21-E1	-Short-term load:1320N - Time: 5 minute	Loss change ≤ 0.05 dB@1550 nm (after test) - No sheath damage
2	Crush test IEC60794-1-21-E3	- Load: 1000 N /100mm - Time: 5 minute - Length: 100 mm	Loss change ≤ 0.05 dB@1550 nm (during test) - No sheath damage
3	Impact test IEC60794-1-21-E4	- Impact hight:1m - Impact weight:450g - Points of impact: 3 - Times of per point: 1	- No fiber break - No sheath damage
4	Repeated bending IEC60794-1-21-E6	- Bending radius.: 20 × D - Load: 150N - Flexing rate: 2sec/cycle - No. of cycle: 25	- No fiber break - No sheath damage
5	Bend test IEC60794-1-21-E11	- Mandrel diameter: 20 × D - No. of cycle: 3	- No fiber break - No sheath damage
6	Twist IEC60794-1-21-E7	- Length: 1 m - Load: 150N - Twist rate: ≤60sec/cycle - Twist angle: ±90° - No. of cycle: 5	- No fiber break - No sheath damage
7	Temperature Cycling IEC60794-1-22-F1	- Temperature step: +20°C→-20°C→+70°C→+20°C - Number of cycle: 2 turns - Time per each step: 12 hrs	- Loss change ≤ 0.15dB/km@1550 nm (during test) - Loss change ≤ 0.05dB/km@1550 nm (after test) - No sheath damage

D*: Cable diameter

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3.4 Color Coding of Optical Units and Ribbon

Fiber color code in ribbon

Position	Fiber Color
1	Blue
2	Orange
3	Green
4	Brown
5	Grey
6	White
7	Red
8	Black
9	Yellow
10	Violet
11	Pink
12	Aqua
13	Olive
14	Carmine
15	Dark brown
16	Lime

4. Sheath marking