

SPECIFICATION

Optical Fiber Cable
Loose tube, all dielectric,
Dry core, Micro air blown cable
GCYFTY 144B1 (24F/tube)

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1. General

1.1 This specification covers the requirements for the supply of single-mode optical fiber cables.

1.2 The single mode optical fiber cables comply with the requirements of this specification and generally meet any latest relevant ITU-T Recommendation G.652D.

2. Fiber characteristics

2.1 G.652D

2.1.1 Geometric characteristics

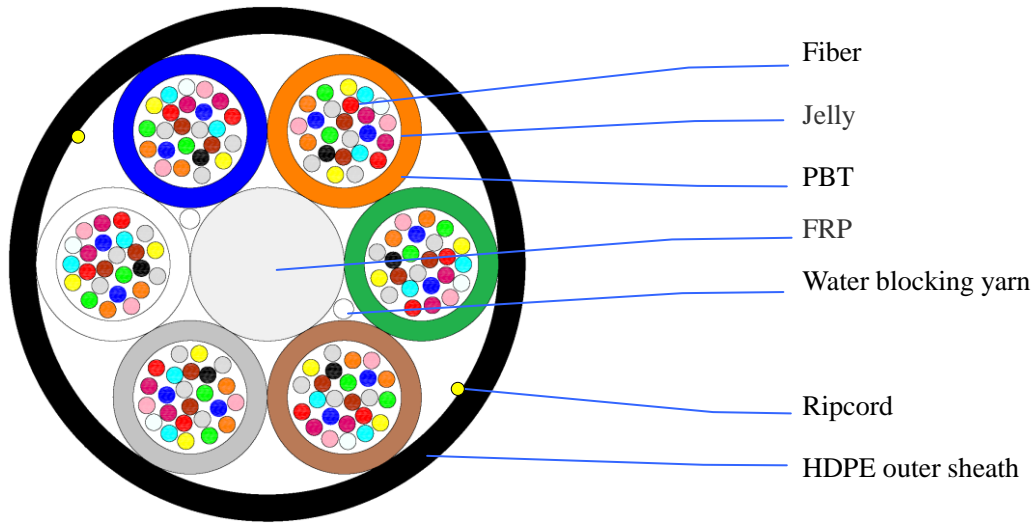
Item		Construction
Mode field diameter	At 1310nm	9.2±0.4μm
Cladding diameter		125±1.0μm
Core concentricity error		≤0.7μm
Cladding non-circularity		≤1.0%
Cut-off wavelength (λ_{cc}) (for cable)		≤1260nm
Cut-off wavelength (λ_c) (for fiber)		1180nm~1330nm
Primary coating diameter	(Not included color layer)	245±10μm
	(Included color layer)	250±15μm
Coating-cladding concentricity error		≤12.5μm
Fiber curl radius		≥4m

2.1.2 Transmission characteristics

Item		Performance
Attenuation	At 1310nm	≤0.36dB/km
	At 1550nm	≤0.25dB/km
Macro bending loss	Φ=60mm, 100turns at 1550nm	≤0.1dB
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	Max. no. of the fiber per tube	No. of tube positions	*Nom. thickness of sheath	Diameter (Appr.)	Weight (Appr.)
			mm	mm	Kg/km
144	24	6	0.5	7.6±0.4	50

*Note: The minimum thickness of the sheath is 0.3mm.



3.3 Performance

NO	ITEM	TEST METHOD	SPECIFICATION
1	Tensile performance IEC60794-1-21-E1	- Load: 700N - Time: 5 minutes	- Loss change ≤ 0.05 dB @1550 nm (after test) - Fiber strain ≤ 0.6 % - No sheath damage
2	Crush test IEC60794-1-21-E3	- Load: 1000 N /100mm - Time: 1 minute - Length: 100 mm	- No fiber degradation - No sheath damage
3	Impact test IEC60794-1-21-E4	- Impact high: 1m - Impact weight: 300g - Points of impacts: 3 - Impacts per point: 1	- No fiber degradation - No sheath damage
4	Repeated bending IEC60794-1-21-E6	- Bending radius: $20 \times D$ - Load: 5kg - Flexing rate: 3sec/cycle - No. of cycle: ≥ 35	- No fiber degradation - No sheath damage
5	Water penetration IEC60794-1-22-F5B	- Height of water: 1m - Sample length: 3 m - Time: 24 hr	- No drip through the cable core assembly
6	Twist / Torsion IEC60794-1-21-E7	- Length: 1 m - Load: 100N - Twist rate: 6sec/cycle - Twist angle: $\pm 180^\circ$ - No. of cycle: 10	- No fiber degradation - No sheath damage
7	Temperature Cycling IEC60794-1-22-F1	- Temperature step: $+20^\circ\text{C} \rightarrow -40^\circ\text{C} \rightarrow +70^\circ\text{C} \rightarrow +20^\circ\text{C}$ - Number of cycle: 2 turns - Time per each step: 12 hrs	- Loss change ≤ 0.05 dB @1550 (90%) - Loss change ≤ 0.15 dB @1550 (100%) - No sheath damage

D*: Cable diameter

3.7 Color Coding of Loose Tubes and Fibers

Fiber color code

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	Blue with black ring
14	Orange with black ring
15	Green with black ring
16	Brown with black ring
17	Grey with black ring
18	White with black ring
19	Red with black ring
20	Natural with black ring
21	Yellow with black ring
22	Violet with black ring
23	Pink with black ring
24	Aqua with black ring



Color codes for Loose Tube

Position	Loose Tube Color
1	Blue
2	Orange
3	Green
4	Brown
5	Grey
6	White

4. Sheath Marking

