

Scope

1.1. This document details Flat and Fig-8 Flat drop cables generally for installation in indoor environment.

2. Fibers

2.1. Fibers supplied against this specification must meet the requirements of ITU-T recommendation G.657a1 fibers.

2.2. G.657a1 fiber(Bending insensitive fiber)

2.2.1. Optical specifications

Category	Description		Specifications
Type			G.657a1
Optical Specifications	Attenuation	@1310nm	$\leq 0.35\text{dB/km}$
		@1383nm	$\leq 0.35\text{dB/km}$
		@1550nm	$\leq 0.22\text{dB/km}$
		@1625nm	$\leq 0.25\text{dB/km}$
	Attenuation Non-uniformity		$\leq 0.03\text{ dB}$
	Point Discontinuity @1310nm,1550nm		$\leq 0.03\text{ dB}$
	Attenuation vs. Wavelength	@1285~1330nm	$\leq 0.05\text{ dB/km}$
		@1525~1575nm	$\leq 0.05\text{ dB/km}$
	Zero Dispersion Wavelength		1300~1324
	Zero Dispersion Slope		$\leq 0.092\text{ps/nm.km}$
	Dispersion	@1310nm	$\leq 3.5\text{ ps/nm.km}$
		@1550nm	$\leq 18\text{ ps/nm.km}$
	Polarization Mode Dispersion(PMD)		$\leq 0.2\text{ps/km}^{1/2}$
	PMD Link value		$\leq 0.2\text{ps/km}^{1/2}$
	Cable Cutoff Wavelength(λ_{cc})		$\leq 1260\text{nm}$
	Macro bending Loss (100 turns; $\Phi 60\text{mm}$) @1625nm		$\leq 0.10\text{ dB}$

	Mode Field Diameter	@1310nm	9.2±0.6μm
		@1550nm	10.4±0.8μm
	Effective Group Index of Refraction	@1310nm	1.4675
		@1550nm	1.4681
Dimensional Specifications	Fiber Curl Radius		≥4.0m
	Cladding Diameter		125±0.8μm
	Mode field Core/clad concentricity		≤0.5μm
	Cladding Non-Circularity		≤1.0%
	Coating Diameter		245±5μm
	Coating/Cladding Concentricity		≤8μm
	Coating Non-Circularity		≤6.0%
Mechanical Specifications	Proof Test		≥1.0%
	Peak Coating Strip Force		1.0~8.9N
Environmental Specifications	Temperature Cycling Induced Attenuation @1310nm,1550nm,1625nm(-60°C to+85°C)		≤0.05 dB/km

2.2.2. Dimensional Specifications

Parameters	Unit	Specifications
Cladding Diameter	um	125.0 ± 0.7
Cladding Non-circularity	%	≤1.0
Core/Cladding Concentricity Error	um	≤ 0.5
Coating Diameter [Uncolored]	um	242 ± 5

3. Cable construction

3.1 A typical cable construction can be seen in the section 5 of the Contract.

3.2 Fiber color code

No.	1	2	3	4
Color	Blue	Orange	Green	Brown

3.3 Cable sheath marking

3.3.1 Marking legend

To be determined

3.3.2 The color of marking method is Ink Jet printing.

- Black LSZH Jacket

3.4 Both ends of cable are protected in box to prevent ingress of water.

4. Cable Properties

4.1. Mechanical & Environmental properties

4.1.1 Minimum Cable bending radius: 15 mm (without supporting wire)

120 mm (with supporting wire)

4.1.2 Operating temperature range : -30°C to +70°C

4.1.3 Storage/Transport temperature range : -30°C to +70°C

4.1.4 Installation temperature range : -10°C to +50°C

4.2. Mechanical & Environmental Requirements

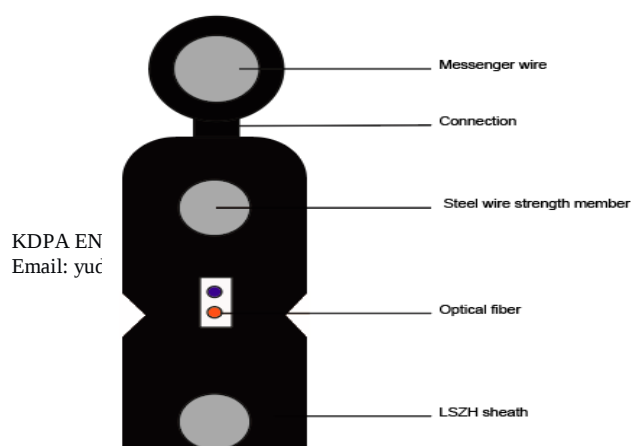
No	Item	Test Specification	Test Method	Specification
1	Tensile strength (Short term)	IEC 60794-1-2-E1	- Load: 80N (Flat cable) 600N (Fig-8 Flat cable include suspension wire) - Sample Length: 100m - Time: 5 minutes	- Attenuation change: $\leq 0.1\text{dB}$ at 1550nm After the test

	Tensile strength (Long term)		- Load: 40N(Flat cable) 100N(Fig-8 Flat cable include suspension wire) - Sample Length: 100m - Time: 60 minutes	- Attenuation change: ≤ 0.1dB at 1550nm During the test
2	Crush test	IEC 60794-1-2-E3	- Load: 500N/100mm - Plate size : 100mm x 100mm - Time: 5 minutes	- Attenuation change: ≤ 0.1dB at 1550nm After the test
3	Impact test	IEC 60794-1-2-E4	- Impact Energy: 1J - Radius of hammer: 300 mm - Impact points: 3 - Impact time/each point: 1	- Attenuation change: ≤ 0.1dB at 1550nm After the test
4	Bending test (without suspension wire)	IEC 60794-1-2-E11A	- Mandrel radius: 15mm - No. of turn: 1 - No. of cycle: 1	- Attenuation change: ≤ 0.1dB at 1550nm After the test
5	Temperature Cycling	IEC 60794-1-2-F1	- Temperature step: +20°C → -30°C → +70°C → +20°C - Number of cycle: 1 - Soak time: 4hrs / each step	- Attenuation change: ≤ 0.1dB/km at 1550nm
6	Flame Propagation	IEC 60332-1	- Sample length :600mm - Time : 60s	- Un-charred surface length: Min. 50mm - shall meet specification

- In case of the test 2, 3, and 4 the supporting wire of the specimen for testing shall be removed prior to the test

5.1 Cable Construction 4

5.1.1 Outdoor Fig-8 Flat Drop Cable drawing (not to scale)



5.1.2 Weights and dimensions

Fiber Count	Cable Diameter	Weight (Nominal)	Nominal Delivery Length per Reel ¹
	mm	kg/km	m
2	5.0*2.2(± 0.2)	22	1000 or 2000
Messenger Steel wire (mm)		Steel Strength member(mm)	
1.0 mm		2x0.4mm	

5.1.3 Cable Print

FTTH 2CORE G657A1 LSZH 03/2023 0001M.....1000M

*** No specify cable performance compliance with YD/T 1997-200