

# SPECIFICATION

Aerial Optical Fiber Cable  
ADSS, span 80/120/200m All-  
dielectric, self-supporting, single-  
jacket cable  
(CFOA-SM-ASx-S yFO (TS) NR)

## 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.652.

## 2. Fiber characteristics

### 2.1 G.652 D

#### 2.1.1 Geometric characteristics

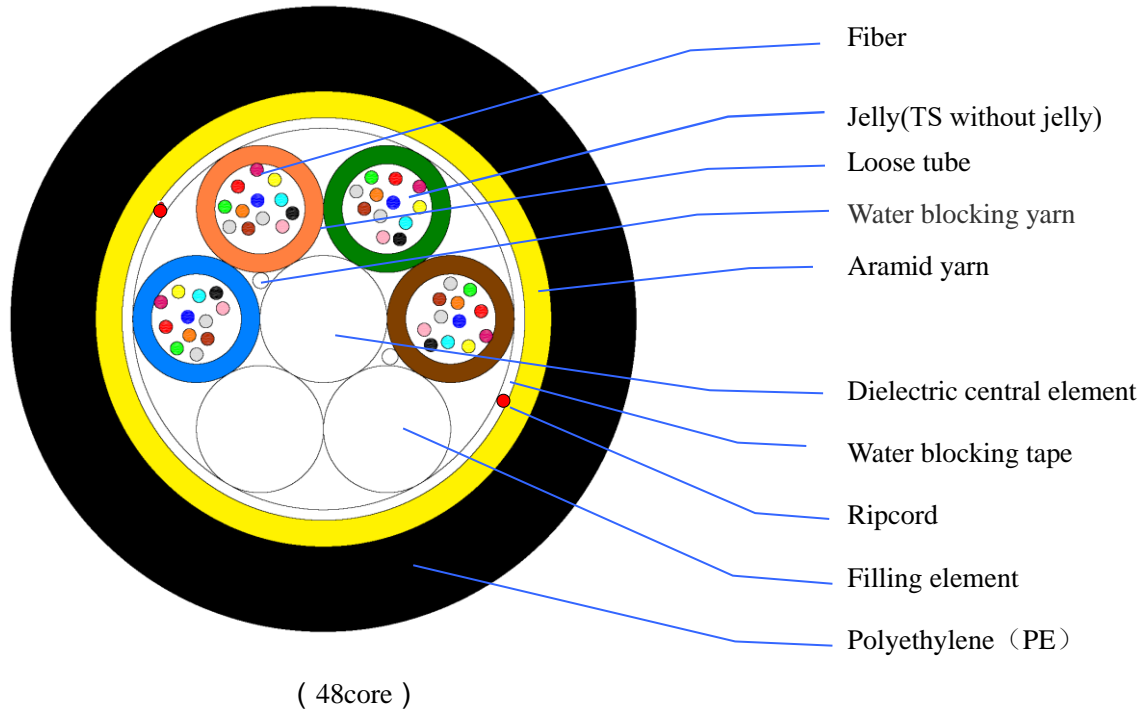
Item		Construction
Mode field diameter	At 1310nm	9.2±0.4μm
Cladding diameter		125±1μm
Core concentricity error		≤0.6μm
Cladding non-circularity		≤1.0%
Cut-off wavelength ( $\lambda_{cc}$ ) (for cable)		≤1260nm
Cut-off wavelength ( $\lambda_c$ ) (for fiber)		1180nm~1330nm
Primary coating diameter	(Not included color layer)	245±10μm
Coating-cladding concentricity error		≤12.5μm
Fiber curl radius		≥4m

#### 2.1.2 Transmission characteristics

Item		Performance
Attenuation	At 1310nm (Cabled)	≤0.36dB/km
	At 1310nm (Uncabled)	≤0.34dB/km
	At 1550nm (Cabled)	≤0.23dB/km
	At 1550nm (Uncabled)	≤0.21dB/km
Macro bending loss	Φ=60mm, 100turns at 1550nm	≤0.1dB
PMD	Link Design Value	≤0.2ps/km <sup>1/2</sup>
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 <sup>2</sup> km

### 3 Optical Fiber Cable

#### 3.1 ADSS Cross section



#### 3.2 Cable Characteristics

Amount of fiber	Max. no. of fibers per tube	No. of tube positions	Span 80m		Span 120m		Span 200m	
			Diameter (Appr.)	Weight (Appr.)	Diameter (Appr.)	Weight (Appr.)	Diameter (Appr.)	Weight (Appr.)
			mm	kg/km	mm	kg/km	mm	kg/km
2-12	2	6	9.7	71	9.7	71	9.8	72
18-36	6	6	10.6	85	10.6	85	10.7	87
48-72	12	6	11.5	100	11.5	100	11.7	103
96	12	8	13.1	131	13.2	133	13.4	138
120	12	10	14.7	163	14.8	166	15	172
144	12	12	16.4	200	16.5	205	16.7	211

\*Note: The nominal/minimum thickness of the outer jacket is 1.7/1.5 mm.

### 3.3 Mechanical specification

Span (m)	Maximum allowable tension (Mat)	Crush load	Fiber strain under Mat	Min. installation bend radius	Min. operation bend radius
80	1.5W	1W (Min. 1000N)	≤ 0.2 %	20D	10D
120	2W				
200	3W				

W: Cable weight every km

D: outer diameter of the cable

### 3.4 Performance

NO	ITEM	TEST METHOD	SPECIFICATION
1	Tensile performance IEC60794-1-21-E1	-Short term Load: refer to 3.3 - Time: 5 minutes	- Loss change ≤ 0.1 dB @ 1550 nm (after test) - Fiber strain ≤ 0.2 % - No sheath damage
2	Crush test IEC60794-1-21-E3	- Load: refer to 3.3 - Time: 5 minute - Length: 100 mm	Loss change ≤ 0.10 dB @ 1550 nm (during test) - No sheath damage
3	Impact test IEC60794-1-21-E4	- Impact hight: 1m - Impact weight: 300g - Points of impact: 3 - Times of per point: 1	Loss change ≤ 0.10 dB @ 1550 nm (during test) - No sheath damage
4	Repeated bending IEC60794-1-21-E6	- Bending radius: 20 × D - Load: 250N - Flexing rate: 2sec/cycle - No. of cycle: 25	- No fiber break - 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: 250N - Twist rate: ≤ 60sec/cycle - Twist angle: ±180 ° - No. of cycle: 5	Loss change ≤ 0.10 dB @ 1550 nm (during test) - No sheath damage
7	Temperature Cycling IEC60794-1-22-F1	- Temperature step: +20°C → -20°C → +65°C → +20°C - Number of cycle: 2 turns - Time per each step: 12 hrs	- Average Loss change ≤ 0.10dB/km (90%) - Maximum Loss change ≤ 0.15dB/km (100%) @ 1550 nm - No fiber degradation - No sheath damage

D\*: Cable diameter

SPEC.No: 2019011921

### 3.5 Color Coding of Loose Tubes and Fibers

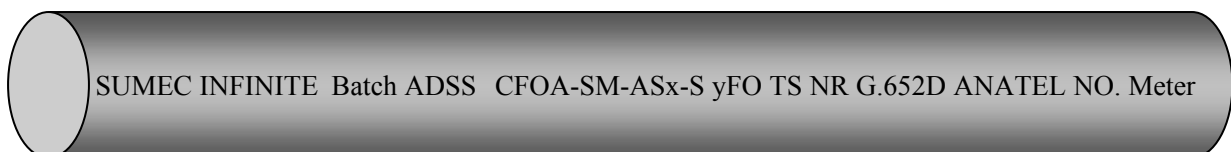
#### Fiber color code

Position	Fiber color
1	Green
2	Yellow
3	White
4	Blue
5	Red
6	Violet
7	Brown
8	Rose
9	Black
10	Grey
11	Orange
12	Aqua

#### Color codes for Loose Tube

Position	Fiber color
1	Green
2	Yellow
3	White
4	White
5	White
6	White
7	White
8	White
9	White
10	White
11	White
12	White

#### 4. Sheath marking



Remark: x-80, 120,200m span; y-up to 144 cores

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