

DUCT CABLE 6F OM3 - LSZH

1. GENERAL

1) SCOPE

This specification covers the general requirements and performance of CABLE which offered including optical characteristics, electrical characteristics, mechanical characteristics, geometrical characteristics.

2) REFERENCES

The CABLE which offered shall be designed, manufactured and tested according to international standards as follows:

ISO 9001	Quality Management Systems
ISO 14001	Environmental Management Systems
IEEE Std P.1222	IEEE Standard construction of composite fiber for use on electric utility power lines
IEC 60793-1	Optical fiber Part 1: Generic specifications
IEC 60793-2	Optical fiber Part 2: Product specifications
IEC 60794-1-2	Optical fiber cables – Part 4: Sectional specification – Aerial optical cables along electrical power lines
EIA/TIA 598	Color code of fiber optic cables
ITU-T G.650	Definition and test methods for the relevant parameters of single-mode fibers
ITU-T G.652	Characteristics of a single-mode optical fiber cable
ITU-T G.651	Characteristics of a multimode optical fiber cable
ITU-T G.657	Characteristics of Bending loss insensitive single mode fiber for access network

3) ANTI-RODENT AND FIRE RETARDANT PERFORMANCE

1. Rat-proof optical fiber cable with double layers of glass yarn 600T with thickness of 0.33mm.
2. Fire retardant with outer sheath of LSZH and water moisture resistance with cable jelly, filling compound and water blocking tape.

2. OPTICAL FIBER

OM3 Type

The optical fiber shall be made of high pure silica and germanium doped silica. UV curable acrylate material is applied over fiber cladding as optical fiber primary protective coating. The detail data of optical fiber performance are shown in the following table:

Category	Description	Specifications
Optical Characteristics	Attenuation Coefficient: at 850 nm at 1300 nm	≤2.3 dB/km ≤0.6 dB/km
	Mode Bandwidth: at 850 nm at 1300 nm	≥600MHz.km ≥500MHz.km ≥1200 MHz.km ≥500 MHz.km
	Numerical Aperture	0.200±0.015
	Zero dispersion wavelength λ_0	1295 ~ 1320 nm
	Zero dispersion slope S0 at 1295nm ~ 1300 nm at 1300nm ~ 1320 nm	≤0.001($\lambda_0 - 1190$) ps/(nm ² .km) ≤ 0.11 ps/(nm ² .km)
Geometrical Characteristics	Core Diameter:	50 ± 2.5 μ m
	Cladding Diameter	125 ±1 μ m
	Mode field (Core/clad) concentricity error	≤ 1.0 μ m
	Cladding non-Circularity	≤ 1 %
	Coating non-Circularity	≤ 6%

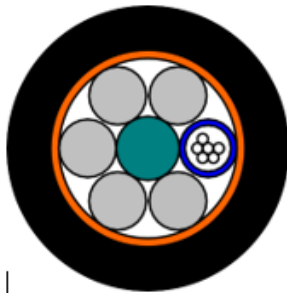
	Coating-Cladding Concentricity error	≤ 12 μ m
Mechanical Characteristics	Proof Test	≥ 1.0%, 1 sec. ≥ 0.69Gpa (100kpsi)
Environmental Characteristics	Temperature Cycling Induced Attenuation: at 850nm and 1300 nm (-60°C to +85°C)	≤0.1dB/km
	Macro bending Loss : at 850nm and 1300 nm (100 turns; Φ 60 mm)	≤ 0.5 dB

3. DRAWING AND DATASHEET OF CABLE

	Optical Fiber Cable Specifications	
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Cable type : **MULTIMODE DUCT FIBER 6F OM3 LSZH**

Cable structure :



Fiber: **6*OM3**

Structure Data				
1	FRP	Diameter	2.20	mm
2	PBT Loose tube	Outer/Inner	2.0/1.4	mm
3	Optical fiber	Num.s	6	
4	Filler	Num.s	5	
5	Jelly			
7	Filling compound			
8	LSZH outer sheath	Thickness	1.5	mm
9	WB Glass yarn(600T)			

Tube/Fibers	1 / 6
Color of Optical fiber	Blue, Orange, Green, Brown, Gray, White
Color of buffer tube	Blue

Diameter of Optical cable:	9.8±0.3	mm
Weight:	98±10%	kg/km

Tech. Data :	Standard: IEC 60794	
	Features: Water blocking, Moisture proof, Tensile resistant, Crushing resistant	
	Allowable tensile strength	short term 2000 N
	Water ingress resistance	1meter, 24hours, 3samples
	Minimum bending radius (Dynamic)	20 D
	Minimum bending radius (Static)	10 D
TEMP.CAPABILITY :	Life span of Optical cable	≥25 years
	-40°C ~ +70°C	Δα≤0.05 dB/km

Note : All dimension and data are nominal value

4. COLOR IDENTIFICATION OF FIBER IN CABLE

4.1 Fiber color code

Each fiber will be identifiable throughout the length of the cable in accordance with the following color sequence.

Fiber color in each tube starts from No. 1 Blue.

Fiber	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Grey	White
Code	7	8	9	10	11	12
	Red	Black	Yellow	Purple	Pink	Aqua

4.2 Color Codes for Loose Tube

The loose tubes will be identifiable in accordance with the following color sequence. If there are fillers, the color is Black.

Fiber	1	2	3	4	5	6
Color	Green	Yellow	Natural	Natural	Natural	Natural
Code	7	8	9	10	11	12
	Natural	Natural	Natural	Natural	Natural	Natural

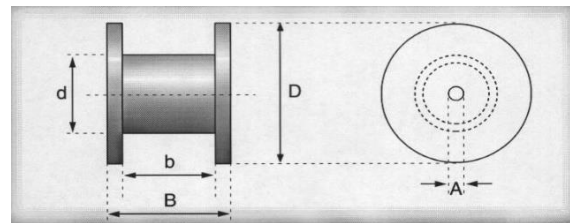
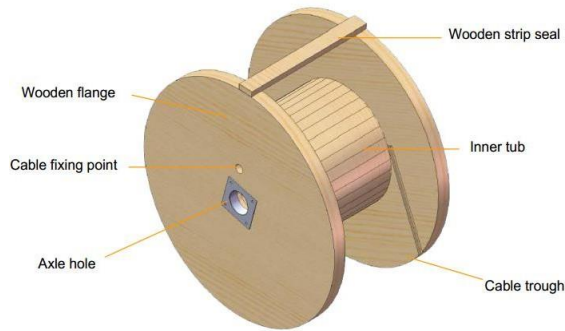
5. CHARACTERISTIC OF OPTICAL CABLE

Optical fiber cable shall be accordance with applicable standard of optical fiber cable and requirement of customer. The following test items shall be carried out according to corresponding reference.

Tests of Completed Optical Fiber Cable		
1	Impact test	IEC-60794
2	Crush test	IEC-60794
3	Water penetration(0.1bar/24h)	≤1m
4	Attenuation test	ITU

6. PACKING AND DRUM FOR CABLE

CABLE shall be wound on a non-returnable wooden drum or metal drum. Both ends of CABLE shall be securely fastened to drum and sealed with a shrinkable cap. The required marking shall be printed with a weather-proof material on the outsides of drum according to customer's requirement.



Cable Diameter (mm)	Drum Length (km)	Drum Dimensions & Weights					
		D	b	B	d	A	weight
		m	m	m	m	m	t
11.3	4	1.35	0.61	0.7	0.6	0.08	0.122
12.5	4	1.5	0.61	0.7	0.6	0.08	0.158