

TECHNICAL SPECIFICATION

1. General

1.1 Scope

Cable type	Application
OFC-1G.657A1-Distribution cable-LSZH	Indoor installation cable

1.2 Cable Description

cable possesses high tensile strength and flexibility in compact cable sizes. At the same time, it provides excellent optical transmission and physical performance.

1.3 Quality

Excellent quality control is achieved through intense in-house quality check and stringent audit acceptance by ISO 9001.

1.4 Reliability

Initial and periodic product qualification tests for performance and durability are performed rigorously to ensure product reliability.

1.5 Reference

The cable which designed, manufactured and tested according to international standards as follows.

IEC 60793-1	Optical fiber Part 1: Generic specifications
IEC 60793-2	Optical fiber Part 2: Product specifications
IEC 60794-2	Optical fiber cables-part 2 indoor cables- sectional specification
ITU-T G.650	Definition and test methods for the relevant parameters of single-mode fibers
ITU-T G.657	Characteristics of a bending-loss insensitive single-mode optical fiber

3. Optical Fiber

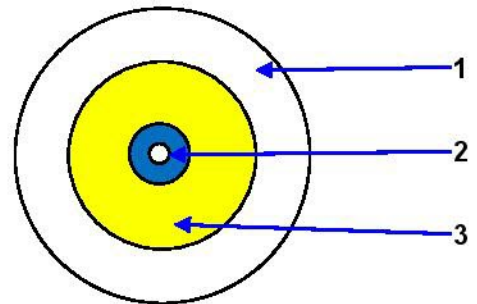
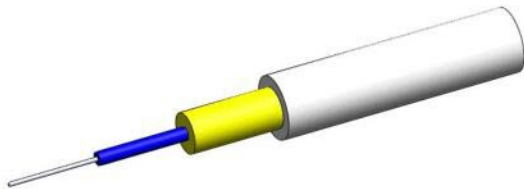
The optical fiber is made of high pure silica and germanium doped silica. UV curable acrylate material is applied over fiber cladding as optical fiber primary protective coating. The detail data of optical fiber performance are shown in the following table.

G.657A1 Fiber

Category	Description	Specifications
		After cable
Optical Specifications	Attenuation @1310 nm	≤0.40dB/km
	Attenuation @1550 nm	≤0.25dB/km
	Dispersion coefficient	@1288~1339nm ≤3.5ps/nm·km @1550nm ≤18ps/nm·km @1625nm ≤22ps/nm·km
	Zero Dispersion Wavelength	1300~1324 nm
	Zero Dispersion Slope	≤0.092 ps/nm ² ·km
	Cable Cutoff Wavelength (λ_{cc})	≤1260 nm
	Macro bending Loss	
	(10 turns; Φ30 mm) @1550 nm	≤ 0.25 dB
	(10 turns; Φ30 mm) @1625 nm	≤ 1.0 dB
	(1 turns; Φ20 mm) @1550 nm	≤ 0.75 dB
	(1 turns; Φ20 mm) @1625 nm	≤ 1.5 dB
	Mode Field Diameter @1310 nm	(8.6-9.2)±0.4μm
Dimensional Specifications	Cladding Diameter	125±1μm
	Cladding non circularity	≤1.0%
	Core/clad concentricity error	≤0.5μm
	Coating diameter	245±7μm
	Coating non circularity	≤6%
	Cladding / coating concentricity error	≤12μm
Mechanical Specifications	Proof stress	≥1.05%

3. Cable structure

3.1 Cable Type: OFC-1G.657A1-Distribution cable-LSZH



Picture is only for reference

Technical Characteristics

- With excellent mechanical and environmental properties
- Has good bending performance, easy to install

Construction:

1. Outer sheath (**LSZH, white**)
2. Tight buffer fiber (**LSZH**)
3. Strength member (aramid yarns)

Dimension and Properties

Physical	Fiber count	1 G.657A1
	Tight buffer fiber diameter	0.9±0.05mm
	Cable OD	3.0mm±5%
	Cable weight	7kg/km±15%
	Operation temperature range	-20 deg C to + 70 deg C
	Installation temperature range	-10 deg C to + 50 deg C
	Transport and storage temperature range	-20 deg C to + 70 deg C
Mechanical	Max. tensile load	100N
	Crush resistance	500N/10cm
	Minimal installation bending radius	20 x OD
	Minimal operation bending radius	10 x OD

Color code scheme:

Tight buffer color: blue

4. Test Requirements

The cable is in accordance with applicable standard of cable and requirement of customer. The following test items are carried out according to corresponding reference.

Routine tests of optical fiber

Mode field diameter	IEC 60793-1-45
Mode field Core/clad concentricity	IEC 60793-1-20
Cladding diameter	IEC 60793-1-20
Cladding non-circularity	IEC 60793-1-20
Attenuation coefficient	IEC 60793-1-40
Chromatic dispersion	IEC 60793-1-42
Cable cut-off wavelength	IEC 60793-1-44

Test List

4.1 Tension Loading Test

Test Standard	IEC 60794-1-2 E1
Sample length	No less than 50 meters
Load	Max. tension load
Duration time	1 minute
Test results	Additional attenuation: $\leq 0.4\text{dB}$
	No damage to outer jacket and inner elements

4.2 Crush/Compression Test

Test Standard	IEC 60794-1-2 E3
Load	Crush load
Duration time	1 minute
Test number	3
Test results	Additional attenuation: $\leq 0.4\text{dB}$
	No damage to outer jacket and inner elements

4.3 Impact Resistance Test

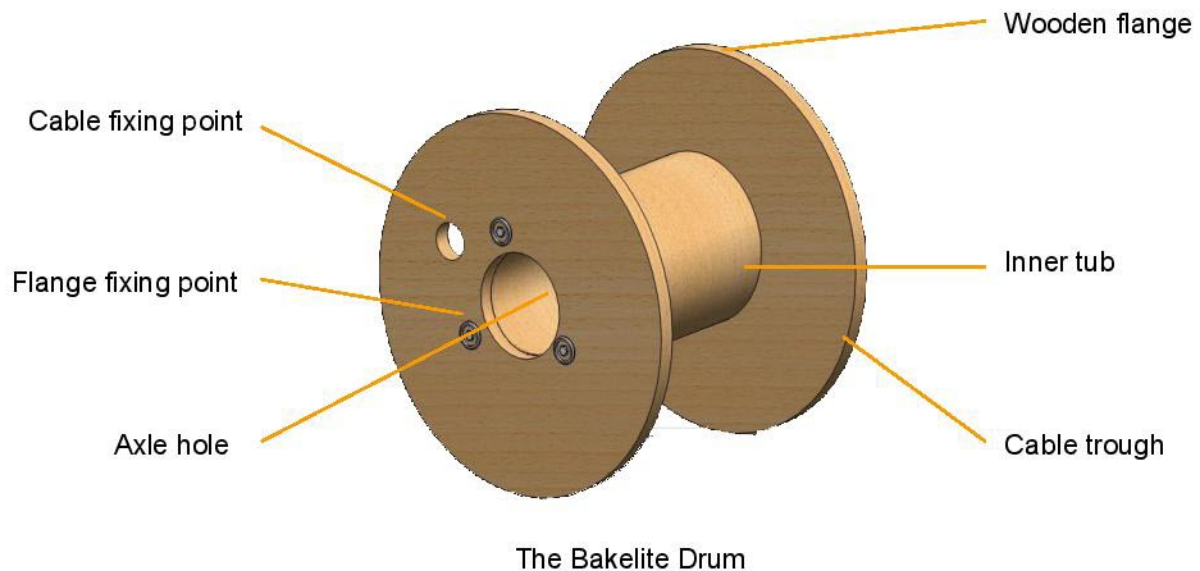
Test Standard	IEC 60794-1-2 E4
Impact energy	1J
Radius	12.5mm
Impact points	3
Impact number	1
Test result	Additional attenuation: $\leq 0.4\text{dB}$
	No damage to outer jacket and inner elements

4.4 Repeated Bending Test

Test Standard	IEC 60794-1-2 E6
Bending radius	20XOD
Cycles	30 cycles
Test result	Additional attenuation: $\leq 0.4\text{dB}$
	No damage to outer jacket and inner elements

5. Packing and Drum

5.1 cables are packed in carton, coiled on Bakelite & wooden drum. During transportation, right tools should be used to avoid damaging the package and to handle with ease. Cables should be protected from moisture; kept away from high temperature and fire sparks; protected from over bending and crushing; protected from mechanical stress and damage.



5.2 The color of cable marking is white. (The printing shall be carried out at interval of 1 meter on the outer sheath of cable) The inner end of cable is then sealed with heat shrinkable end cap to prevent ingress of water and is made available for testing. The outer end of cable is equipped with heat shrinkable end cap. Outer sheath marking legend can be changed according to user's requests.

5.3 Indoor cable packing

Bakelite & wooden drum

Strong wooden batten protection