Invisible fiber optic cable

Specifications of GJI

1、Cross Section（cable）

Sketch map	No.	Parts	Spec	Remark
schematic diagram of cable structure 	1	tight buffered	Φ0.9mm（±0.05mm）	1 fiber，Nature
	2	tight buffered sheath material	PA12，nature	——
	3	weight（kg/km）（approx.）	0.7kg	——

Characteristic of Optical Cable

item	Specifications
Min Bend Radius	2.5mm
Operation temperature	-5℃~+50℃
Installation temperature	-5℃~+60℃
Storage temperature	-10℃~+60℃

Main mechanical & environmental performance test

Item	test methodme	Test requirements
Tension	Test method: IEC 60794-1-2-E1 Long-term pull: 5N Short term pull: 10N	The strain of optical fiber is less than 0.3% and the strain of optical cable is less than 0.3% under the long-term 10N tension. Fiber strain ≤0.6% at 50N tension;
Crush	Test method :IEC 60794-1-2-E3 Long-term: 300N/100mm Short term: 1000N/100mm Times: 3; Interval length: 500mm	In the middle and long term during the test process loss variation ≤0.1dB; Loss variation ≤0.1dB after 5 minutes of short-term test; The optical fiber does not break and the sheath does not crack.

Peeling force of invisible optical cables

(1) Test method: Using the testing equipment and methods specified in 5.2.2 of TD/T 1258.1-2015;

(2) Peel depth: Peel to the fiber cladding and keep the cladding intact;

(3) Sample length: 500mm;

(4) Test step: The optical cable is fixed to the stripping tool and tension machine through the guide hole on the stripping tool, and then pulled

Tear test with a force machine at a peeling rate of 500mm/min;

Stripping length: 15mm ± 1.5mm; (6) Qualification criteria: When the test result is 10N-25N, it is considered qualified.

3、Optical Characteristics

Type of Fible	G657B3
Attenuation in cable （after cable）	0.4dB/km @1310nm 0.3dB/km @1550nm

4、Else

Sheath Color	Nature
The length of delivery	According to the customer

Packaging information

Packaging: Fiber optic disc, 2km/reel

Net weight: 1.4kg/reel

Gross weight: 2.1kg/reel

Packing: 6 reels/box

Carton: 500mm * 360mm * 250mm（L*W*H）

Optical fiber characteristics （G.657B3 FIBER）

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Characteristic		Condition	Specified values	Units
Attenuation		1310nm	≤0.35	dB/km
		1383nm(after H2-aging)	≤0.35	dB/km
		1460nm	≤0.25	dB/km
		1490nm	≤0.23	dB/km
		1550nm	≤0.21	dB/km
		1625nm	≤0.23	dB/km
Attenuation vs.Wavelength Max.a different		1300nm,in reference to 1	≤0.03	dB/km
		1578nm,in reference to 1	≤0.02	dB/km
Zero Dispersion Wavelength(λ0)		–	1300-1324	nm
Zero Dispersion Slope(S0)		–	≤0.090	ps/(nm^2·km)
PMD	Maximum individual Fibre	–	≤0.1	ps/√km
	Link Design Value(M=20,Q=0.01%)	–	≤0.06	ps/√km
	Typical Value	–	0.04	ps/√km
Cable Cutoff Wavelength (λcc)		–	≤1260	nm
Mode Field Diameter(MFD)		1310nm	8.2-9.0	μm
		1550nm	9.1-10.1	μm
Effective Group Index Refraction (Neff)		1310nm	1.466	–
		1550nm	1.466	–
Point Discontinuities		1310nm	≤0.05	dB/km
		1550nm	≤0.05	dB/km
Geometrical Characteristics				
Cladding Diameter		–	125.0±0.7	μm
Cladding Non-Circularity		–	≤0.7	%
Coating Diameter		–	235-245	μm
Coating-Cladding Concentricity Error		–	≤12.0	μm
Coating Non-Circularity		–	≤6.0	%
Core-Cladding Concentricity Error		–	≤0.5	μm
Curl(radius)		–	4	m
Environmental Characteristics				
Temperature Dependence Induced Attenuation		-60℃ to +85℃	≤0.05	dB/km
Temperature-Humidity Cycling Induced Attenuation		10℃ to +85 ℃, 98% RH	≤0.05	dB/km
Water Immersion Dependence Induced Attenuation		23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence Induced Attenuation		℃ and 85% RH,for 30 d	≤0.05	dB/km
Dry Heat Aging		85 ℃, 30 days	≤0.05	dB/km
Mechanical Specifications				
Proof Test		–	≥9.0	N
		–	≥1.0	%
		–	100	kpsi
Macro-bend Induced Loss	1 Turns Around a Mandrel of 10mm Radius	1550nm	≤0.03	dB
	1 Turns Around a Mandrel of 10mm Radius	1625nm	≤0.1	dB
	1 Turns Around a Mandrel of 7.5mm Radius	1550nm	≤0.08	dB
	1 Turns Around a Mandrel of 7.5mm Radius	1625nm	≤0.25	dB
	1 Turns Around a Mandrel of 5mm Radius	1550nm	≤0.15	dB
	1 Turns Around a Mandrel of 5mm Radius	1625nm	≤0.45	dB
Coating Strip Force		typical average force	1.5	N
		peak force	1.3-8.9	N
Dynamic Fatigue Parameter(nd)		–	≥20	–