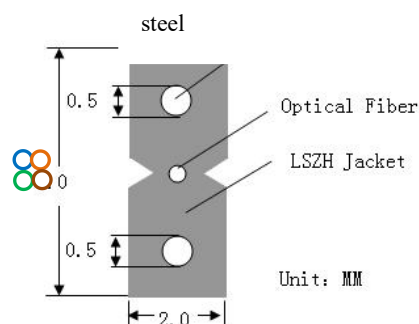




Indoor FTTH Drop Fiber Optic Cable 1 2 4 Fibers GJXH SM G652D G657A1 G657A2 LSZH White/Black

Cable Design



Technical data

No. of cable			1-4
Fiber Model			G.657A1/G.657A1/G.652D
STEEL	Diameter (±0.03) mm		0.5
	NO.		2
Outer Sheath	Material		LSZH
	Colour		Black
Cable Diameter (±0.2) mm			2.0×3.0
Cable Wegtht (±2) kg/km			9
Attenuation	1310nm	dB/km	0.50
	1550nm		0.40
Allowable Tensile Strength	Short Term	N	80
	Long Term		40
Allowable Crush Resistance	Short Term	N/100mm	2200
	Long Term		1000
Min. bending radius	Without Tension		15.0×Cable- ϕ
	Under Maximum Tension		30.0×Cable- ϕ
Temperature range (℃)	Installation		-20~+60
	Transport&Storage		-40~+70
	Operation		-40~+70

Fiber Colours

NO.	1	2	3	4
Colour	Blue	orange	green	brown
				

The properties of single mode optical fiber (ITU-T Rec. G.652.D)

Item	Specification
Fiber type	Single mode
Fiber material	Doped silica
Attenuation coefficient @ 1310 nm @ 1383 nm @ 1550 nm @ 1625 nm	≤ 0.36 dB/km ≤ 0.32 dB/km ≤ 0.22 dB/km ≤ 0.30 dB/km
Point discontinuity	≤ 0.05 dB
Cable cut-off wavelength	≤ 1260 nm
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	≤ 0.092 ps/(nm ² .km)
Chromatic dispersion @ 1288 ~ 1339 nm @ 1271 ~ 1360 nm @ 1550 nm @ 1625 nm	≤ 3.5 ps/(nm. km) ≤ 5.3 ps/(nm. km) ≤ 18 ps/(nm. km) ≤ 22 ps/(nm. km)
PMD _Q (Quadrature average*)	≤ 0.2 ps/km ^{1/2}
Mode field diameter @ 1310 nm	9.2±0.4 μm
Core / Clad concentricity error	≤ 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Cladding non-circularity	≤ 1.0%
Primary coating diameter	245 ± 10 μm
Proof test level	100 kpsi (=0.69 Gpa), 1%
Temperature dependence 0°C ~ +70°C @ 1310 & 1550nm	≤ 0.1 dB/km

The properties of single mode optical fiber (ITU-T Rec. G.657A1)

Characteristic	condition	data	unit
Optical properties			
Attenuation	1310nm	≤ 0.35	dB/km
	1383nm(氢老化后)	≤ 0.35	dB/km
	1490nm	≤ 0.23	dB/km
	1550nm	≤ 0.22	dB/km
	1625nm	≤ 0.23	dB/km
Relative wavelength attenuation @1310nm @1550nm	1285~1330nm	≤ 0.05	dB/km
	1525~1575nm	≤ 0.05	dB/km
Dispersion in the wavelength range of	1285~1340nm	≤ 3.5	ps/(nm.km)
	1550nm	≤ 18	ps/(nm.km)
Zero dispersion wavelength		1300~1324	nm
A zero-dispersion slope		≤ 0.092	ps/(nm ² .km)

Polarization Mode Dispersion Coefficient PMD Single fiber maximum Fiber link value (M=20, Q=0.01%) Typical value		≤0.2 ≤0.1 0.04	ps/ ps/ ps/
Cable cut-off wavelength (λ_{cc})		≤1260	nm
Mode field diameter (MFD)	1310nm 1550nm	8.8±0.4 9.8±0.5	μm μm
Attenuation discontinuities	1310nm 1550nm	≤0.05 ≤0.05	dB dB
Geometric characteristics			
Core diameter		125±0.7	μm
Cladding roundness		≤0.7	%
Coating diameter		245±5	μm
Coating / package concentricity error		≤12.0	μm
Core / package concentricity error		≤0.5	μm
The warpage (radius)		≥4	m
Environmental characteristics (1310nm、1550nm、1625nm)			
Temperature additional attenuation	-60℃ ~+85℃	≤0.05	dB/km
Temperature-humidity cycle additional attenuation	-10℃ ~+85℃ , 98% Relative humidity	≤0.05	dB/km
Flooding additional attenuation	23℃ , 30 days	≤0.05	dB/km
Hot and humid additional attenuation	85℃ 和 85% Relative humidity, 30 days	≤0.05	dB/km
Dry heat aging	85℃	≤0.05	dB/km
Mechanical properties			
Screening tension		≥9.0	N
The macro bend Additional attenuation 10 CircleΦ30mm 10 CircleΦ30mm 1 CircleΦ20mm 1 CircleΦ20mm	1550nm 1625nm 1550nm 1625nm	≤0.025 ≤1.0 ≤0.75 ≤1.5	dB dB dB dB
Coating peeling force	Typical average	1.5	N
Dynamic fatigue parameters		≥20	

The properties of single mode optical fiber (ITU-T Rec. G.657A2)

Characteristic	condition	data	unit
Optical properties			
Attenuation	1310nm 1383nm(氢老化后) 1490nm 1550nm 1625nm	≤0.35 ≤0.35 ≤0.23 ≤0.22 ≤0.23	dB/km dB/km dB/km dB/km dB/km



Relative wavelength attenuation @1310nm @1550nm	1285~1330nm 1525~1575nm	≤ 0.05 ≤ 0.05	dB/km dB/km
Dispersion in the wavelength range of	1285~1340nm 1550nm	≤ 3.5 ≤ 18	ps/(nm.km) ps/(nm.km)
Zero dispersion wavelength		1300~1324	nm
A zero-dispersion slope		≤ 0.092	ps/(nm ² .km)
Polarization Mode Dispersion Coefficient PMD Single fiber maximum Fiber link value (M=20, Q=0.01%) Typical value		≤ 0.2 ≤ 0.1 0.04	ps/ ps/ ps/
Cable cut-off wavelength (λ_{cc})		≤ 1260	nm
Mode field diameter (MFD)	1310nm 1550nm	8.8±0.4 9.8±0.5	μm μm
Attenuation discontinuities	1310nm 1550nm	≤ 0.05 ≤ 0.05	dB dB
Geometric characteristics			
Core diameter		125±0.7	μm
Cladding roundness		≤ 0.7	%
Coating diameter		245±5	μm
Coating / package concentricity error		≤ 12.0	μm
Core / package concentricity error		≤ 0.5	μm
The warpage (radius)		≥ 4	m
Environmental characteristics (1310nm、1550nm、1625nm)			
Temperature additional attenuation	-60℃ ~+85℃	≤ 0.05	dB/km
Temperature-humidity cycle additional attenuation	-10℃ ~+85℃, 98% Relative humidity	≤ 0.05	dB/km
Flooding additional attenuation	23℃, 30 days	≤ 0.05	dB/km
Hot and humid additional attenuation	85℃ 和 85% Relative humidity, 30 days	≤ 0.05	dB/km
Dry heat aging	85℃	≤ 0.05	dB/km
Mechanical properties			
Screening tension		≥ 9.0	N
The macro bend Additional attenuation			
10 CircleΦ30mm	1550nm	≤ 0.025	dB
10 CircleΦ30mm	1625nm	≤ 1.0	dB
1 CircleΦ20mm	1550nm	≤ 0.75	dB
1 CircleΦ20mm	1625nm	≤ 1.5	dB
Coating peeling force	Typical average	1.5	N
Dynamic fatigue parameters		≥ 20	

Main mechanical & environmental performance test

Item	Test Method	Acceptance Condition
Tensile Strength IEC 794-1-2-E1	- Load: Short term tension - Length of cable: about 50m	- Fiber strain $\leq 0.36\%$ - Loss change $\leq 0.1 \text{ dB @1550 nm}$ - No fiber break and no sheath damage.
Crush Test IEC 60794-1-2-E3	- Load: Short term crush - Load time: 1min	- Loss change $\leq 0.05\text{dB@1550nm}$ - No fiber break and no sheath damage.
Impact Test IEC 60794-1-2-E4	- Points of impact: 3 - Times of per point: 1 - Impact energy: 5J	- Loss change $\leq 0.1\text{dB@1550nm}$ - No fiber break and no sheath damage.
Temperature Cycling Test YD/T901-2001-4.4.4.1	- Temperature step: +20°C→-40°C→+70°C →+20°C - Time per each step: 12 hrs - Number of cycle: 2	- Loss change $\leq 0.05 \text{ dB/km@1550 nm}$ - No fiber break and no sheath damage.

Sheath marking

The color of marking is white, but if the remarking is necessary, the **white color** marking shall be printed newly on a different position.

An occasional unclear of length marking is permitted if both of the neighboring markings are clear.

The both cable ends are sealed with heat shrinkable end caps to prevent water ingress.