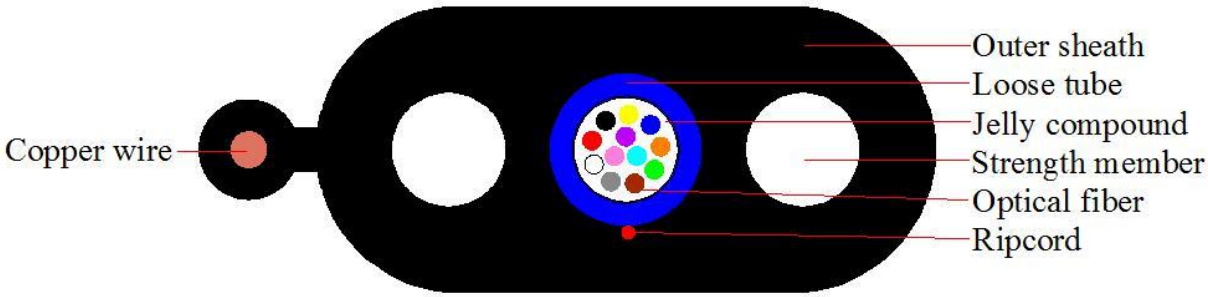
Flat Fiber Optic Cable with copper wire PE



Technical data

No. of cable		1-12
Fiber Model		G657A1
Loose tube	Material	PBT
	Thickness	0.35（±0.05）mm
	Diameter	2.4（±0.1）mm
	Color	Blue
Strength Member	Material	FRP
	Diameter	1.5（±0.05）mm
	No.	2
Copper wire (diameter)		0.5（±0.05）mm
Outer Sheath	Material	HDPE
	Color	Black
Cable Size		(4.3±0.2)×(9.7±0.2)mm
Cable Weight		40（±5）kg/km
Max. allowable tension（Short-term）		1335N
Max. allowable tension（Long-term）		667N
Crush resistance test		1000N/10cm
Min. bending radius	Static	15cm
	dynamic	7.5cm
Temperature range（℃）	Installation	-30~+60
	Transport&Storage	-40~+75
	Operation	-40~+70

Fiber Colors

No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Gray	White
No.	7	8	9	10	11	12

Color	Red	Black	Yellow	Violet	Pink	Aqua

The properties of single mode optical fiber (ITU-T Rec. G657A1)

Characteristic	condition	data	unit
Optical properties			
Attenuation	1310nm 1383nm(氢老化后) 1490nm 1550nm 1625nm	≤0.35 ≤0.35 ≤0.23 ≤0.25 ≤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（λcc）		≤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	

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 ≤ 0.36% - Loss change ≤ 0.1 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 ≤ 0.05dB@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 ≤ 0.1dB@1550nm - No fiber break and no sheath damage.
Temperature Cycling Test YD/T901-2001-4.4.4.1	- Temperature step: +20ºC→-40ºC→+70ºC →+20ºC - Time per each step: 12 hrs - Number of cycle: 2	- Loss change ≤ 0.05 dB/km@1550 nm - No fiber break and no sheath damage.