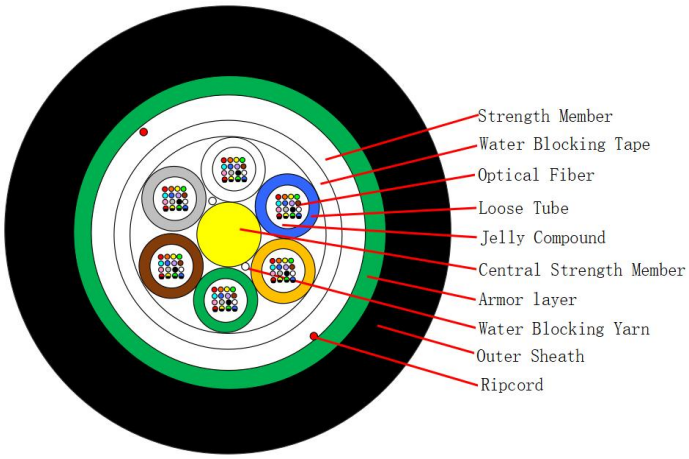
GYFTS Outdoor Optical Fiber Cable

Cable Design



Technical data

Fibers of cable		96
Fiber Model		G.652D
Design (Strength Member+ Tube & Filler)		1+6
Central Strength Member	Material	FRP
	Diameter（±0.05）mm	2.8
Loose Tube	Material	PBT
	Diameter（±0.1）mm	2.6
	Thickness（±0.05）mm	0.40
	Fibers/Tube	16
Water Blocking layer（Material）		Water Blocking Yarn & Tape
Strength member (Material)		Glass Yarn
Ripcord（Material）		Polyester yarn
Armoring	Material	Steel Tape
	Thickness（+0.02）mm	0.2
Outer Sheath	Material	PE
	Thickness（±0.2）mm	1.7
Cable Diameter（±0.4）mm		13.2
Cable Weight（±10%）kg/km		150
Attenuation	1310nm	≤0.35dB/ km
	1550nm	≤0.21dB/ km
Tension		2700 N
Crush		4000 (N/100mm)
Electrical resistance of the outer sheath (armor-ground)		≥2000MOhm/km
Min. bending radius	Without Tension	10.0×Cable-φ
	Under Tension	20.0×Cable-φ
Temperature	Installation	-20~+60

range （℃）	Transport &Storage	-40~+70
	Operation	-40~+70

Fiber Color

No.	1	2	3	4	5	6
Color	Red	Orange	Yellow	Green	Cyan	Blue
No.	7	8	9	10	11	12
Color	Violet	Brown	Pink	Gray	Black	White
No.	13	14	15	16	“R” means color ring	
Color	Red+R	Yellow+R	Green+R	Blue+R		

Loose Color

No.	1	2	3	4	5	6
Color	Red	Orange	Yellow	Green	Cyan	Blue

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	 ≤ 0.35 dB/km ≤ 0.32 dB/km ≤ 0.21 dB/km ≤ 0.24 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)
PMD_Q (Quadrature average*)	≤0.2 ps/km$^{1/2}$
Mode field diameter @ 1310 nm	9.2±0.4 um
Core / Clad concentricity error	≤ 0.5 um
Cladding diameter	125.0 ± 0.7 um
Cladding non-circularity	≤1.0%
Primary coating diameter	245 ± 10 um
Proof test level	100 kpsi (=0.69 Gpa), 1%
Temperature dependence 0oC~ +70oC @ 1310 & 1550nm	≤ 0.1 dB/km

Main mechanical & environmental performance test

Item	Test Method	Acceptance Condition
Tensile Strength IEC 60794-1-2-E1	- Load:2700N - Length of cable: about 50m	- Loss change ≤ 0.1 dB @1550 nm - No fiber break and no sheath damage.
Crush Test IEC 60794-1-2-E3	- Load:4000N/100mm - Load time: 1min	- Loss change ≤ 0.1dB@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 IEC 60794-1-2-F4	- Temperature step: +20°C→-40°C→+70°C →+20°C - Time per each step: 12 hrs - Number of cycle: 2	- Loss change ≤ 0.1dB/km@1550 nm - No fiber break and no sheath damage.

Sheath marking

The optical fiber cable shall have sequentially numbered length marking at intervals of approximately 1 meter. The starting number of ordering length for any coil shall begin whit zero meter. The accuracy of the measurement of length marking shall be held within the limits of ±1%.