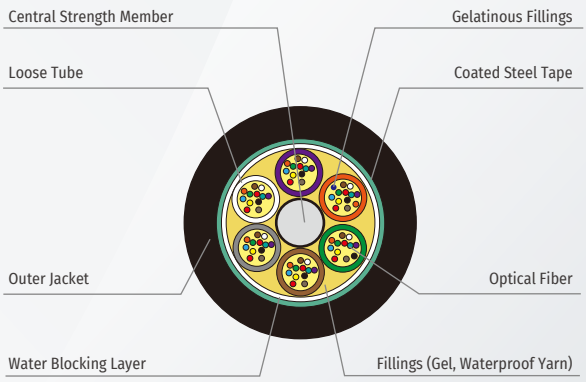
Fiber Cable



Duct Armored Cable

Lightem offers a board variety of fiber optic cable for different outdoor condition, such as central loose tube armored cable, duct armored cable, direct buried cable, steel wire armored cable, non metallic outdoor cable, ADSS cable and figure 8 Cable. Fitting most of the outdoor application environment, whatever for duct buried, direct buried or aerial cabling.

Lightem cables are using the premium quality fiber. Singlemode G652D, multimode 50/125um or 62.5/125um, OM3 and OM4 fibers are available. Lightem also offers the customization service on the fiber, colours and construction of the cables for catering different

Features

- Fiber count up to 432 core
- Aerial/Duct application for long haul transmission
- Loose tube design and ease of installation
- Aluminum tape armored, metal strength member and UV protection
- LSZH jacket is available
- Comply to TIA/EIA568C-3 and ISO/IEC 11801

Fire Performances(optional)

Flame retardant	Oxygen Index	Low smoke opacity	Halogen free
IEC 60332	ISO 4589-3/ASTM D2863	IEC 61034-2	IEC 60754-1/2

Specifications

General	
Flame Rating (For LSZH model only)	LSZH
Fiber Category	Singlemode / Multimode
Temperature Range	
Operation	-40°C to +70°C
Cable Design	
Central Element	Dielectric
Fiber Colouring	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose,Aqua
Number of Filling Elements	1
Tape	Water-swellable
Tensile Strength Elements and/or Armouring Layer	Corrugated steel tape armor
Outer Jacket Material	Polyethylene (PE) /low smoke halogen-free flame retardant polyoletin (LSZH)
Outer Jacket Colour	Black

Mechanical Characteristics Cable						Unit
Fiber Count	2~60	62~72	74~96	98~144	146~192	
Outer Diameter	10.5±0.5	11.5±0.5	13.0±0.5	15.8±0.5	16.0±0.5	mm
Tube count	5	6	8	12	16	
Nominal Weight	112	138	165	222	245	kg/km
Max. Tension (Short-term)	1500	2000	2000	2500	1500	N
Max. Tension (Long-term)			600			N
Max. Crushing Resistance (Short-term)			1000			$N/100mm^2$
Max. Crushing Resistance (Long-term)			300			$N/100mm^2$
Bending Radius(Loading)			20			D
Bending Radius(Without Loading)			10			D

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Fiber Specifications (Singlemode)

Characteristics		G652D	G657A1	G657A2
Optical Characteristics *				
Attenuation	1310nm	≦0.40 dB/km	≦0.40 dB/km	≦0.40 dB/km
	1383nm	≦0.34 dB/km	≦0.35 dB/km	≦0.35 dB/km
	1460nm	-	≦0.25 dB/km	≦0.25 dB/km
	1490nm	-	-	≦0.23 dB/km
	1550nm	≦0.30 dB/km	≦0.30 dB/km	≦0.30 dB/km
	1625nm	≦0.23 dB/km	≦0.23 dB/km	≦0.23 dB/km
Attenuation vs. Wavelength	1285-1330nm	≦0.03 dB/km	≦0.03 dB/km	≦0.03 dB/km
Max. α difference	1525-1575nm	≦0.02 dB/km	≦0.02 dB/km	≦0.02 dB/km
Dispersion coefficient	1285-1340nm	≧-3.4≦3.4 ps/(nm · km)	≧-3.4≦3.4 ps/(nm · km)	-
	1550nm	≦18 ps/(nm · km)	≦18 ps/(nm · km)	-
	1625nm	≦22 ps/(nm · km)	≦22 ps/(nm · km)	-
Zero dispersion wavelength		1312±12 nm	1300~1324 nm	1300~1324 nm
Zero dispersion slope		≦0.091 ps/nm^2 · km	≦0.092 ps/nm^2 · km	≦0.092 ps/nm^2 · km
Typical value		0.086 ps/nm^2 · km	0.086 ps/nm^2 · km	0.04 ps/nm^2 · km
PMD				
Maximum Individual Fibre		≦0.1 ps/√km	≦0.1 ps/√km	≦0.1 ps/√km
Link Design Value(M=20,Q=0.01%)		≦0.06 ps/√km	≦0.06 ps/√km	≦0.06 ps/√km
Typical value		0.04 ps/√km	0.04 ps/√km	0.04 ps/√km
Cable cutoff wavelength λcc		≦1260 nm	≦1260 nm	≦1260 nm
Mode field diameter(MFD)	1310nm	8.7~9.5 um	8.4~9.2um	8.4~9.2 um
	1550nm	9.9~10.9 um	9.3~10.3 um	9.3~10.3 um
Effective group index of refraction(Neff)	1310nm	1.466	1.466	1.466
	1550nm	1.467	1.467	1.467
Point discontinuities	1310nm	≦0.05 dB	≦0.05 dB	≦0.05 dB
	1550nm	≦0.05 dB	≦0.05 dB	≦0.05 dB
Geometrical Characteristics				
Fiber Core Diameter		9 +/-1um	9 +/-1um	9 +/-1um
Cladding diameter		125.0±0.7 um	125.0±0.7 um	125.0±0.7 um
Cladding non-circularity		≦1.0 %	≦0.7 %	≦0.7 %
Coating diameter		245.0±7 um	245.0±5 um	245.0±5 um
Coating-cladding concentricity error		≦12.0 um	≦12.0 um	≦12.0 um
Coating non-circularity		≦6.0 %	≦6.0 %	≦6.0 %
Core-cladding concentricity error		≦0.6 um	≦0.5 um	≦0.5 um
Curl(radius)		≧4 m	≧4 m	≧4 m
Delivery length		2.1 to 50.4 km/reel	2.1 to 50.4 km/reel	2.1 to 50.4 km/reel

*Attenuation loss of barefiber

Fiber Specifications (Multimode)

Characteristics		62.5/125 (OM1)	50/125 (OM2)	OM3/OM4	OM5
Geometry Characteristics					
Core Diameter		62.5±2.5 um	50±2.5 um	50±2.5 um	50±2.5 um
Core Non-circularity		≦5.0 %	≦5.0 %	≦5.0 %	≦5.0 %
Cladding Diameter		125.0±1.0 um	125.0±1.0 um	125.0±1.0 um	125.050±1.0 um
Cladding Non-circularity		≦1.0 %	≦1.0 %	≦0.6 %	≦0.6 %
Coating Diameter		245±7 um	245±7 um	245±7 um	245±7 um
Coating/Cladding Concentricity Error		≦10.0 um	≦10.0 um	≦10.0 um	≦10.0 um
Coating Non-circularity		≦6.0 %	≦6.0 %	≦6.0 %	≦6.0 %
Core/Cladding Concentricity Error		≦1.5 um	≦1.5 um	≦1.0 um	≦1.0 um
Delivery Length		up to 17.6 km/reel	up to 17.6 km/reel	up to 8.8 km/reel	up to 8.8 km/ reel
Optical Characteristics *					
Attenuation	850nm	≦3.5 dB/km	≦3.5 dB/km	≦3.5 dB/km	≦3.5 dB/km
	953nm	-	-	-	≦1.7 dB/km
	1300nm	≦1.5 dB/km	≦1.5 dB/km	≦1.5 dB/km	≦1.5 dB/km
Overfilled Modal Bandwidth	850nm	≧200 MHz · km	≧500 MHz · km	≧1500/≧3500 MHz · km	≧3500 MHz · km
	953nm	-	-	-	≧1850 MHz · km
	1300nm	≧500 MHz · km	≧500 MHz · km	≧500/≧500 MHz · km	≧500 MHz · km
Effective Modal Bandwidth	850nm	-	-	≧2000/≧4700 MHz · km	≧4700 MHz · km
	953nm	-	-	-	≧2470 MHz · km
10Gb/sWDM		-	-	-100/150 m	150 m
40Gb/sWDM		-	-	300/500 m	440 m
40GBASE-SR4 / 100GBASE SR10	850nm	-	-	1000/1100 m	200 m
10GBASE-SR	850nm	-	150 m	300/550 m	-
1000BASE-SR	850nm	-	750 m	1000/1100 m	-
DMD Specification		-	-	-	-
Numerical Aperture		0.275±0.015	0.200±0.015	0.200±0.015	0.200±0.015
Group Refractive index		1,496	1,482	1.482	1,482
		1,491	1,477	1.477	1,477
Zero Dispersion Wavelength, λ_0		1320-1365 nm	1295-1340 nm	1295-1340 nm	1297-1328 nm
Zero Dispersion Slope,S_0		-	-	-	≦4(-103)/(840λ√840)^4)
		-	-	-	ps/nm^2 · km
Zero Dispersion Slope,S0	1295nm≦λ_0≦1310nm	-	≦0.105 ps/nm^2 · km	≦0.105 ps/nm^2 · km	-
	1310nm≦λ_0≦1340nm	-	≦0.000375(1590-λ_0) ps/nm^2 · km	-	-
	1320nm≦λ_0≦1348nm	≦0.11 ps/nm^2 · km	-	≦0.000375(1590-λ_0)ps/nm^2 · km	-
	1348nm≦λ_0≦1365nm	≦0.001(1458-λ_0) ps/nm^2 · km	-	-	-

*Attenuation loss of barefiber

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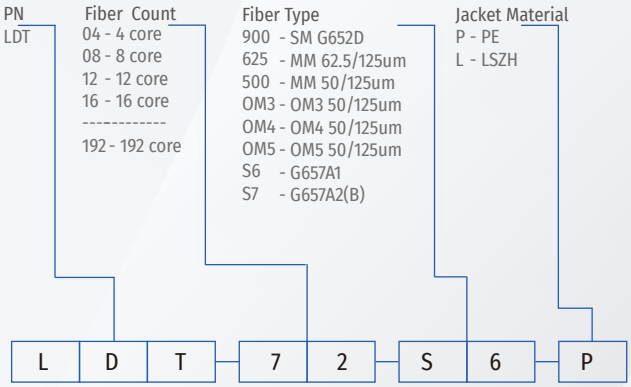
Ordering Information

* Ordering Code Example



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