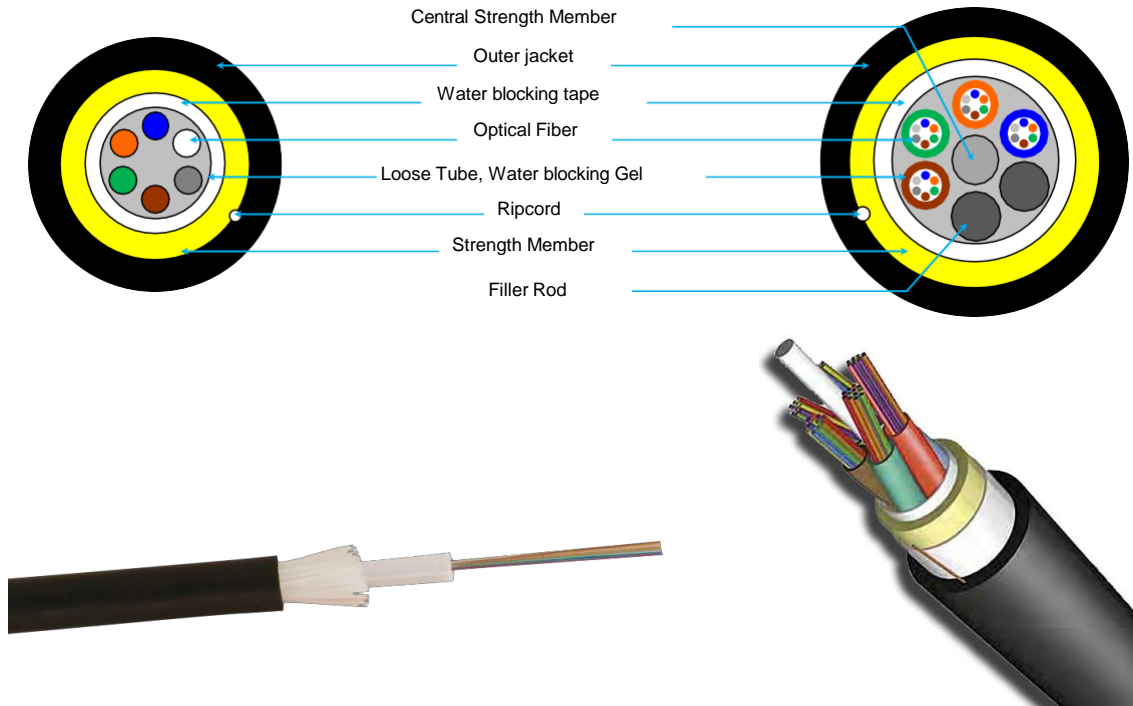


F.O. Outdoor All Dielectric Cable



STANDARD COMPLIANCE

- ANSI/TIA-568.3-D
- ISO/IEC 11801
- EN 50173
- ANSI/ICEA S-83-596
- ANSI/ICEA S-87-640
- IEC 60793-1
- IEC 60794-1-2
- ITU-T G.652D (Singlemode)
- ITU-T G.651 (Multimode)
- RoHS Compliant
- Telcordia GR-20
- TIA-492CAAB (OS2)

APPLICATION SUPPORT

- Outdoor Side Plant / Duct / Lash Aerial
- Ethernet
- 100BASE-F Fast Ethernet
- 1000BASE –SX/LX Gigabit Ethernet (IEEE 802.3z)
- 10G Ethernet (IEEE 802.3ae)
- 40/100Gbps Ethernet
- 52/155/622 Mbps and 1.2Gbps ATM
- FDDI, Fiber channel and others.

Fiber Optic Attributes (Singlemode)

Core	Germania (GeO ₂) doped Silica (SiO ₂)	
Core Diameter	8.3 μm	
Cladding	Silica (SiO ₂)	
Primary Coating	2 layers of UV curable resin	
Index of refraction Difference	0.36%	
Group refractive index	1.169 @1310 nm and 1550 nm	
Cladding Diameter	125 ± 1 μm	
Cladding Non-Circularity	≤ 1 %	
Core/Cladding Concentricity error	≤ 0.6 μm	
Coating Diameter (uncolored)	245 ± 5 μm	
Coating/Cladding Concentricity error	≤ 12 μm	
Colored Fiber Diameter	250 ± 15 μm	
Mode Field Diameter	9.3 ± 0.5 μm @ 1310 nm 10.4 ± 0.6 μm @ 1550 nm	
Proof test stress	The entire length of fiber is subjected to tensile stress greater than 0.69 GPa	
Attenuation with Bending	100 turns, 50 mm diameter	≤ 0.05 dB @ 1310 nm ≤ 0.10 dB @ 1550 nm
	1 turns, 32 mm diameter	≤ 0.50 dB @ 1550 nm
Zero-Dispersion Wavelength (λ₀)	1300 ≤ (λ ₀) ≤ 1322 nm	
Max. Zero-Dispersion Slope (S_{max}) at λ₀	≤ 0.092 ps/(nm ² .km)	
Chromatic dispersion coefficient, D(λ)	D(λ) = λS _{0max} /4·[1-λ ₀ /λ] ⁴ ps/(nm·km) ≤ 3.09 ps/(nm.km) @ 1285~1330 nm ≤ 18.21 ps/(nm.km) @ 1550 nm	
Coating Strip Force (@ 0°C to +45°C)	1.3 N (0.3 lbf) ≤ F ≤ 8.9 N (2.0 lbf)	
Numerical Aperture	0.13 ± 0.01	
Attenuation coefficient [Typ. / Max.]	≤ 0.33 / ≤ 0.34 dB/km @ 1310 nm ≤ 0.31 / ≤ 0.35 dB/km @ 1383 nm ≤ 0.19 / ≤ 0.21 dB/km @ 1550 nm ≤ 0.20 / ≤ 0.23 dB/km @ 1625 nm	
Cabled Cut-off Wavelength (λ_{cc})	≤ 1270 nm	
Polarization Mode Dispersion coefficient (PMD)	≤ 0.20 ps/√km	

Fiber Optic Attributes (Multimode)

Cable Type	50/125 μm [OM2 / OM3 / OM4]
Core Diameter	50.0 \pm 2.5 μm
Cladding Diameter	125 \pm 1 μm
Core Non-Circularity	\leq 5 %
Cladding Non-Circularity	\leq 1 %
Core/Cladding Concentricity error	\leq 1.5 μm
Coating Diameter (uncooled)	245 \pm 5 μm
Coating/Cladding Concentricity error	\leq 12 μm
Colored Fiber Diameter	250 \pm 15 μm
Zero-Dispersion Wavelength (λ_0)	1295 \leq (λ_0) \leq 1315 nm
Max. Zero-Dispersion Slope (S.max) at λ_0	\leq 0.101 ps/(nm ² .km)
Numerical Aperture	0.20 \pm 0.015
Attenuation [Max. : 850 nm / 1300 nm] [Typ. : OM2/OM3/OM4]	\leq 2.7/ \leq 0.8 dB/km \leq 2.5 / \leq 2.3 / \leq 2.3 dB/km @ 850 nm \leq 0.7 / \leq 0.6 / \leq 0.6 dB/km @ 1300 nm
Bandwidth (MHz/km) : [OM2 / OM3 / OM4]	\geq 500 / \geq 1500 / \geq 3500 @ 850 nm \geq 500 / \geq 500 / \geq 500 @ 1300 nm
850 nm Laser Bandwidth (MHz/km) : [OM2 / OM3 / OM4]	NA / \geq 2000 / \geq 4700

Mechanical and Environmental Specification

Maximum tension load, short term	1,800 N (Single Tube)
Maximum tension load, short term	1,500 N (Multi Tube)
Maximum tension load, long term	800 N (Single Tube) 1,000 N (Multi Tube)
Minimum bend radius, loaded	15 / 15.75 mm. (15 x OD.)
Minimum bend radius, unloaded	10 / 10.5mm. (10 x OD.)
Installation Temp.	-40°C to 70°C
Operating Temp.	-45°C to 75°C
Storage Temp.	-45°C to 75°C

Fiber Optic Constructions

Item		Description				
		6,12 core	24 core	48 core	72 core	144 core
Filling Compound	Material	Thixotropic Jelly Compound				
Loose Tube	Material	(PBT) Polybutylene Terephthalate with color code				
	N x Fiber/Tube	1x6,1X12	4x6	4x12	6X12	12X12
	Diameter (mm)	2.6	1.9	2.2	2.2	2.2
	Thickness (mm)	0.35	0.3	0.35	0.35	0.35
Filler Rod	Material	-	Polyethylene, natural color			
	Diameter (mm)	-	1.9	2.2	2.2	2.2
	Number	-	2	2	-	-
Strength Member	Material	E-Glass Yarn	FRP			
	Diameter (mm)	-	2.0	2.3	2.3	2.5
	CSM PE coat	-	2.0	2.3	2.3	6.5
Water Blocking Element	Material	Water Swellable Yarn Water Blocking Tape				
Core Covering	Material	Water Blocking tape				
	Assembly	The tape shall be wrapped longitudinally over the cable core				
Sheath	Material	Black HDPE (High Density Polyethylene), UV-Proof				
	Thickness	1.5 mm.	1.8 mm.			
Cable Diameter (Approx.) mm		7.5	9.7	10.6	10.6	14.8

TIA/EIA-598-A Color code Fiber and Loose tube Identification

No.	Fiber Identification	Loose Tube Identification
1	Blue	Blue
2	Orange	Orange
3	Green	Green
4	Brown	Brown
5	Slate	Slate
6	White	-
7	Red	-
8	Black	-
9	Yellow	-
10	Violet	-
11	Pink	-
12	Aqua	-

Mechanical Test Specification

Compression (Crush)	250 lb/in, 44 N/m	[FOTP-41 / IEC 60794-1 E3]
Repeated bending (Flex)	35 cycles	[FOTP-104 / IEC 60794-1 E6]
Impact	2.17 ft lb, 2.94 N-m	[FOTP-25 / IEC 60794-1 E4]
Tensile Strain	See long and short term tensile loads	[FOTP-33 / IEC 60794-1 E1]
Torsion (Twist)	10 cycles	[FOTP-85 / IEC 60794-1 E7]
Water Penetration	24 h	[FOTP-82 / IEC 60794-1 F5]

Environmental Test Specification

Cable Freeze	-2°C, 28°F	[FOTP-98 / IEC 60794-1 F15]
Drip	70°C, 158°F	[FOTP-81 / IEC 60794-1 E14]
Heat Age	-40°C to 85°C (-40°F to 185°F)	[IEC 60794-1 F9]
Low High Bend	-30°C to 60°C (-22°F to 140°F)	[FOTP-37 / IEC 60794-1 E11]
Temperature Cycle	-40°C to 70°C (-40°F to 158°F)	[FOTP-3 / IEC 60794-1 F1]

Ordering Information

Description	Part Number		
	OS2 9/125 µm	OM3 50/125 µm	OM4 50/125 µm
F.O. Outdoor 6 core, HDPE	LMZ-OS2OD06	LMZ-OM3OD06	LMZ-OM4OD06
F.O. Outdoor 12 core, HDPE	LMZ-OS2OD12	LMZ-OM3OD12	LMZ-OM4OD12
F.O. Outdoor 24 core, HDPE	LMZ-OS2OD24	LMZ-OM3OD24	LMZ-OM4OD24
F.O. Outdoor 48 core, HDPE	LMZ-OS2OD48	LMZ-OM3OD48	LMZ-OM4OD48
F.O. Outdoor 72 core, HDPE	LMZ-OS2OD72	LMZ-OM3OD72	LMZ-OM4OD72
F.O. Outdoor 144 core, HDPE	LMZ-OS2OD144	LMZ-OM3OD144	LMZ-OM4OD144