

FIBER OPTIC CABLE PRODUCT

OUTDOOR DROP WIRE ARMORED SM



PRODUCT DESCRIPTION

- Low attenuation, dispersion and special control of excess fiber length ensure excellent mechanical and envelopment properties.
- Filling compound and water block material validly prevent water penetration.
- Waterblocking tape and water Blocking yarns

APPLICATION

- Special design for used together with outdoor and indoor
- All dielectric construction
- Multi-mode or single-mode fiber optic
- ATM, FDDI, CATV, FTTX, communication

CHARACTERISTIC

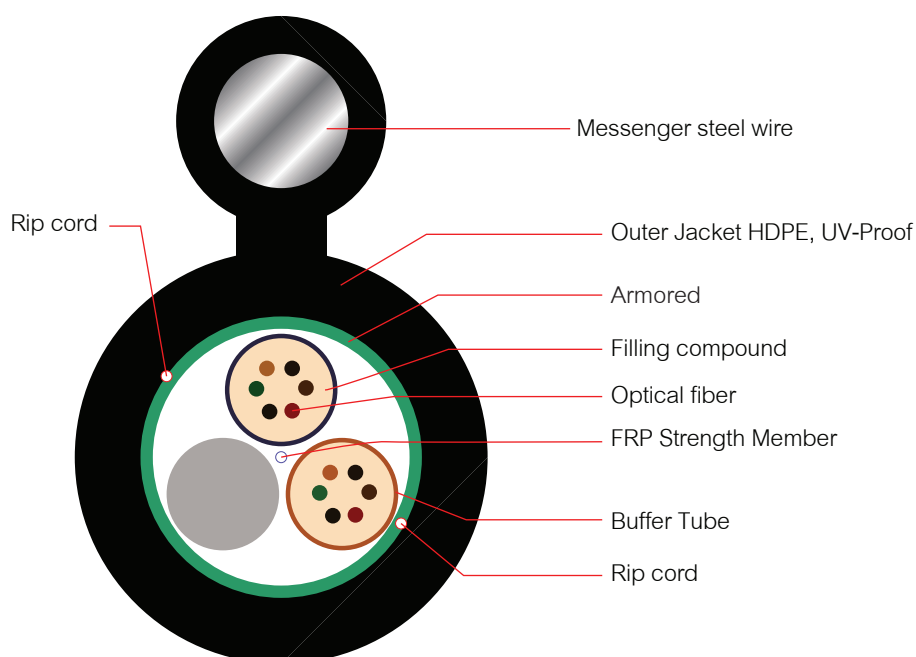
- Messenger steel wire
- Filling compound
- Optical fibers
- Water Blocking Tape
- Aramid yarns/E-Glass yarn
- Corrugated steel tape
- Outer jacket HDPE (LSZH) with rodent protection
- Rip cord Polyester Cord 2pcs



F-ML-DWA9-XX

STANDARD

ISO/IEC 11801:2002, ANSI/TIA-568-C.3, ANSI/TIA/EIA-568-B.3, ANSI/ICEA 696&596, TIA/EIA-598-A, Telcordia GR-409-CORE, Telcordia GR-20-CORE, IEC 60793, IEC 60793-2, IEC 60794-1-2, IEC 61034-2, IEC 60754-2, IEC 60332-1-2, IEC 60332-1, ITU-T G.652D (Single mode), ITU-T G.651 (Multimode), EN 50173-1, ITU-TG 657A2, RoHS Compliant 2002/95/EC, IEC 60793-2 B 1.3, TIS 2166, ICEA 640, ANSI/TIA-568.3-D



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CONSTRUCTION

Structure		Parameter	
Fiber count		Fibers	6/12
Loose tube		Material	PBT
		No. fiber per tube	6/12
		Diameter	Approx. 2.5
		Filling compound material	Thixotropic jelly
Support wire	Material	Galvanized steel wire	
	Diameter	Φ1.2 mm	
Armored	Material	Corrugated steel tape	
Strength member	Material	Aramid yarn /E-Glass yarn	FRP 0.5 mm
Cable diameter Overall	Material	HDPE / FR-LSZH with Rodent Repellent (LS2)	
	Thickness	1.6 mm	
Cable sheath	Approx. 8.3 um		
Core Diameter	Approx. 4.5		
	Approx.9.6 ±1.0		

FIBER COLOR

Category	Description	Specifications		
		G.652		
Optical Specifications	Attenuation	@1310nm	≤0.35/0.33dB/km	
		@1383nm	≤0.35/0.31db/km	
		@1550nm	≤0.21/0.19db/km	
		@1625nm	≤0.23/0.20db/km	
		Attenuation discontinuity	≤0.05dB	
	Attenuation vs. Wavelength	@1285 -1330 nm	≤0.05dB/km	
		@1525 -1575nm	≤0.05dB/km	
		Zero dispersion wavelength	1300-1324nm	
		Zero dispersion slope	≤0.092ps/(nm ² .km)	
	Dispersion	@1310nm	≤3.5ps/nm.km	
		@1550nm	≤18ps/nm.km	
		Polarization mode dispersion	≤0.5ps/km ^{1/2}	
		Cable cutoff wavelength (λ _{cc})	≤1260nm	
Effective group index of refraction	@1310nm	1.4676		
	@1510nm	1.4682		
Geometric Specifications	Mode field diameter	@1310nm	9.2±0.6μm	
		@1550nm	10.4±0.8μm	
	Cladding diameter	125±1μm		
	Cladding non-circularity	≤1.0%		
	Coating diameter , Primary	242±5μm		
	Coating/Cladding concentricity error	≤12μm		
	Core/Cladding concentricity error	≤0.5μm		
	Coating diameter , Secondary	250±5μm		
	Core non -circularity	≤5%		

Mechanical Specifications	Proof test level	≥1.0%
	Proof test Stress	100 Kpsi
	Fiber curl radius	≥4.0m
	Peak coating strip force	1.3-8.9N
Max. tensile load	Installation	1800N
	Operation	800N
Maximum Crush resistance		1,500 N./10 cm.
Bending radius	Dynamic	20H
	Static	10H
Max Span Length		40-80m
Maximum Wind Velocity		126 km./hr.
Minimum bending Radius	Installation	15 x Diameter of Cable
	Operation	10 x Diameter of Cable
Operating temperature	Installation	-40+70°C
	Operation	-40+70°C
	Storage	-40+75°C

TEST REQUIREMENTS

Item	Test standard	Method	Acceptance criteria
Tensile test	IEC 60794-1-2-E1A	- Max. tensile strength:1200N	Fiber strain at maximum
	TIA/EIA-455-33A	- Sample length:50 meters	Load: max. 0.33%
		- Time: 1 minutes;	-Attenuation increase ≤0.50dB
Crush test	IEC 60794-1-2-E3	- Load:500N	No splits or cracks in the outer jacket;
	TIA/EIA-455-41A	- Time: 1 minutes	-No fiber break
		- Length: 100mm	
Impact test	IEC 60794-1-2-E4	- Impact energy: 150g	-No splits or cracks in the outer jacket
	TIA/EIA-455-25B	- Height:1 meter	-Attenuation increase ≤0.50dB
		- Impact points: min.1	
		- Number of impacts: 5	
Bending test	IEC 60794-1-2-E6,	- Diameter of mandrel: 20×D	- No splits or cracks in the outer jacket
	TIA/EIA-455-104A	- Number of turns/helix:10	- No fiber break
	IEC 60794-1-2-E11B	- Number of cycles: 5	
Temperature cycling test	IEC 60794-1-2-F1	- Temperature step: +20°C ~ 0°C ~	Attenuation variation for reference value
	TIA/EIA-455-3A	+60°C ~ 0°C ~ +60°C ~ +20°C	(The attenuation to be measured before test at
		- Time per each step: 12 hrs.	+20±3 C) ≤0.50dB/km
		- Number of cycles: 2 cycles	
Water penetration test	IEC 60794-1-2-E5	- Water height: 1m	-No water leakage at the end of the sample
	TIA/EIA-455-82B	- Sample length:3m	
		- Duration of test: 24hrs.	
Drip test	IEC 60794-1-2-E14	- Five 0.3m samples suspended vertically in a climate chamber, raised temperature to +70°C	-No filling compound shall drip from tubes after 24 hrs.
Torsion or Twist test	IEC 60794-1-2-E7	- 1 m cable length with 150 N weight	- No splits or cracks in the outer jacket
	TIA/EIA-455-85A	- ±180° ,10 cycles	-Attenuation increase ≤ 0.10 dB (after the test)

MECHANICAL PROPERTIES

	4-8 CORE	12 CORE
- Cable Diameter, approx	9.3 ± 0.5 mm	9.8 ± 0.5 mm
- Cable Weight, approx.	52 ± 0.5 kg/km	58 ± 0.5 kg/km

IDENTIFICATION COLOR CODE OF FIBER AND LOOSE TUBE

The color code of the loose tubes and the individual fibers within each loose tube shall be in accordance TIA/EIA-598-C (Rev.TIA/EIA-598-A) and EIA-359-A

NO.	FIBER COLOR	LOOSE TUBE COLOR
1	Blue	Blue
2	Orange	Orange
3	Green	Green
4	Brown	Brown
5	Slate	Slate
6	White	White
7	Red	Red
8	Black	Black
9	Yellow	Yellow
10	Violet	Violet
11	Rose	Rose
12	Aqua	Aqua

PACKING AND DRUM

The cable is rounded on a non-returnable wooden drum. Both ends of cable are securely fastened to drum and sealed with a shrinkable cap to prevent ingress of moisture. The following information shall be marked on the outer sheath of the cable at an interval of about 1 meter.

- Cable type and number of optical fiber
- Manufacturer name
- Month and Year of Manufacture
- Cable length

The sequential number of the cable length shall be marked on the outer sheath of the cable at an interval of 1meter \pm 1%

ORDER INFOMATION

PRODUCT	PART NUMBER
Outdoor Cable, Drop Wire, with Armored, SM 9/125um 6 Core	F-ML-DWA9-06
Outdoor Cable, Drop Wire, with Armored, SM 9/125um 12 Core	F-ML-DWA9-12