FiberLight

13-Nov-25

PN: **FLFOCODD204CTSWASTAHD**

OPTICAL FIBER CABLE

TECHNICAL DATA SHEET

DUCT- DIRECT BURIED CABLE

CENTRAL TUBE CONSTRUCTIONS

DOUBLE STEEL WIRE AND STEEL TAPE WITH RIP CORD

ANTI-CORROSION AND UV RESISTANCE CABLE

WATER PROTECTED - RODENT PROTECTED - ANTI-TERMITE

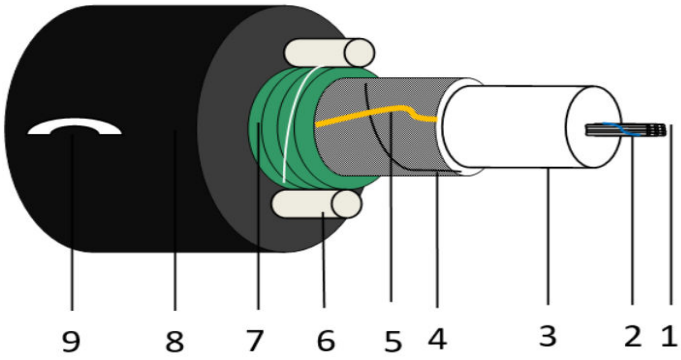
4 FIBERS, COMPLYING WITH ITU-T G.652D

A-D(ZM)(SR)2Y 1x04 E9/125 CT

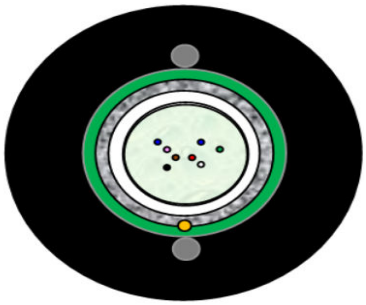
International Code: A-D(ZM)(SR)2Y 1x04 E9/125 CT

Cable Application

Cable can be designated as duct-buried (metallic) rodent protected cable. Cable can be installed by pulling in duct or buried or on cable trays. Fiber optic cables are used for triple-play (Voice-video-data), FTTx applications in telecommunication projects, long-haul, backbone, metropolitan, broadband, utility and intelligent traffic control, supervisory control and data acquisition (SCADA), cable TV (CATV), military, etc.



Drawing Is Not To Scale



Cable Construction

Cable Element	Cable Construction
Fibers	4F, Single Mode Fiber ITU-T G.652D
Fiber Bundle Binders (If Required)	Color of fiber bundle binder (Not Required less than 12)
Central Tube (Jelly Filled)	Central Tube, with 4 Fiber Uni-tube
Core Wrapping (Longitudinal)	Water blocking tape wrapped over Uni-tube with binder
Metallic Strength Members	Longitudinal Steel wires diametrically opposite each other
Polyester Ripcord	Ripcord under steel tape for easy sheath removing
Metallic Steel Tape Armoring	ECCS, Corrugating steel tape for rodent/mechanical protection
Outer Polyethylene Sheath	HDPE, Black and UV Resistant
Method of Cable Marking	White Ink-Jet Printing
Outer Cable Diameter	10.0 mm (Approx.)
Cable Weight	75 kg/km (Approx.)
Mechanical Requirements	Maximum Tensile Strength - 2000N / Crush Strength - 2000N
Minimum bending radius	(during installation)=20 x Cable OD = 200 mm
	(installed cable)=15 x Cable OD = 150 mm

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Cable Design

Outdoor cable - Fibers bundles, Jelly filled central tube wrapped by water blocking tape, core wrapped by tape, two steel wires diametrically opposite to each other serving as extra strength and anti-buckling members, corrugating steel tape for rodent & mechanical protection and outer sheath of high density Polyethylene (UV resistant)

Cable Application Standards

IEC 60793, IEC 60794-1-2, ITU-T Recommendations, TIA/EIA-455 (FOTP)

Fiber Colors

FIBER COLOR (1-4Fibers)	BLUE	ORANGE	GREEN	BROWN

Cable Marking

Fiber Light 4F SM Fiber Optic Outdoor Double Armored Cable – ITU-T G.652D, IEC 60793, IEC 60 794-1-2, XXXX Meter Marking

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Optical Fiber (ITU-T G.652D)

Optical Single Mode fibers made of a germanium doped silica core, silica cladding and dual layer of acrylate coating over cladding. Coloring is applied over the coating for easy identification. Fibers are optimized at a wavelength of 1310nm and 1550nm region but can be used in 1380nm region complying with the ITU-T G.652 A, B, C, D and IEC 60793-2-50 type B.1.3 specifications.

Structural Specification

Mode field diameter @ 1310/1550 nm	**9.2 ≤ 0.4 m / 10.4 ≤ 0.5 um**
Cladding diameter	125.0 ≤ 0.7 um
Coating diameter (Colored)	255.0 ≤ 10 um
Core/MFD concentricity error	≤ 0.6 um
Cladding non-circularity	≤ 1.0 %

Optical Specification

Attenuation @ 1310 nm / 1550 nm	**≤ 0.35 dB/km / ≤ 0.22 dB/km**
Dispersion @ 1285 – 1330nm / 1550nm	≤ 3.5 PS/(nm.km) / ≤ 18.0 PS/(nm^{2}ukm)
Zero dispersion wavelength (λo)	1300 ≤ λo ≤ 1324 nm
Zero dispersion slope (So)	So≤ 0.092 PS/(nm^{2}ukm)
Polarization mode dispersion	≤ 0.2 PS/√km
Cable cut-off wavelength (λcc)	λcc ≤ 1260 nm
Point Discontinuity @ 1310/1550nm	≤ 0.2 dB
Effective group index of refraction (Neff)	1.4675 @ 1310nm / 1.4681 @ 1550nm

Mechanical Specification

Proof test	≥ 1 % (100kpsi or 0.7 GPa)

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Technical Characteristics for Optical Fiber Cable:

Tests	Specification	Conditions	Acceptance Criteria
Temperature cycle	IEC 60794-1-F1	-20 C to +70 C, 1hr 2 cycle	Attenuation change ≤ ±0.1 dB/km
Tensile Strength	IEC 60794-1-E1A	Max 2000 N; 10min	Attenuation change ≤ ±0.1 dB/km
Crush	IEC 60794-1-E3	2000 N/100mm; 10min.	Attenuation change ≤ ±0.1 dB/km
Impact	IEC 60794-1-E4	3 spot, 1m, 1kg	Attenuation change ≤ ±0.1 dB/km
Cable Bend Radius	IEC 60794-1-E11	15 × OD, No Load	Attenuation change ≤ ±0.1 dB/km
Repeated Bending	IEC 60794-1-E6	20 x OD, 1kg, 2 cycle	Attenuation change ≤ ±0.1 dB/km
Twist	IEC 60794-1-E7	2m, 1kg, 180°,5 cycle	Attenuation change ≤ ±0.1 dB/km
Kink	IEC 60794-1-E10	15 x OD	No defect on fiber and sheath
WPT	IEC 60794-1-F5B	L=3mt, H=1mt, T=24hrs	No water leakage

Environmental Properties for Optical Fiber Cable:

Relative Humidity	5% to 95%
Operating Temperature	-40°C to +70°C
Installation/Transportation/Storage	-20°C to +65°C

Optical Properties for Optical Fiber Cable:

Average Attenuation @1310nm	**≤ 0.4dB/km**
Average Attenuation @1550nm	≤ 0.3dB/km
Chromatic Dispersion @ 1285-1330nm	≤ 3.5ps/nm.km
Chromatic Dispersion @ 1550nm	≤ 18ps/nm.km
PMD (Maximum for each individual fiber)	≤ 0.2ps/√km

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Standard Cable Length

Standard Cutting Length: 3000mts ± 10%

Drum Marking

All necessary cable information shall be marked on the wooden drum outer flanges by using water proof Ink or water proof label or aluminum plate.

Packing and Shipping

The cable wooden drum shall be of the standard manufacturing length but special length if any can also be provided on customer request. The wooden drum barrel diameter shall not be less than 50 times of the nominal outer diameter of the cable. The cable ends shall be sealed with shrinkable end caps on both sides of the cable. The cable wooden drum is protected by whether proof sheet and wooden battens. The direction of rotation shall be marked on the drum flange.

Cable Features

The Cable Lifetime more than 30 years.