PN: FLFOCODD2024OM2SWLGASTAHD

OPTICAL FIBER CABLE

TECHNICAL DATA SHEET

DUCT- DIRECT BURIED CABLE

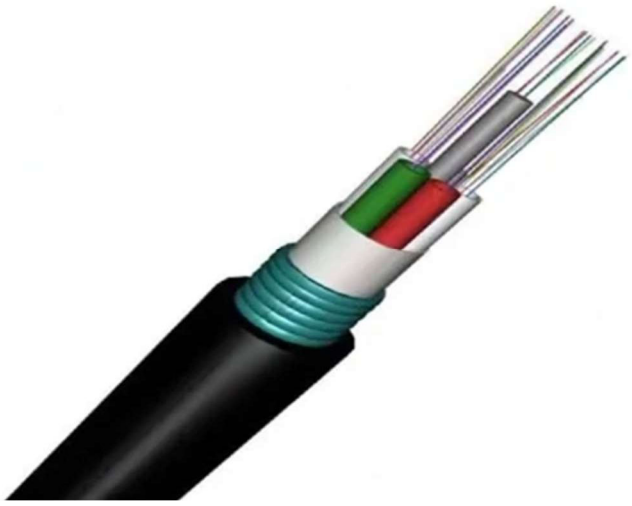
DOUBLE STEEL WIRE AND STEEL TAPE WITH RIP CORD

ANTI-CORROSION AND UV RESISTANCE CABLE

WATER PROTECTED - RODENT PROTECTED - ANTI-TERMITE

24 Fibers, Multimode 50/125 µm

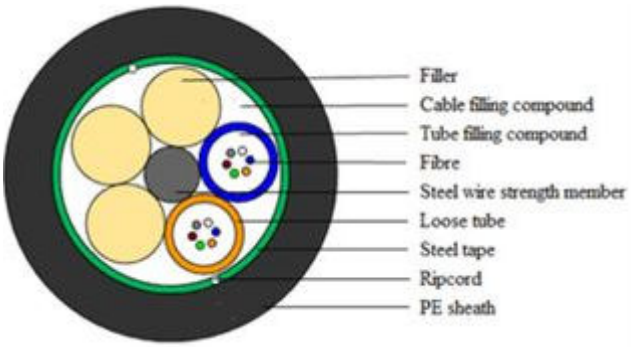
A-DQ(ZN)(SR)2Y 2X12 G50/125 LG



International Code: A-DQ(ZN)(SR)2Y 2X12 G50/125 LG

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.



Installation Guidelines

- Avoid exceeding the specified maximum tensile load during installation.
- Maintain the specified minimum bending radius during installation and after installation.
- Avoid sharp bends, kinks, twisting, and excessive pulling force.
- Use suitable cable pulling equipment and accessories during duct installation.
- Seal the cable ends properly to prevent moisture and contamination from entering the cable.
- Avoid dragging the cable directly over sharp or abrasive surfaces.
- Protect the cable from excessive impact, crushing, and mechanical stress during installation.
- Follow the manufacturer's recommended installation procedures and applicable cable standards

Cable Construction

Item	Cable Element	Cable Construction
1	Fibers	24F, Multimode Fiber, 50/125 µm
2	Dielectric central strength member	FRP (Fiber Reinforced Plastic)
3	Loose Tube (Jelly Filled)	PBTP material, with 12 Fiber loose tube
4	Water Blocking elements	Water Blocking Yarns for water blocking along core
5	Core Wrapping (Longitudinal)	Water Blocking tape wrapped over SZ stranded core with binder
6	Metallic Steel Strength Members	Longitudinal two steel wire serving as extra strength
7	Metallic Steel Tape Armoring	ECCS, Corrugating steel tape for rodent/mechanical protection
8	Outer Polyethylene Sheath	HDPE, 1.8 mm nominal thickness, Black Color and UV Resistant
9	Method of Cable Marking	Hot Foil Stamping with White tape
-	Ripcord	Two Polyester Ripcords under steel tape for easy sheathing removal
-	Outer Cable Diameter	12.0 mm (Approx.)
-	Cable Weight	143 kg/km (Approx.)
-	Mechanical Requirements	Maximum Tensile Strength – 2000N / Crush Strength – 1000N*
-	Minimum Bending Radius	During installation = 20 × Cable OD = 240 mm / Installed cable = 15 × Cable OD = 180 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** – Optical Fibers
- **IEC 60794** – Optical Fiber Cables
- **IEC 60794-3** – Outdoor Optical Fiber Cables
- **IEC 60793-2-10** – Multimode Optical Fiber

Fiber Colors

FIBER COLOR (1-6Fibers)	BLUE	ORANGE	GREEN	BROWN	Grey	White
FIBER COLOR (7-12Fibers)	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube Colors

FIBER COLOR (1-6Fibers)	BLUE	ORANGE	-	-	-	-
FIBER COLOR (7-12Fibers)	-	-	-	-	-	-

Cable Marking

FiberLight 24F MM Fiber Optic Outdoor Double Armored Cable – OM2 50/125 µm, IEC 60793, IEC 60794-1-2, XXXX Meter Marking

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Optical Fiber

Multimode optical fibers made of a silica core, silica cladding and dual layer of acrylate coating over the cladding. Coloring is applied over the coating for easy identification. The fibers are 50/125 µm graded-index multimode fibers, complying with IEC 60793-2-10

Structural Specification

Parameter	Specification
Core Diameter	50.0 ± 2.5 µm
Cladding Diameter	125.0 ± 1.0 µm
Coating Diameter (Colored)	245 ± 15 µm
Core/Cladding Concentricity Error	≤ 1.5 µm
Cladding Non-Circularity	≤ 1.0 %
Numerical Aperture	0.200 ± 0.015

Optical Specification

Parameter	Specification
Attenuation @ 850 nm	≤ 3.0 dB/km
Attenuation @ 1300 nm	≤ 1.0 dB/km
Bandwidth @ 850 nm	≥ 500 MHz·km
Bandwidth @ 1300 nm	≥ 500 MHz·km
Maximum Theoretical Bandwidth	According to IEC 60793-2-10
Operating Wavelength	850 / 1300 nm

Mechanical Specification

Parameter	Specification
Proof Test	≥ 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^2ukm)
Zero dispersion wavelength (λo)	1300 ≤ λo ≤ 1324 nm
Zero dispersion slope (So)	So≤ 0.092 PS/(nm^2ukm)
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

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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 3000 N; 10min	Attenuation change ≤ ±0.1 dB/km
Crush	IEC 60794-1-E3	3000 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, 2kg, 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.