

Duct (DC) Optical Fiber Cable (Sm 12-288 Fibers)



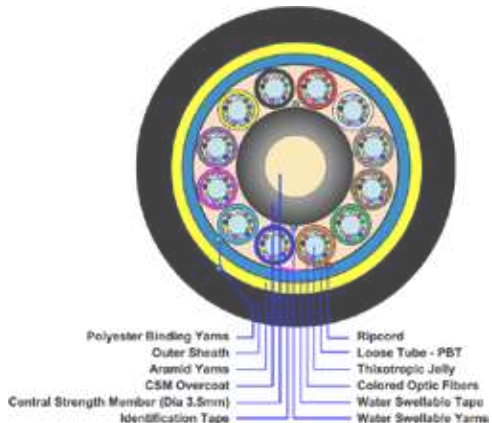
Cable Description

This cable is purpose-built for metropolitan networks and is typically installed within ducts. It is offered with a fiber capacity of up to 288. Customers have the flexibility to choose the desired fiber count and type to match their specific needs. The cable core is fundamentally based on a dry-block construction.

Application and Key features		
1	Usage Scenarios	Ideal for Metropolitan Networks
2	Installation Method	Suitable for Pulling in Ducts
3	Cable Design	Stranded loose tube architecture
4	No of Fibers	Supports fiber count of up to 288
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Characteristics	Characterized by its lightweight and flexible nature

Cable cross-section

144 F DC





Cable Parameter

No of Fibers	12 F	24 F	48 F	96 F	144 F	288 F
Fiber per Tube	04 F	06 F	08 F	12 F	12 F	12 F
No. of Tubes	03	04	06	08	12	First :09 Second:15
No. of Fillers	03	02	-	-	-	-
Outer dia.	11.0±0.5	11.0±0.5	12.0±0.5	14.0±0.5	16.5±0.5	20±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is controlled during the manufacturing
4.	Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Aramid Yarns are used as Peripheral Strength Member to provide the tensile strength, these strength member are used over the Water Swellable (WS) tape
7.	Ripcord	Ripcord is provided and is placed below the Outer Sheath
8.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12F-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48F-288 F	Inner dia. 48F-288 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.6±0.1 mm	1.8±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME SDC-144 F-OFC- XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
SDC	Standard Duct Cables
144F-OFC	144 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA:-10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 2 kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute



9	Torsion Test	IEC 794-1-E7	7.8	No.of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is 2000,4000,6000m±5%

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

Armoured Buried (BC) Optical Fiber Cable (Sm 12-288 Fibers)



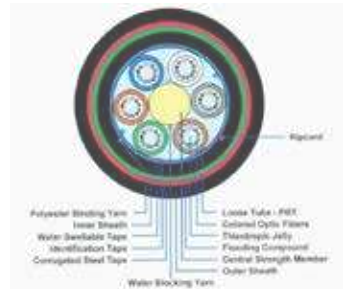
Cable Description

This cable is meticulously (very thoroughly) design for extensive long-distance transmission networks. It accommodates fiber count ranging from 12 to 288. The fiber type can be chosen as G.652.D, G.655.C, or a combination tailored to the customer's specifications. The cable's structure follows a stranded loose tube design.

Application and Key features		
1	Usage Scenarios	Suitable for long-haul, metropolitan networks and for high tensile strength requirements
2	Installation Method	Designed for direct burial
3	Cable Design	Stranded loose tube architecture with addition to aramid yarns (DRY Block Type)
4	No of Fibers	Supports fiber count up to 288
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Protection Against Rodents and Mechanical Stress	Equipped with Copolymer Coated Corrugated Steel Tape and Aramid yarns and double sheaths
7	Characteristics	Demonstrates excellent mechanical resilience, high tensile and crush strength and temperature tolerance

Cable cross-section

72 F BC





Cable Parameter

No. of Fiber	12 F	24 F	48 F	72 F
Fiber per Tube	04 F	06 F	08 F	12 F
No. of Tubes	03	04	06	08
No. of Fillers	03	02	-	-
Outer dia.	19±0.5	19±0.5	20.5±0.5	20.5±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D and G657A1/A2 specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is controlled during the manufacturing
4.	First Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Aramid Yarns are used as Peripheral Strength Member to provide the tensile strength
7.	Ripcord	Ripcord is provided and is placed below the Outer Sheath
9.	Second Moisture Protection	Aluminum Tape (optional)
10.	Inner Sheath	Cable Grade MDPE Black color (Medium Density Polyethylene)
11.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)
12.	Armoring	Copolymer corrugated steel tape

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48-288 F	Inner dia. 48-288 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.6±0.1 mm	1.8±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME PBC-48 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
PBC	Premium Buried Cables
48F-OFC	48 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITUT.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITUT G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2500 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 2kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	30 bends/min Load 75/125 N



9	Torsion Test	IEC 794-1-E7	7.8	No.of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000,4000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

Double Armoured Buried (DBC) Optical Fiber Cable (SM 12-144 Fibers)



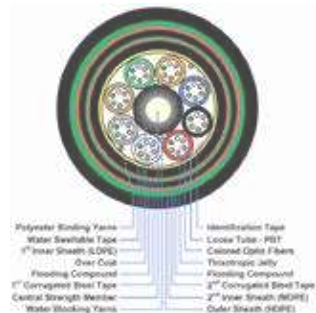
Cable Description

This description pertains to the Triple Jacket Double Armoured Optical Fiber Cable, meticulously crafted to meet the challenges of rugged environment due to its Double Armor and Three Jackets, offering enhanced strength and safeguarding against rodents.

Application and Key features		
1	Usage Scenarios	Suitable for long-haul, metropolitan networks and for high tensile strength requirements
2	Installation Method	Designed for direct burial
3	Cable Design	Stranded loose tube design with addition to aramid yarns (*Dry Block Type)
4	No of Fibers	Supports a fiber count of up to 144
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Protection Against Rodents and Mechanical Stress	Equipped with Double Armoured Copolymer Coated Corrugated Steel Tape and Aramid yarns and triple sheaths
7	Characteristics	Demonstrates excellent mechanical resilience, high tensile and crush strength and environmental performance

Cable cross-section

48 F DBC (Double Armoured)





Cable Parameter

No. of Fiber	12 F	24 F	48 F	72 F	96 F	144 F
Fiber per Tube	04 F	06 F	08 F	12 F	12 F	12 F
No. of Tubes	03	04	06	06	08	12
No. of Fillers	03	02	-	-	-	-
Outer dia.	19.5±0.5	19.5±0.5	21±0.5	21±0.5	24±0.5	27±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Controlled Excess Fiber length (EFL) is provided during the manufacturing 02 Binder yarns for the loose tube and one for the core wrap (WS tape)
4.	Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Glass/Aramid Yarns are used as Peripheral Strength Member to provide the tensile strength
7.	1st Inner Sheath	Cable Grade LDPE/MDPE Black color
8.	2nd Inner Sheath	Cable Grade MDPE Black color (Medium Density Polyethylene)
9.	3rd Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)
10.	Armoring	Copolymer corrugated steel tape

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12F-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48F-144 F	Inner dia. 48F-144 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.6±0.1 mm	1.8±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME SBC-144 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
DBC	Double Armoured Buried Cables
144F-OFC	144 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITUT.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITUT G652 D, G655C
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	Item	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2500 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 2.5kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	30 bends/min Load 75/125 N



9	Torsion Test	IEC 794-1-E7	7.8	No.of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000/4000/6000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilogram

High Fiber Count Buried (HFC-BC) Optical Fiber Cable (SM 12-288 Fibers)



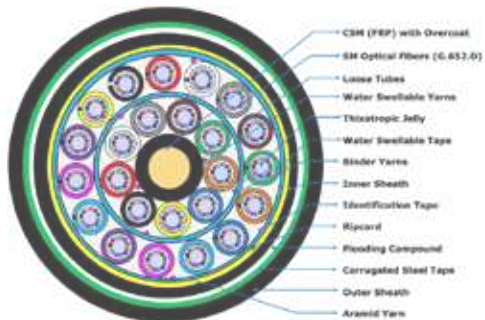
Cable Description

This cable is meticulously engineered for extensive long-distance and feeder cable FTTH networks. It accommodates fiber count ranging from 12 to 288. The fiber type can be chosen as G.652, G.655, or a combination tailored to the customer's specifications. The cable's structure follows a stranded loose tube design.

Application and Key features		
1	Usage Scenarios	Suitable for long-haul transmission networks, SCADA networks, and metropolitan networks
2	Installation Method	Designed for direct burial
3	Cable Design	Stranded loose tube structure (Dry Block Type)
4	No of Fibers	Supports a fiber count of up to 288
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Protection Against Rodents and Mechanical Stress	Equipped with Copolymer Coated Corrugated Steel Tape and double sheaths
7	Characteristics	Demonstrates excellent mechanical resilience and environmental performance

Cable cross-section

288 F HFC-BC





Cable Parameter

No. of Fiber	12 F	24 F	48 F	96 F	144 F	288 F
Fiber per Tube	04 F	06 F	08 F	12 F	12 F	12 F
No. of Tubes	03	04	06	08	12	First layer:09 Second:15
No. of Fillers	03	02	-	-	-	-
Outer dia.	14.5±0.5	14.5±0.5	15.5±0.5	17.5±0.5	20.5±0.5	25.5±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G.652.D specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Controlled Excess Fiber length (EFL) is provided during the manufacturing
4.	Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Glass/Aramid Yarns are used as Peripheral Strength Member to provide the tensile strength
7.	Ripcord	Ripcord is provided and is placed below the Outer Sheath
8.	Inner Sheath	Cable Grade MDPE Black color (Medium Density Polyethylene)
9.	Armoring	Copolymer corrugated steel tape
10.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12F-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48F-288 F	Inner dia. 48F-288 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.6±0.1 mm	1.8±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME SBC-144 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
SBC	Standard Buried Cables
144F-OFC	144 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITUT.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITUT G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA:-10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 2 kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute



9	Torsion Test	IEC 794-1-E7	7.8	No.of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000,4000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

All Dielectric Self Supporting (ADSS-AC) Optical Fiber Cable (SM 08-288 Fibers)



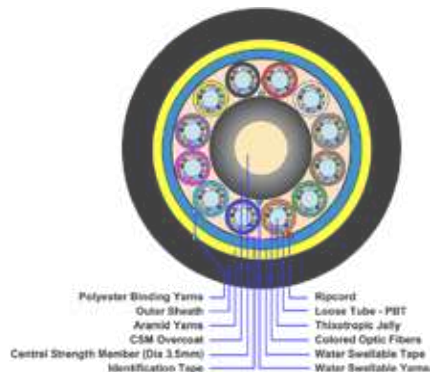
Cable Description

This cable is specifically designed for metropolitan networks and is suitable for aerial applications. It is accessible with a fiber capacity of up to 144. Customers have the freedom to choose both the desired fiber count and fiber type according to their needs, with a maximum of 144 fibers achievable. It has been designed with enhanced tensile strength. The cable core maintains its foundation in dry-block construction principles.

Application and Key features		
1	Usage Scenarios	Well-suited for Aerial/Metropolitan Networks
2	Installation Method	Suitable for both Aerial applicants
3	Cable Design	Stranded loose tube architecture (*Dry Block Type)
4	Number of Fibers	Maximum fiber count up to 144
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Characteristics	Characterized by its lightweight and flexible nature

Cable cross-section

144 F ADSS-AC





Cable Parameter

No of Fibers	08 F	12 F	24 F	48 F	96 F	144 F	288 F
Fiber per Tube	04 F	04 F	06 F	08 F	12 F	12 F	12 F
No. of Tubes	02	03	04	06	08	12	9+15
No. of Fillers	03	02	01	-	-	-	-
Outer dia.	10.5±0.5	10.5±0.5	10.5±0.5	12±0.5	14.0±0.5	18.1±0.5	23±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is controlled during the manufacturing
4.	Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Aramid Yarns / Glass Yarns are used as Peripheral Strength Member to provide the desired required tensile strength
7.	Ripcord	Ripcord is used to shear the outer Jacket
8.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12F-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48F-288 F	Inner dia. 48F- 288 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.5±0.1 mm	1.7±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME ADSS-144 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
ADSS	All Dielectric Self Supporting Cables
144F-OFC	144 Fibers SM -OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every after 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G652 D
Dimensions	
Mode Field Diameter @ 1310 nm @ 1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≤4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @ 1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≤400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ± 5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 1 kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km



8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute
9	Torsion Test	IEC 794-1-E7	7.8	No. of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km

Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000,4000,6000m±5%**
- **Cable Identification Documents**
 - Test reports to be placed with each drum
- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)
 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

Aerial Figure-8 Cables (Fig-8 AC) Optical Fiber Cable (SM 12-144 Fibers)



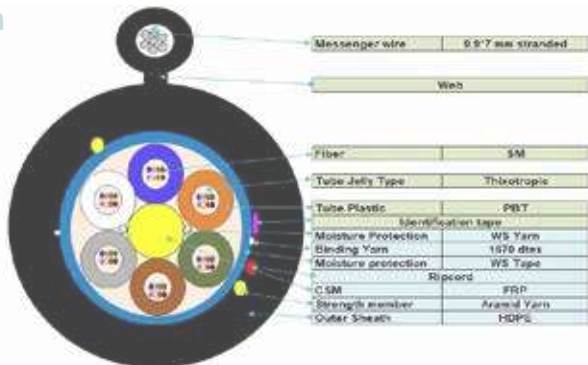
Cable Description

The cable employs a Multi-Tube construction and prominently features a messenger wire, making it well-suited for FTTH and last mile aerial connectivity.

Application and Key features		
1	Usage Scenarios	Ideal for CATV, Railway & harsh environmental conditions
2	Installation Method	Suitable for Aerial Application and other relevant needs, designed as a Self-Supporting Cable
3	Cable Design	Stranded loose tube design (Dry Block Type)
4	No of Fibers	Supports a fiber count of up to 144
5	Fiber Types	Compatible with G.652.D and G.655.C fibers
6	Characteristics	Exhibits self-supporting capabilities through the integration of a Messenger Wire

Cable cross-section

48 F F-8 AC





Cable Parameter

No of Fibers	12 F	24 F	48 F	96 F	144 F
Fiber Per Tube	04 F	06 F	08 F	12 F	12 F
No. of Tubes	03	04	06	08	12
No. of Fillers	03	02	-	-	-
Outer dia.(mm)	11.0/6±0.5	11.0/6±0.5	12.0/6±0.5	14.0/6±0.5	16.0/6±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Central Strength Member (CSM)	Fiber Reinforced Plastic (FRP) is used as Non-Metallic Strength Member with diameter as per design .
3.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is provided during the manufacturing 02 Binder yarns for the loose tube and one for the core wrap (WS tape)
4.	Moisture Barrier	Dry Water Blocking Technology is used, the same is achieved through Water Swellable Yarns & Tape
5.	Identification Tape	The identification tape is placed with desired printing as per customer specification
6.	Peripheral Strength Member	Aramid Yarns are used as Peripheral Strength Member to provide the tensile strength, these strength member are used over the Water Swellable (WS) tape
7.	Ripcord	Ripcord is provided and is placed below the Outer Sheath
8.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)
9.	Suspension Strand	Seven Stranded Galvanized Steel Wire is used as a supporting strength member

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors					
Outer dia. 12F-24 F	Inner dia. 12-24 F	Wall Thickness	1	2	3	4	5	6
2.2±0.1 mm	1.4±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White

Loose Tube			Tube Colors											
Outer dia. 48F-144 F	Inner dia. 48F-144 F	Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12
2.5±0.1 mm	1.7±0.1 mm	0.4 mm	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Sheath Marking

LTE -YEAR-CUSTOMER NAME SAC-144 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
SAC	Standard Aerial Cables
144F-OFC	144 Fibers SM -OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	2000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 2 kg from 1 meter height No fiber break& damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute



9	Torsion Test	IEC 794-1-E7	7.8	No.of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000,4000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

CLT Fig-08 Armoured (Fig-08 CLT) Optical Fiber Cable (SM 02-12 Fibers)



Cable Description

FIG-08 is designed with 02 to 12 fibers. To ensure robustness and tensile strength steel wire is providing physical strength. While options such as HDPE or MDPE are available for jacketing the cable. Steel tape is corrugated to provide mechanical strength to the cable

Application & Key features		
1	Usage Scenarios	CATV and similar uses
2	Installation Method	Suitable for aerial installations and other similar requirements
3	Design of Cable	Single tube design (Dry Block Type) with steel wire at the top of the cable to form Fig-08 design
4	No of Fibers	Ranging from 02 to 12
5	Fiber Types	Compatible with G.652.D and G.655.C
6	Characteristics	Self-supporting with messenger wire and strong mechanical characteristics.
7	Key Features	Employing Central Loose Tube (Fig-08) construction, exhibiting smaller diameters compared to alternative constructions. Incorporates Corrugated Steel Tape for enhanced protection against mechanical damage.

Cable cross-section

06 F Fig-8 CLT





Cable Parameter

No. of Fibers	02 F	04 F	08 F	12 F
Outer dia.	8/3.5±0.5	8/3.5±0.5	8/3.5±0.5	8/3.5±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02-12 (as per design) Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is controlled during the manufacturing
3.	Moisture Barrier	Thixotropic jelly and WS yarn
4.	Strength Member	Steel wire 0.8/1.0 mm each
5.	Armoring	Copolymer coated steel tape
6.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Color
Outer dia. 02-06 F	Inner dia. 02-06 F	Wall Thickness	1
2.4±0.1 mm	1.6±0.1 mm	0.4 mm	White/Colored (depending upon customer requirements)

Loose Tube			Tube Color
Outer dia. 08-12 F	Inner dia. 08-12 F	Wall Thickness	1
2.8±0.1 mm	2.0±0.1 mm	0.4 mm	White/Colored (depending upon customer requirements)

Sheath Marking

LTE -YEAR-CUSTOMER NAME-CLT FIG-8-12 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
CLT FIG-8	Central Loose Tube Figure-8
12 F-OFC	12 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	1000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 1 kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute



9	Torsion Test	IEC 794-1-E7	7.8	No. of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000/4000/6000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

CLT Armoured Cable (CLT) Optical Fiber Cable (SM 02-12 Fibers)



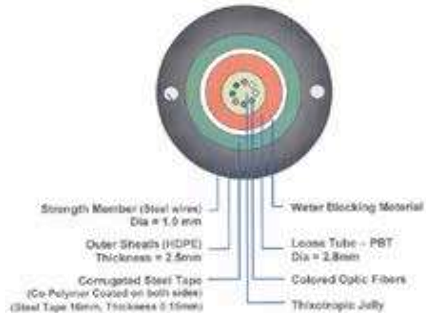
Cable Description

This cable is specifically crafted for LANs and CATV networks where there is a low fiber count requirement. It follows the Central Loose Tube construction design.

Application & Key features		
1	Usage Scenarios	CATV and similar uses
2	Installation Method	Suitable for aerial installations
3	Design of Cable	Single tube design
4	Number of Fibers	Ranging from 2 to 12
5	Fiber Types	G.652.D
6	Characteristics	Lightweight and Flexible
7	Key Features	Employing Central Loose Tube construction, exhibiting smaller diameters compared to alternative constructions. Incorporates Corrugated Steel Tape for enhanced protection against mechanical damage. Equipped with two phosphorus coated steel wires to ensure essential tensile strength.

Cable cross-section

08 F CLT





Cable Parameter

No of Fibers	02 F	04 F	08 F	12 F
Uni-tube (Single Tube) (Either White or Colored)				
Outer dia.	8.5±0.5	8.5±0.5	8.5±0.5	8.5±0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Loose Tube	<ol style="list-style-type: none"> 1. Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses 2. No. of Fibers in the tube:02-12 (as per design) 3. Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube 4. Precise Excess Fiber length (EFL) is controlled during the manufacturing
3.	Moisture Barrier	Thixotropic jelly is used in tubes, while WS yarn is used during outer sheath
4.	Strength Member	2 x Steel wires, of 0.8/1 mm
5.	Rodent protection	Copolymer coated steel tape
6.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors
Outer dia. 02-12 F	Inner dia. 02-12 F	Wall Thickness	1
2.4±0.1 mm	1.6±0.1 mm	0.4 mm	Blue

Sheath Marking

LTE -YEAR-CUSTOMER NAME-CLT-12 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per Customer Requirement
CLT	Central Loose Tube
12F-OFC	12 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G.652.D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm
Zero dispersion slope	≤0.092 ps/(nm ² .km)
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	≤0.2 ps/(√ km)
Mechanical Specifications	
Fiber Tensile Strength	≥400 MPa
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	Item	IEC Ref	Clause	Specification
1	Longitudinal Water Protection	IEC 794-1-F5	7.1	IEC Requirement Height of water: 1m Sample Length: 3m Time: 24 hour
2	Tensile Strength	IEC 794-1-E1	7.2	Tensile force of the cable that the cable will be capable of withstanding without any damage to the cable or affecting its performance Attenuation increase at 1550 nm and 1310 nm shall be less than 0.1 dB/km at full load and removal of load
3	Temperature Range	IEC 794-1-F1	7.3.1	Installation: -10 to 70 °C Operating: -10 to 70 °C
4	Temperature Cycling Test	IEC 794-1-F1	7.3.2	As per IEC 60794-1-2-F1 Sample length: at least 500mtrs Preconditioning: 24 hours at 23 °C ±5 °C Low temperature TA: -10 °C Time t1: 24 hours High temperature TB: 70 °C Number of cycles: 5
5	Crush Strength Test	IEC 794-1-E3	7.4	1000 N for a period of half hour No increase in attenuation at 1310 nm and 1550 nm at full load or removal of load
6	Impact Test	IEC 794-1-E4	7.5	Weight of 1 kg from 1 meter height No fiber break & damage to the cable Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
7	Bending Requirements	IEC 794-1-E6	7.6	10xOD without load 20xOD with load Attenuation increase at 1310 nm and 1550 nm shall be less than 0.1 dB/km
8	Repeated Bending Test	IEC 794-1-E6	7.7	Shall be 15 times the outside diameter of the cable to be tested for 100 cycles at frequency of 30 cycles per minute



9	Torsion Test	IEC 794-1-E7	7.8	No. of cycles:05 Cycles:±180° No damage to any cable component Attenuation allowed for each fiber at 1550 nm shall be less than 0.1 dB/km
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Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is **2000,4000,6000m±5%**

- **Cable Identification Documents**
 - Test reports to be placed with each drum

- **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms

FTTH Drop Cable (RDC) (Round Profile). 02-12 Fiber



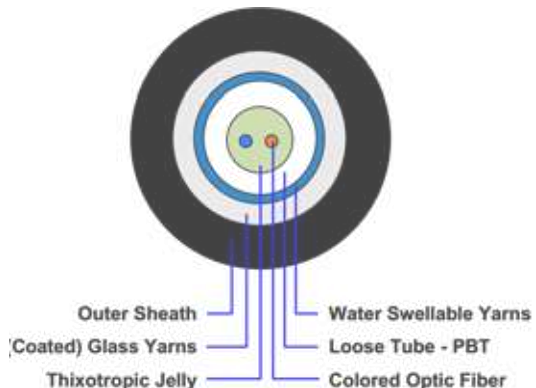
Cable Description

The FTTH Drop Cable comes in a robust, lightweight, and space-efficient design, facilitating seamless data transmission. This easily connectable cable has remarkable tensile strength and resilience. Its flame-retardant jacket enhances fire protection in various environments. Suitable for both indoor and outdoor cabling.

Application and Key features		
1.	Usage Scenarios	Indoor/Outdoor Environments, Resistant to Bending, FTTH Implementation
2.	No of Fibers	Supports up to 2-12 Fiber
3.	Fiber Varieties	Compatible with G.652.D/G.657 Specification
4.	Characteristics	Elevated Strength, Gentle Texture, Feather light Mass, Supple Flexibility, Impervious to Bending Stress, UV Endurance, and Water Repellence

Cable cross-section

02 F (RDC)





Cable Parameter

No of fibers	02-12 F
Sheath Thickness (mm)	1.2±0.2
Outer dia. (mm)	5.5±0.5
Minimum Recommended Sag	1 %
Span Length	≤50 meters
Cable Weight	30-45 kg approx.

Cable Item Description

S. No	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D/G-657 specifications
2.	Loose Tube	<ol style="list-style-type: none"> Loose tube material is Polybutylene Terephthalate (PBT), which allow free movement of fibers within the tube and protect them from axial or radial stresses Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise / controlled Excess Fiber length (EFL) is controlled during the manufacturing
3.	Strength Member	Aramid/Glass Yarn is used as Non-Metallic strength members
4.	Outer Sheath	Cable Grade HDPE Black color (High Density Polyethylene)

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2
G.652.D	Blue	Orange

Loose Tube			
Outer dia.	Inner dia.	Wall Thickness	1
2.8±0.1 mm	2.0±0.1 mm	0.4 mm	White

Cable Sheath Marking

LTE -YEAR-CUSTOMER NAME - FTTH ROUND DROP-02 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per customer requirements
Cable Code	FTTH Round Drop Aerial
02F-OFC	02 Fibers SM-OFC
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed after every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white Both cable ends are sealed with heat shrinkable end caps 	



The properties of SM optical fiber (ITU-T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.21 dB/km
Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	≤3.5 ps/(nm.km) @1285-1330 nm ≤18 ps/(nm.km) @1550 nm
Zero dispersion Wavelength	1310 nm ≤ λ ₀ ≤ 1324 nm

The properties of SM optical fiber (ITUT.G.652.D)

Zero dispersion slope	$\leq 0.092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	$\leq 0.2 \text{ ps}/(\sqrt{\text{km}})$
Mechanical Specifications	
Fiber Tensile Strength	$\geq 400 \text{ MPa}$
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	ITEM	Specification
1	Operating Temperature	-10 to 70 °C
2	Minimum Bending Radius	Static: 10xOD without load Dynamic: 20xOD with load
3	Tensile Strength	1000-1500 N
4	Crush Resistance	1000 N

Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Fumigated Wooden Drum suitable for long distance shipment
 - Covered by plastic buffer sheet
 - Sealed by strong wooden battens
 - At least 1 m of inside end of cable will be reserved for testing
 - Nominal drum length is **1000,2000m±5%**



- **Cable Identification Documents**
 - Test reports to be placed with each drum

 - **Drum Marking**
 - **Cable drum flanges will bear**
 - Manufacturer's Name
 - Arrow showing the direction of drum roll
 - Cable inner end position indicating arrow
 - **CAUTION-OPTICAL FIBER CABLE-NOT TO BE LAID FLAT**
 - Caution plate indicating the correct method for loading, unloading and convey the cable
 - Additional information: (if needed)

 - **Marking Plates**
 - Customer Name
 - Cable Type and Length
 - Number of Fibers
 - Drum Number
 - Manufacturer's Name
 - Year of manufacturer
 - Contract Number
 - Gross/Net weight in kilograms
-

Bow Type Drop Cable (BDC-MW-IO)

02 Fiber Self Supporting



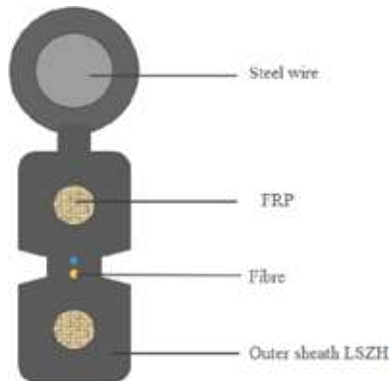
Cable Description

The Self-Supporting Bow Type Drop Cable has been meticulously (thoroughly examined) crafted with a compact meter length to facilitate with easy splicing, installation, and maintenance. With its distinctive butterfly-shaped and flat configuration, it significantly simplifies the drop cable structure while maintaining a lightweight profile.

Application and Key features		
1	Usage Scenarios	Perfectly suited for FTTH applications
2	Cable Design	Safeguarded by dual parallel strength elements crafted from FRP (non-metallic) and steel wire (metallic), this design ensures effective protection and offers robust resistance against crushing forces
3	No of Fibers	Supports fiber count up to 02
4	Fiber Types	Compatible with G.657.A1 and G.657.A2 fibers
5	Characteristics	Excellent mechanical and environmental performance

Cable cross-section

02 F BDC-MW-IO





Cable Parameter

Parameter		Detail
Fiber	No of Fiber	2
	Color	Blue, Orange
	Type	G.657.A1/A2
Steel wire	Material	Steel
Sheath	Material	LSZH
	Color	Black
Cable Size (HxW) (mm)		(2.0±0.2) × (5.0±0.2)
Cable weight (kg/km)		18
Minimum bending diameter(mm)	Static(Rip off steel wire)	7.5
	Dynamic	30

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G657.A1/A2 specifications
2.	Strength Member	Strength Member (STEEL WIRE)
3.	Sheathing	Fire Retardant Black LSZH (Low Smoke Zero Halogen) is used
4.	Messenger Wire	Steel Wire: 1 mm

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2
G.657.A1/A2	Blue	Orange

Sheath Marking

LTE -YEAR-CUSTOMER NAME- SELF SUPPORTING BOW TYPE DROP CABLE-02F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per customer requirements
Cable Code	Self-Supporting Bow Type drop cable
02F-OFC	02 Fibers SM-Optical Fiber Cable
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Laser / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	

The properties of SM optical fiber (ITU-T.G.657.A1/A2)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G657 A1/A2
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	8.8±0.4 μm 9.8±0.5 μm
Cladding Diameter	125±0.7 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤0.7%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.36 dB/km ≤0.25 dB/km
Cable cut-off wavelength	Less than or equal to 1260 nm



Chromatic Dispersion	
Chromatic Dispersion	$\leq 18 \text{ ps}/(\text{nm.km})$ @1288-1339 nm $\leq 23 \text{ ps}/(\text{nm.km})$ @1550 nm
Zero dispersion Wavelength	$1300 \text{ nm} \leq \lambda_0 \leq 1324 \text{ nm}$
Zero dispersion slope	$\leq 0.092 \text{ ps}/(\text{nm}^2.\text{km})$
Polarization Mode Dispersion (PMD)	
PMD Coefficient	$\leq 0.1 \text{ ps}/(\sqrt{\text{km}})$
Bending loss performance of OFC	
Bending loss performance of OFC@1550nm	$\leq 0.25\text{DB}$ (10 turns around a mandrel of 30 mm diameter)

Mechanical Requirements

No	ITEM	Specification
1	Operating Temperature	-10 to 70 °C
2	Minimum Bending Radius	Static: 7.5xOD rip off steel wire Dynamic: 30xOD with load
3	Tensile Strength	800 N
4	Crush Resistance	500 N

Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Plywood Drum suitable for long distance shipment
 - Standard reel length 1000,2000m±5%

Bow Type Drop Cable (BDC-I)



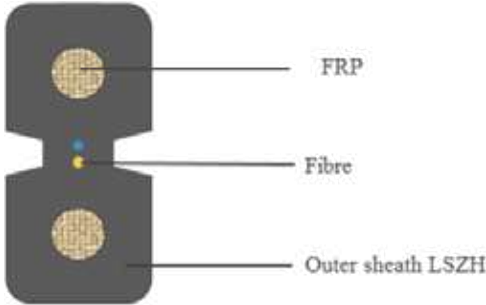
Cable Description

The Bow Type Drop Cable has been meticulously designed to facilitate with easy splicing, installation, and maintenance for FTTH networks. With its distinctive butterfly-shaped and flat configuration, it significantly simplifies the drop cable structure while maintaining a lightweight profile.

Application and Key features		
1	Usage Scenarios	Perfectly suited for FTTH networks for indoor installation
2	Installation Method	This cable can be installed for FTTH networks
3	Cable Design	Safeguarded by dual parallel strength elements crafted from FRP (non-metallic)
4	No of Fibers	Supports fiber count up to 02
5	Fiber Types	Compatible with G.657.A1 and G.657.A2 fibers
6	Characteristics	Excellent mechanical and environmental performance

Cable cross-section

02 F BDC-I





Cable Parameter

Parameter		Detail
Fiber	No of Fiber	2
	Color	Blue, Orange
	Type	G.657.A1/A2
Steel wire	Material	Steel
Sheath	Material	LSZH
	Color	Black
Cable Size (HxW) (mm)		(2.0±0.2) × (5.0±0.2)
Cable weight (kg/km)		18
Minimum bending diameter(mm)	Static	7.5
	Dynamic	30

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G657.A1/A2 specifications
3.	Sheathing	Fire Retardant Black LSZH (Low Smoke Zero Halogen) is used

Fiber Identification

Fiber Identification is made as per TIA/EIA 598-A

No	1	2
G.657.A1/A2	Blue	Orange

Sheath Marking

LTE -YEAR-CUSTOMER NAME- BOW TYPE DROP CABLE-02F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per customer requirements
Cable Code	Bow Type drop cable
02F-OFC	02 Fibers SM-Optical Fiber Cable
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Laser / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	

The properties of SM optical fiber (ITU-T.G.657.A1/A2)

Item	Specification
Fiber Type	SM
Fiber Make	ITU-T G657 A1/A2
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	8.8±0.4 μm 9.8±0.5 μm
Cladding Diameter	125±0.7 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤0.7%
Core-Clad Concentricity error	≤0.5m μm
Coating-Cladding Concentricity	≤12 μm
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.36 dB/km ≤0.25 dB/km
Cable cut-off wavelength	Less than or equal to 1260 nm



Chromatic Dispersion	
Chromatic Dispersion	$\leq 18 \text{ ps}/(\text{nm.km})$ @1288-1339 nm $\leq 23 \text{ ps}/(\text{nm.km})$ @1550 nm
Zero dispersion Wavelength	$1300 \text{ nm} \leq \lambda_0 \leq 1324 \text{ nm}$
Zero dispersion slope	$\leq 0.092 \text{ ps}/(\text{nm}^2.\text{km})$
Polarization Mode Dispersion (PMD)	
PMD Coefficient	$\leq 0.1 \text{ ps}/(\sqrt{\text{km}})$
Bending loss performance of OFC	
Bending loss performance of OFC@1550nm	$\leq 0.25\text{DB}$ (10 turns around a mandrel of 30 mm diameter)

Mechanical Requirements

No	ITEM	Specification
1	Operating Temperature	-10 to 70 °C
2	Minimum Bending Radius	Static: 7.5xOD Dynamic: 30xOD with load
3	Tensile Strength	800 N
4	Crush Resistance	500 N

Packaging and Marking

- **Packaging**
 - Each single length of cable shall be reeled on Plywood Drum suitable for long distance shipment
 - Standard reel length 1000,2000m±5%

Drop Cable (ODC-IO)

Outdoor/Indoor 02-12 Fiber



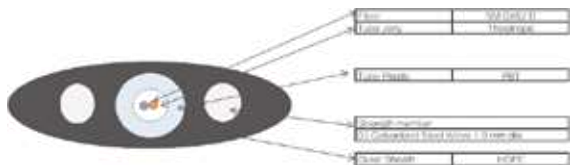
Cable Description

Oval Drop Cable design has an exclusively dielectric composition, comprised of Black MDPE with integrated Fiber Reinforced Plastic (FRP) / steel wire within the sheath wall. This innovative design renders the cable self-supporting, lending its adaptability for installation aerial and FTTH applicable.

Application and Key features		
1	Usage Scenarios	Fiber drop cables find common use in linking the fiber terminal to residential or commercial structures, catering to outdoor scenarios.
2	Installation Method	This cable can be installed either in-duct or through direct burial
3	Cable Design	Safeguarded by dual parallel strength elements galvanized steel wire (metallic),
4	No of Fibers	Supports a fiber count of up to 02-12
5	Fiber Types	Compatible with G.652 D
6	Characteristics	These cables are meticulously designed to endure even the harshest environmental elements, such as sunlight, high temperatures, freezing cold, moisture.

Cable cross-section

02 FIBER ODC-IO





Cable Parameter

Sr. No	Parameter	Detail
1.	Fiber Type	G652.D
2.	No. of Fiber	02-12
3.	Loose Tube material	PBT
4.	Strength Member	2 X Galvanized steel FRP wires:1.0m
5.	Cable Dimensions	6.0x3.5 mm ± 0.5

Cable Item Description

S No.	Item	Description
1.	Fiber	The cable is based on Single Mode(SM) Fiber as per ITUT G652.D specifications
2.	Strength Member	02 Galvanized Steel wires: 01mm dia/FRP
3.	Outer Sheath	Cable grade Black HDPE (High Density Polyethylene) is used as outer sheath
4.	Loose Tube	<ol style="list-style-type: none"> Loose tube is made up of Polybutylene Terephthalate (PBT), Loose tube will allow free movement of fibers with in the tube and protect them from axial or radial stresses No. of Fibers in the tube:02 Loose tube is filled with Thixotropic Jelly, the filling compound prevents the ingress of water in to the tube Precise Excess Fiber length (EFL) is provided during the manufacturing

Fiber Identification

Fiber Identification is made per TIA/EIA 598-A

No	1	2	3	4	5	6	7	8	9	10	11	12
G.652.D	Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Violet	Pink	Aqua

Loose Tube			Tube Colors
Outer dia. 02-12 F	Inner dia. 02-12 F	Wall Thickness	1
2.4±0.1 mm	1.6±0.1 mm	0.4 mm	Blue

Sheath Marking

LTE -YEAR-CUSTOMER NAME- OUTDOOR DROP CABLE-02 F-OFC-XXXX-DRUM NO:XXXX	
LTE	Name of Manufacturer
Year	Manufacturing Year
Customer Name	As per customer requirements
Cable Code	Outdoor Drop Cable
02F-OFC	02 Fibers SM-Optical Fiber Cable
XXXX	Length Marking
Drum No:XXXX	Cable Drum Number
<ul style="list-style-type: none"> The marking is printed every 1 meter Marking Technique (Engraved Hot foil printing / Inkjet Printing) The color of marking is white The both cable ends are sealed with heat shrinkable end caps 	

The properties of SM optical fiber (ITU.T.G.652.D)

Item	Specification
Fiber Type	SM
Fiber Make	ITU.T G652 D
Dimensions	
Mode Field Diameter @1310 nm @1550 nm	9.2±0.4 μm 10.4±0.8 μm
Cladding Diameter	125±1 μm
Primary Coating Diameter	250±10 μm
Cladding Non-Circularity	≤1%
Core-Clad Concentricity error	≤0.5 μm
Coating-Cladding Concentricity	≤12 μm
Fiber Curl	≥4m radius of curvature
Cable Optical Specifications	
Average Attenuation of Cable @1310 nm @ 1550 nm	≤0.34 dB/km ≤0.22 dB/km



Attenuation vs Wavelength 1285-1330 nm reference 1525-1575 nm reference	0.03 dB/km 0.02 dB/km
Attenuation Uniformity	No localized discontinuity in excess of 0.1 dB at any of the designed length
Fiber cut-off wavelength	1150 nm to 1310 nm
Cable cut-off wavelength	Less than or equal to 1260 nm
Chromatic Dispersion	
Chromatic Dispersion	$\leq 3.5 \text{ ps}/(\text{nm.km})$ @1285-1330 nm $\leq 18 \text{ ps}/(\text{nm.km})$ @1550 nm
Zero dispersion Wavelength	$1310 \text{ nm} \leq \lambda_0 \leq 1324 \text{ nm}$
Zero dispersion slope	$\leq 0.092 \text{ ps}/(\text{nm}^2.\text{km})$
Polarization Mode Dispersion (PMD)	
Maximum Individual fiber PMD Coefficient	$\leq 0.2 \text{ ps}/(\sqrt{\text{km}})$
Mechanical Specifications	
Fiber Tensile Strength	$\geq 400 \text{ MPa}$
Performance Characteristics	
Effective group index of refraction	1.4670 (1310 nm) 1.4677 (1550 nm)

Mechanical Requirements

No	Item	Specification
1	Operating Temperature	-10 to 70 °C
2	Tensile Strength	800-1000 N
3	Crush Resistance	500 N

Packaging and Marking

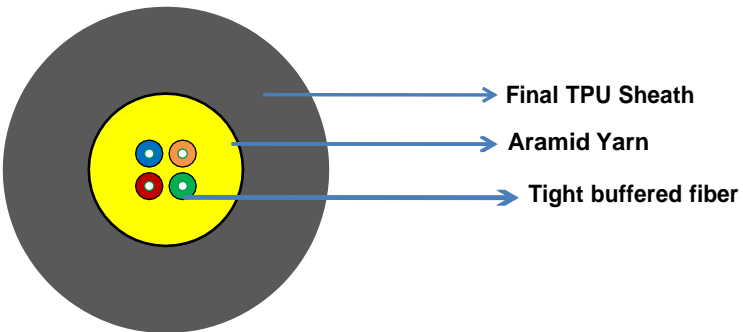
- **Packaging**
 - Each single length of cable shall be reeled on Drum suitable for long distance shipment (2000 meters \pm 5%)
 - Standard reel length 1000,2000m \pm 5%

Rapid Deployment Optical Fiber Cable

Rapid deployment cable is particularly designed for the telecom field and harsh environment.

- Flexible
- Flame retardant
- Crush Resistance
- Wide Operating Temperature Range

Parameters	Values
No. of Fibers/Type	04 /SM G657 A2
Cable Diameter (mm)	±0.5
Weight (Kg/Km)	32
Tensile Strength (N)	1500
Crush Resistant (N/10 cm)	2500
Impact (N.m)	2.2
Operating Temperature	-40 to +70 degree Centigrade



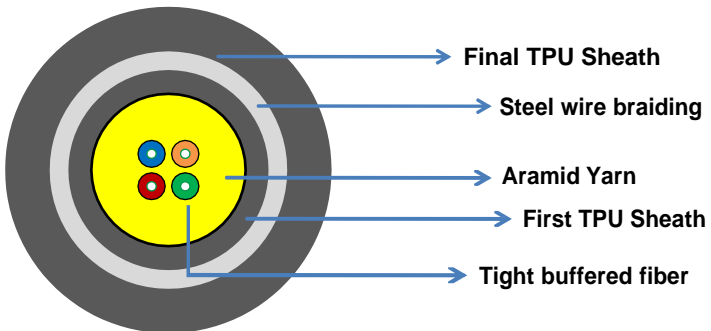


Armored Rapid Deployment Optical Fiber Cable

Armored Rapid deployment Cable is particularly designed for the telecom field and harsh environment.

- Flexible
- Flame retardant
- High Crush Resistance
- Wide Operating Temperature Range

Parameters	Values
No. of Fibers/Type	04/SM G.657 A2
Cable Diameter (mm)	8.0
Weight (Kg/Km)	40
Tensile Strength (N)	1500
Crush Resistant (N/10 cm)	2500
Impact (N.m)	4.5
Operating Temperature	-40 to +70 degree Centigrade



LTE

LT Engineering & Trade Service,
Lub Thattoo, Hasanabdal-43730 Pakistan.

Tel: +92-57-2520520, 2520017 Fax: 92-57-2520133-2520752
Email: info@ltepakistan.com sales@ltepakistan.com
www.ltepakistan.com