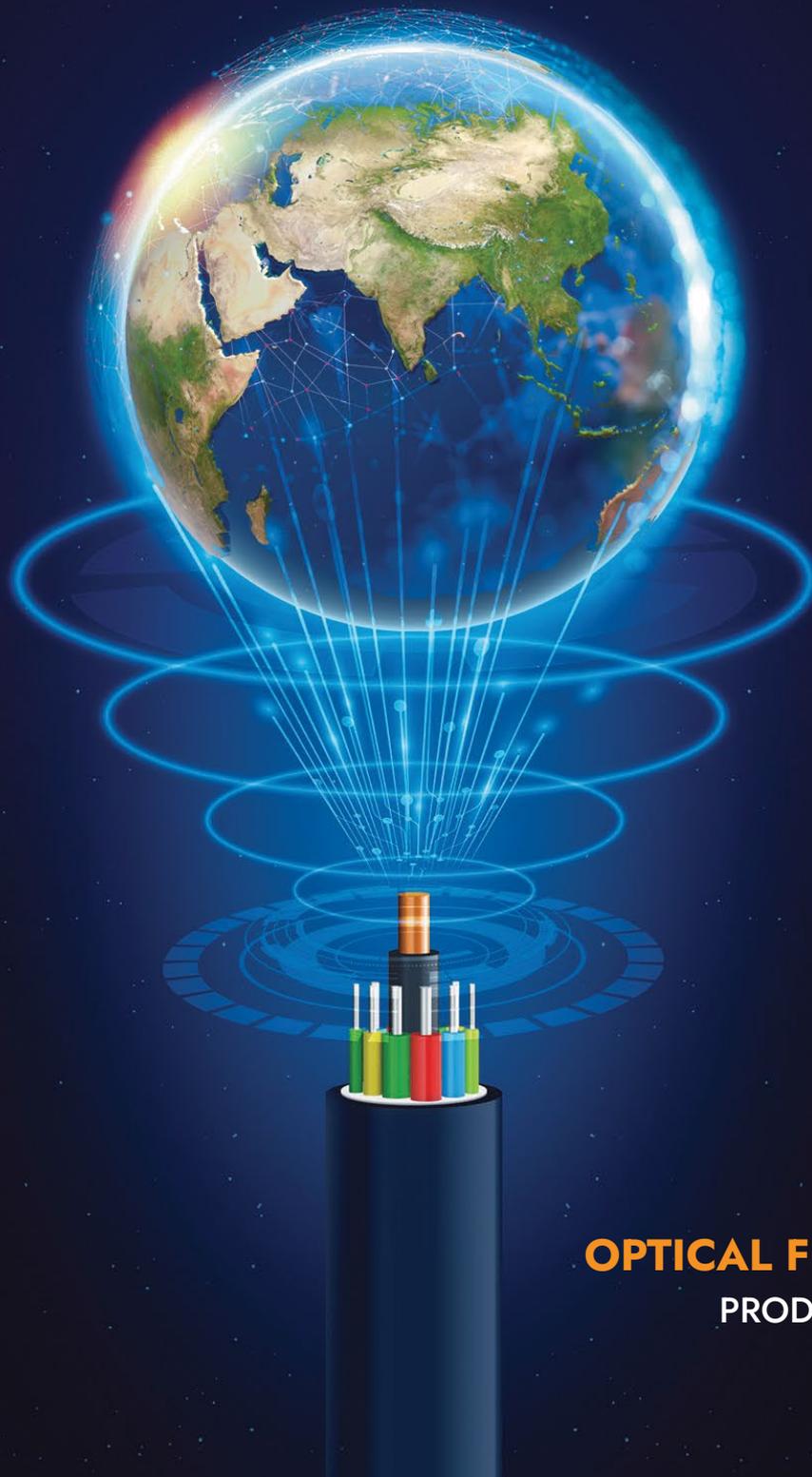


# THE FUTURE OF CONNECTIVITY



**OPTICAL FIBRE CABLES**

PRODUCT CATALOGUE

**DuctoFib**

# APAR EMPOWERING A SMARTER WORLD SINCE 1958



Presence in

**140+**

Countries

**9**

Manufacturing Units



**#1**

Largest global aluminium & alloy conductor manufacturer



**#3**

Largest global manufacturer of Transformer oils



**#1**

Largest manufacturer of Renewable & Speciality Cables in India



Manufacturer of OFC & Hybrid Cables

**65**

**YEARS**

of Manufacturing Experience

**\$ 1.8**

**BILLION**

FY23 Consolidated Revenue

**19.3%**

**CAGR**

Last 5 years

**49%** EXPORT REVENUES

# TELECOM SOLUTIONS OVERVIEW

APAR is a leading Global Telecom Solutions company focusing on innovative solutions for global markets. The uniqueness lies in its design and manufacturing capabilities supported by backward integration. The wide range of tele-communication Optical Fibre Cable and Hybrid Cable products have been carved out from its rich experience across Telecom, Defense, Power and Transport industries over the years. APAR Telecom services has capability and potential to create digital networks, passive infrastructure gateways and network densification for Urban (Mobility Networks and FTTx, broadband Networks), Rural (Middle Mile and Last mile connectivity), Defense MHA (Border & Cantonment Fortification) and Enterprise Connectivity (across multiple Industries).

APAR's Telecom Solutions is driven by Innovation, customer-centricity and sustainability.

# WORLD CLASS PRODUCTION FACILITIES

APAR offers an extensive range of fibre optic cables for outdoor, indoor and speciality applications, ranging from 1F to 864F, and up to 1152F in ribbon design, with an installed capacity of 200,000 km of cable per annum.

We are also capable of manufacturing and delivering customised cables for special applications, such as specific diameter micro cables for FTTX, drop cables with G 657 bend insensitive fibre for last-mile connectivity, and long span ADSS (All Dielectric Self-supporting) aerial cables designed to be strung alongside power lines.

Our state-of-the-art machinery enables us to manufacture all types of fibre optic cables along with highly equipped quality system, accredited with ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 27001:2013 & TL9000 from BSI and IRCLASS. Over the past 25 years, we have supplied wide range of Fibre Optic Cables across various sectors.



World Class Fibre Optic Cable Manufacturing Facilities.



# APAR TELECOM SOLUTIONS

## OFC - OPTICAL FIBRE CABLES

APAR Telecom tailors high-capacity cable solutions for data centers, ISPs, telcos, and worldwide internet companies. APAR Fibre optic cables surpass copper lines in both capacity and transmission distance, enhancing internet speed upto 100 Gbps. APAR offers a comprehensive range of fibre optic cables for different communication needs, including aerial, underground, microduct, ribbon, IO, and indoor cables meeting international standards in a contemporary manufacturing facility certified with ISO, OHSAS, and TL9000. APAR's commitment to quality ensures that cables are manufactured to global standards and customer specifications.

**APAR Telecom, a Global Telecom Solutions Leader, offers innovative connectivity solutions for:**

**Urbanisation:** Mobility Networks across 4G/5G/6G and FTTx broadband Networks.

**Rural Connectivity:** Bridging the digital gap of fibre across rural regions.

**Border Fortefication:** Defence & MHA with border communication solutions.

**Enterprise:** Data centers, Railways & Metro's, Airports, Power Utilities, Renewable Solar & Wind Solutions, Oil & Gas, Mining, Space and many more.

## HYBRID CABLES - GIGAVOLT

The Giga-Volt hybrid solution incorporates both fibre and copper conductors in one cable that deliver power and data to a remote device through copper and fibre medium. As the connectivity needs converges, APAR hybrid cables will assist builders to meet their demand with this unique cable designs across multiple use cases across 5G, Wi-fi, DAS, IOT & M2M

**Reduced Environmental Impact:** Giga-Volt combines power and data transmission into a single cable, eliminating the need for separate cables and reducing overall material usage.

**Cost-Effective Installation:** By deploying a single Giga-Volt cable instead of separate power and data cables, service providers save time, space, and capital during installation.

**Faster Network Rollout:** Giga-Volt acts as a unified solution, streamlining network infrastructure and facilitating faster deployment of advanced networks like 5G.

**Simplified Cable Management:** Using a single Giga-Volt cable reduces complexity by eliminating the need to manage multiple cables at the field level.

**Lower Total Cost of Ownership (TCO):** Giga-Volt offers a slim design and supports all network topologies, potentially leading to a lower overall cost of ownership for the network.

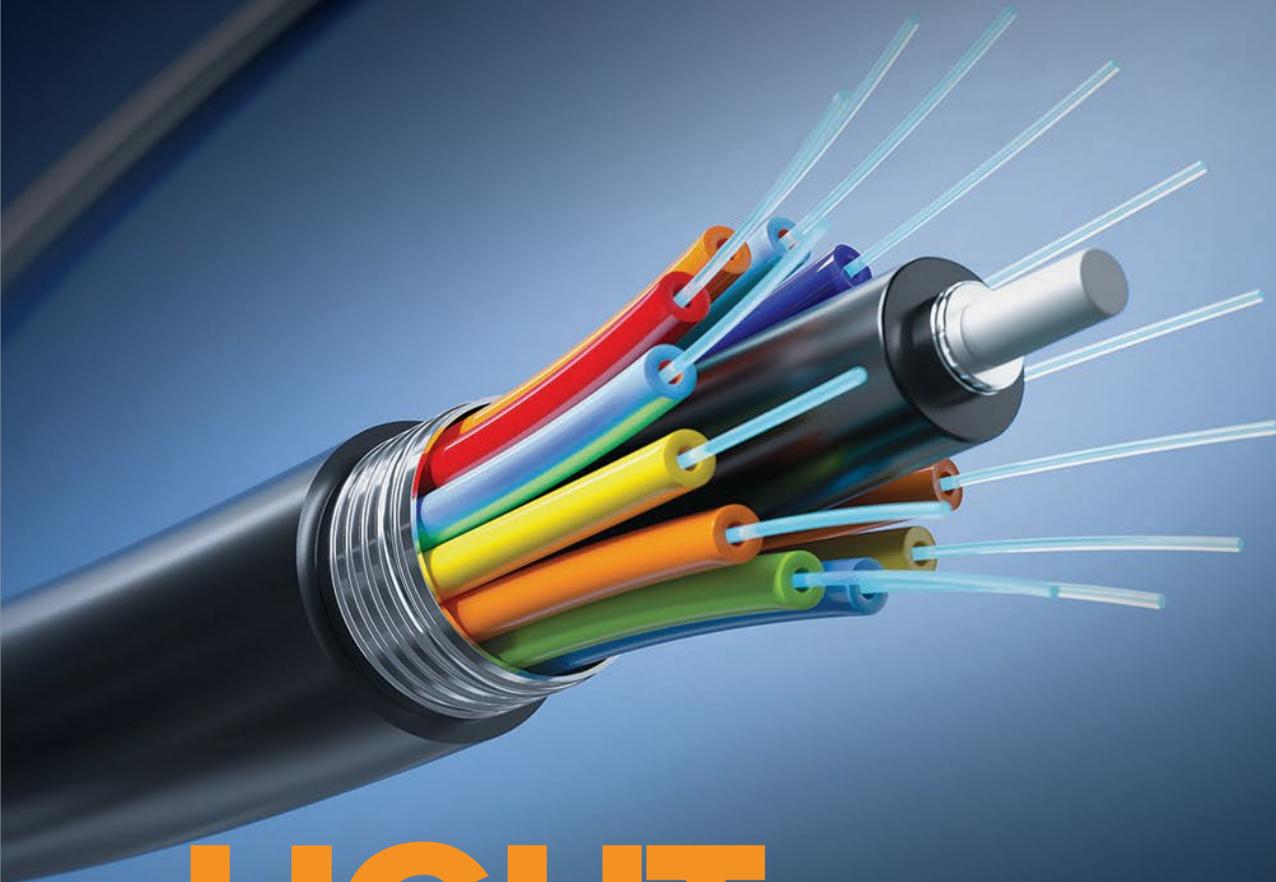
## LAN CABLES - TARANG SHAKTI

High-performance connectivity meets personalized solutions at APAR While known for superior materials and global standards (ANSI/TIA, ISO/IEC, EN, UL/ETL/TUV), APAR goes beyond LAN cables. We distinguish ourselves by:

**Customised Solutions:** Avoid off-the-shelf. Our skilled team creates LAN cable and optical fibre solutions for your specific needs, maximizing efficiency and exceeding expectations.

**Engine of Innovation:** We invest extensively in R&D, pushing technology forward. Access innovative solutions to meet rising bandwidth, speed, and reliability needs. We set industry standards, not merely meet them.

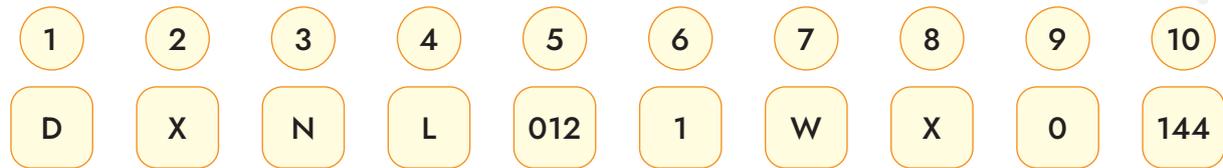
**Devoted Partnerships:** We value long-term connections over transactions. Our attentive crew ensures a smooth and worry-free experience from initial consultations to post-installation support.



# LIGHT WEIGHT AND COMPACT

Optical fibre cables offer a hassle-free alternative to traditional copper cables. Their sleek and slim design, combined with their lightweight and compact construction, make them a breeze to install and manage.

# CATALOGUE CABLE CODING SYSTEM



**1 | Installation**

- A = Aerial Self Support
- B = Direct Buried
- D = Duct
- M = Figure8
- P = Drop/Rise

**2 | Fire Rating**

- R = Flame Retardant
- S = Fire Survival
- X = No Fire Rating

**3 | Construction**

- M = Metallic
- N = Non-metallic

**4 | Buffer Type**

- L = Loose Tube
- R = Ribbon Tube
- T = Tight Buffer
- M = Micro Module

**5 | Fibre/Tube Or Buffer**

001 to 144

**6 | Number Of Jackets**

- 0 = No Jacket
- 1 = Single Jacket
- 2 = Double Jacket
- 3 = Triple Jacket

**7 | Water Protect Type**

- W = Wet Tube - Wet Core
- R = Wet Tube - Dry Core
- Y = Dry Tube - Dry Core

**8 | Type Of Armour**

- C = Glass Yarn
- F = Steel Tape
- W = Steel Wire
- P = FRP
- A = Aluminum Tape
- X = No Armour
- B = Wire Braided
- U = ACSR Wire
- M = Copper Wire

**9 | Fibre Type**

- 0 = G652D
- 1 = G654
- 2 = G655
- 3 = G656
- 4 = G657A1
- 5 = G657A2
- 6 = G657B1
- 7 = G657B2
- 9 = G657B3
- 10 = OM1
- 11 = OM2
- 12 = OM3
- 13 = OM4

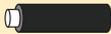
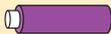
**10 | Fibre Count**

0001 to 1152

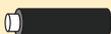
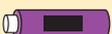
**Example:  
Standard 44F Duct cable**

Code = DXNL0121YX0144

## OPTICAL FIBRE COLOUR CODING

FIBRE OPTIC COLOUR CODING AS PER EIA/TIA 598 INTERNATIONAL STANDARD					
1	Blue		13	Blue with Black Ring	
2	Orange		14	Orange- with Black Ring	
3	Green		15	Green- with Black Ring	
4	Brown		16	Brown- with Black Ring	
5	Grey		17	Grey- with Black Ring	
6	White		18	White- with Black Ring	
7	Red		19	Red- with Black Ring	
8	Black		20	Natural with Black Ring	
9	Yellow		21	Yellow- with Black Ring	
10	Violet		22	Violet- with Black Ring	
11	Pink		23	Pink- with Black Ring	
12	Aqua		24	Aqua- with Black Ring	

\* "-" Marked are ring marked fibre.

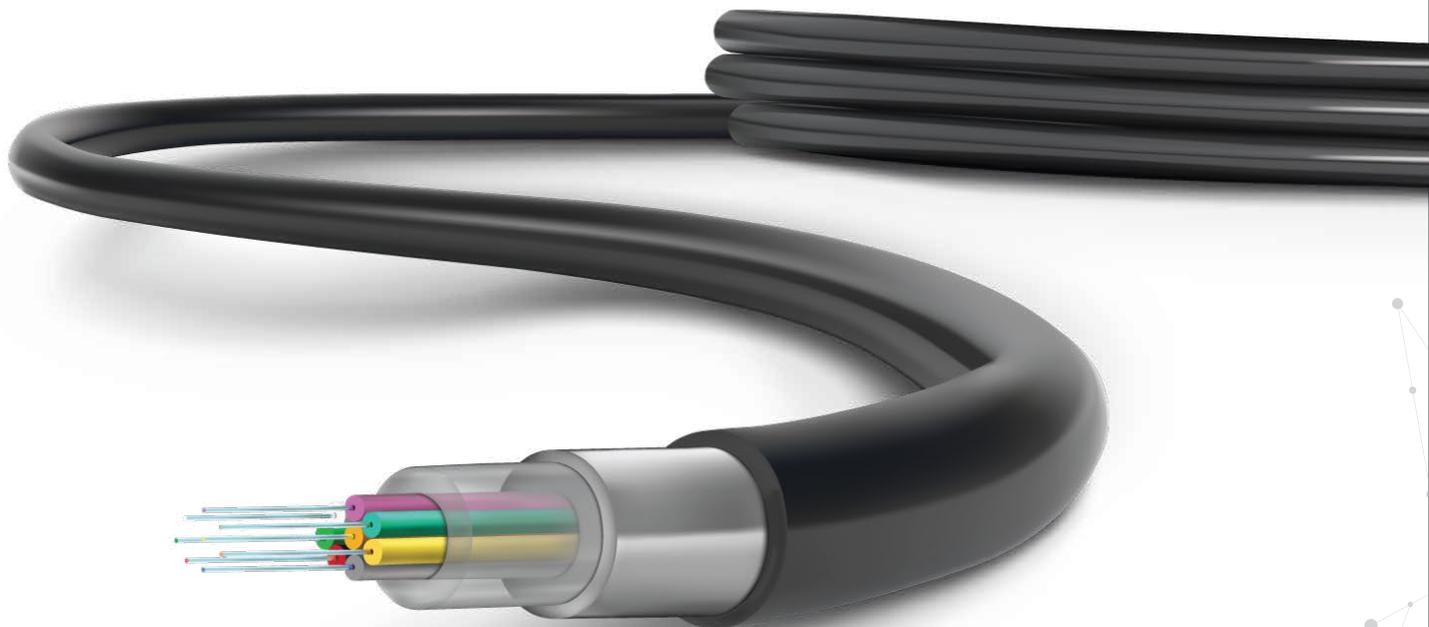
FIBRE OPTIC BUFFER COLOUR CODING AS PER EIA/TIA 598 INTERNATIONAL STANDARD					
1	Blue		13	Blue with Black Strip	
2	Orange		14	Orange- with Black Strip	
3	Green		15	Green- with Black Strip	
4	Brown		16	Brown- with Black Strip	
5	Grey		17	Grey- with Black Strip	
6	White		18	White- with Black Strip	
7	Red		19	Red- with Black Strip	
8	Black		20	Black with Yellow Strip	
9	Yellow		21	Yellow- with Black Strip	
10	Violet		22	Violet- with Black Strip	
11	Pink		23	Pink- with Black Strip	
12	Aqua		24	Aqua- with Black Strip	

## FIBRE OPTIC CABLE PRODUCT VARIETY

### **DuctoFib**

**Product: Duct Fibre Optic Cables** : Application: In new or existing Ducts

SR. NO.	PRODUCT DESCRIPTION	FIBRE RANGE	CABLE CODE
01	Uni Tube Single Jacket Dielectric Duct Cable	1F-48F	DXNL###1#XO###
02	Uni Tube Double Jacket Dielectric Duct Cable	1F-48F	DXNL###2#XO###
03	Uni Tube Ribbon Fibre Single Jacket Dielectric Duct Cable	48F-144F	DXNR###1#XO###
04	Loose Tube Single Jacket Dielectric Duct Cable	1F-864F	DXNL###1#XO###
05	Loose Tube Double Jacket Dielectric Duct Cable	1F-864F	DXNL###2#XO###
06	Loose Tube Ribbon Fibre Single Jacket Dielectric Duct Cable	48F-1152F	DXNR###1#XO###
07	Loose Tube Ribbon Fibre Double Jacket Dielectric Duct Cable	48F-1152F	DXNR###2#XO###



# UNI TUBE SINGLE JACKET DIELECTRIC DUCT CABLE

**DXNL###1#X0###**

**1F-48F**



## PRODUCT INFORMATION

Apar's single jacket dielectric duct cable is suitable in duct application. The cable design is unitube and has optical fibres in jelly filled tube. This central tube is peripherally covered by glass yarns. Cable core is then covered by strong thermoplastic material which is extruded for a smooth finish with 2 embedded FRP rods into the jacket. This robust product is available in fibre counts ranging from 1-48F.

## PRODUCT APPLICATION

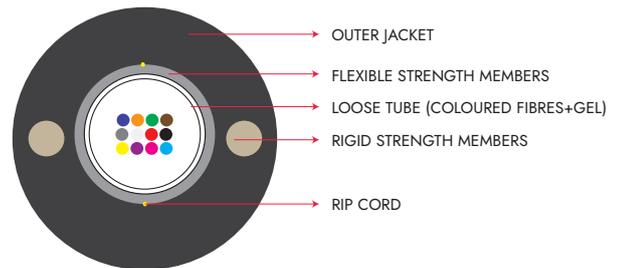
These cables can be installed in ducts with either pulling or blowing techniques and in aerial applications with traditional lashing methods.

## PRODUCT FEATURES

- ◆ Small size. Light weight, flexible and easy to install inside the ducts.
- ◆ Tensile and crush resistance, UV protection.
- ◆ Available in wide range from 1F-48F, in both single-mode and multi-mode fibre variants.
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

## COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20, EN187000, EN 50575, UL 1651



Duct Laying



Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE/TUBE	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
2F	2	7.2	60	500
4F	4	7.2	60	500
6F	6	7.2	60	500
12F	12	7.2	60	500
24F	24	7.5	65	500
48F	48	11.0	136	500

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	1000N
Impact strength (N.m)	IEC-60794-1-21-E4	5
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation -20°C to +70°C    Operation -20°C to +70°C    Storage -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hr
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hrs no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC ~Laser Symbol~ Telephone Symbol~ Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# UNI-TUBE DOUBLE JACKET DIELECTRIC DUCT CABLE

**DXNL###2#X0###  
(1F-48F)**

## DuctoFib

### PRODUCT INFORMATION

Apar's double jacket dielectric duct cable is suitable for duct applications. The cable features a unitube design and comprises optical fibres in a jelly-filled central tube. The inner sheath is reinforced with peripheral strength members called glass yarns. This core is further covered by a strong thermoplastic jacketing material which is extruded for a smooth finish with 2 embedded FRP rods into the jacket. This robust product is available in fibre counts ranging from 1-48F.

### PRODUCT APPLICATION

These cables can be installed in ducts with either pulling or blowing techniques and in aerial applications with traditional lashing methods.

### PRODUCT FEATURES

- ◆ Small size. Light weight, flexible and easy to install inside the ducts.
- ◆ Tensile and crush resistance, UV protection.
- ◆ Available in wide range from 1F-48F, in both single-mode and multi-mode fibre variants.
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

### COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20



Duct Laying



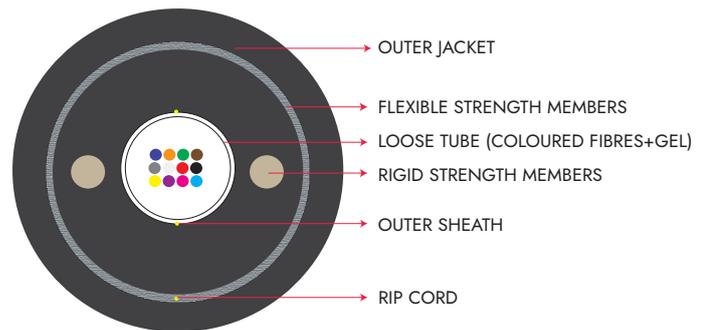
Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE/TUBE	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
2F	2	9.5	70	1200
4F	4	9.5	70	1200
6F	6	9.5	70	1200
12F	12	9.5	70	1200
24F	24	10.0	80	1200
48F	48	11.5	100	1200

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	2000N
Impact strength (N.m)	IEC-60794-1-21-E4	10
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation: -20°C to +70°C Operation: -20°C to +70°C Storage: -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hours
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hours no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC ~Laser  
Symbol~ Telephone Symbol~ Year of

Manufacturing~ Cable ID~ Meter Marking

- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# UNI-TUBE RIBBON FIBRE SINGLE JACKET DIELECTRIC DUCT CABLE

DXNR###1#X0###

48F-144F

## DuctoFib

### PRODUCT INFORMATION

Apar's single jacket ribbon cable is suitable for duct applications. The cable features a uniube design and consists of optical fibre ribbons in a jelly-filled loose tube. The loose tube is peripherally covered by glass fibre reinforcement. This core is further covered by a strong thermoplastic jacketing material which is extruded for a smooth finish with two FRP rods embedded into the jacket to provide extra tensile strength.

### PRODUCT APPLICATION

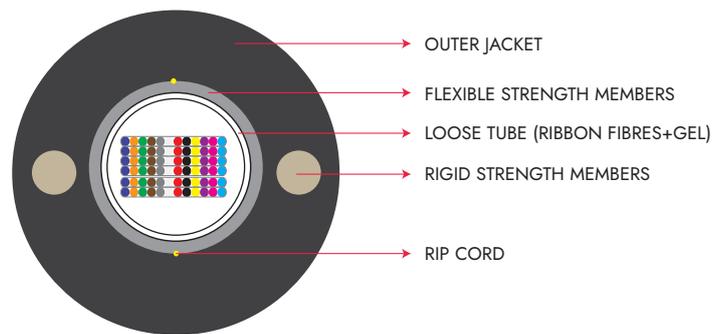
- ◆ Long haul communication system.
- ◆ Junction communication system.
- ◆ High-density communication.
- ◆ Premise network application.

### PRODUCT FEATURES

- ◆ Available in wide range of 4F-144F, in both single-mode and multi-mode fibre variants.
- ◆ High Tensile and crush resistance, UV protection.
- ◆ Small size, lightweight, flexible and easy to install.
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

### COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20



Duct Laying



Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE / RIBBON	NO. OF RIBBONS	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
48F	12	4	11.6	130 ±20%	2000
72F	12	6	12.4	145 ±20%	2000
96F	12	8	12.8	150 ±20%	2000
144F	12	12	14.0	175 ±25%	2000

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	1000N
Impact strength (N.m)	IEC-60794-1-21-E4	10
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation -20°C to +70°C    Operation -20°C to +70°C    Storage -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hours
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hours no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC ~Laser Symbol~ Telephone Symbol~ Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# LOOSE TUBE SINGLE JACKET DIELECTRIC DUCT CABLE

**DXNL###1#X0###  
1F-864F**

## **DuctoFib**

### PRODUCT INFORMATION

Apar's Single jacket dielectric duct cable is suitable for duct application. The cable consists of optical fibres in jelly filled loose tubes, which are stranded over FRP (fibre reinforced plastic rod). The FRP rod is excellent central strength member. The stranded core is filled with water blocking compound surrounded with suitable tape to avoid water penetration. This core is covered by strong thermoplastic material, this gives the cable a strong and smooth finish. This robust product is available in fibre counts ranging from 1-864F.

### PRODUCT APPLICATION

- ◆ Long haul communication system.
- ◆ Junction communication system.
- ◆ Inter-office connections for video/data transmission.
- ◆ LAN/WAN/SCADA/telemetry systems.

### PRODUCT FEATURES

- ◆ Available in wide range of 1F-864F, in both single-mode and multi-mode fibre variants.
- ◆ Excellent design gives rapid midspan excess.
- ◆ High tensile and crush resistance, UV protection.
- ◆ Lightweight, flexible and easy to install.
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

### COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20, EN187000



Duct Laying



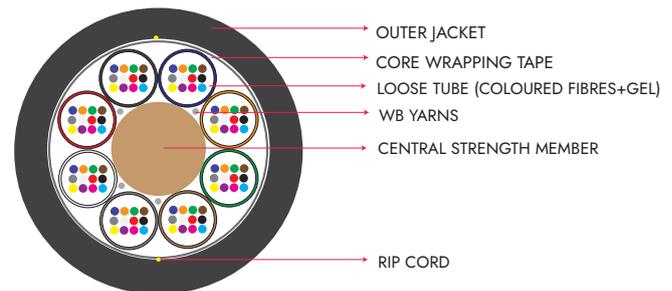
Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE / TUBE	NUMBER OF TUBE'S	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
6F-72F	6F~12F	1~6	9.0	60 ± 10%	1500
96F	12	8	10.5	85 ± 15%	1500
144F	12	12	13.5	125 ± 15%	2000
288F	12	24	17.5	175 ± 20%	2000
576F	24	24	23.5	315 ± 25%	2000
864F	24	36	23.0	410 ± 25%	2200

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	2000N
Impact strength (N.m)	IEC-60794-1-21-E4	10
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation: -20°C to +70°C Operation: -20°C to +70°C Storage: -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hr
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hrs no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC~ Laser Symbol~ Telephone Symbol~ Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# LOOSE TUBE DOUBLE JACKET DIELECTRIC DUCT CABLE

## DXNL###1#X0### 1F-864F

## DuctoFib

### PRODUCT INFORMATION

Apar's Double jacket dielectric duct cable is suitable for duct application. The cable consists of optical fibres in jelly filled loose tubes, which are stranded over FRP (fibre reinforced plastic rod) an excellent central strength member. The stranded core is filled with water blocking compound surrounded with suitable tape to avoid water penetration. This core is covered by strong thermoplastic material as inner sheath. A layer of peripheral strength member is applied over inner sheath which is again jacketed by strong thermoplastic material to give a strong and smooth finish. This robust product is available in 1-864F.

### PRODUCT APPLICATION

- ◆ Long haul communication system.
- ◆ Junction communication system.
- ◆ Inter-office connections for video/data transmission.
- ◆ LAN/WAN/SCADA/telemetry systems.

### PRODUCT FEATURES

- ◆ Available in wide range of 1F-864F, in both single-mode and multi-mode fibre variants.
- ◆ Excellent design gives rapid midspan excess.
- ◆ High tensile and crush resistance, UV protection.
- ◆ Lightweight, flexible and easy to install.
- ◆ Termite and Rodent resistance
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

### COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20



Duct Laying



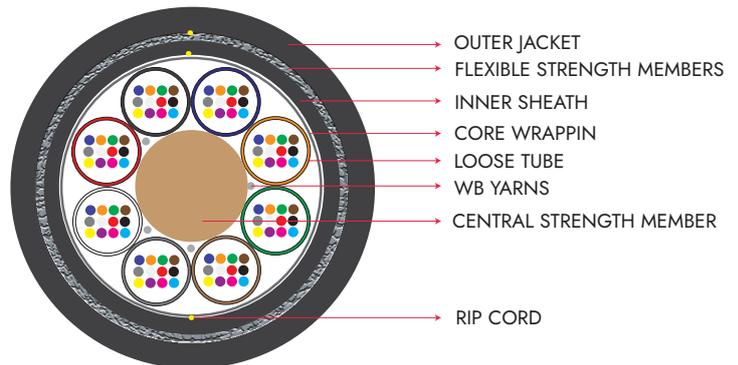
Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE / TUBE	NUMBER OF TUBE'S	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
6F-72F	6F~12F	1~6	12.0	110±10%	2700
96F	12	8	13.5	135±10%	2700
144F	12	12	15.5	190±10%	2700
288F	12	24	18.0	245±20%	3000
576F	24	24	23.5	400±25%	3000
864F	24	32	26.0	490±25%	3000

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	3000N
Impact strength (N.m)	IEC-60794-1-21-E4	25
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation -20°C to +70°C      Operation -20°C to +70°C      Storage -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hr
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hrs no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC~  
Laser Symbol~ Telephone Symbol~  
Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# LOOSE TUBE RIBBON FIBRE SINGLE JACKET DIELECTRIC DUCT CABLE

**DXNR###1#X0###**  
**48F-1152F**



## PRODUCT INFORMATION

APAR's Single Jacket ribbon duct cable is suitable for duct application. The cable consists of optical fibre ribbons in jelly-filled loose tubes, which are stranded over FRP (fibre reinforced plastic rod), an excellent central strength member. The stranded core is filled with water blocking compound surrounded with suitable tape to avoid water penetration. This core is covered by a strong thermoplastic material, which gives the cable a strong and smooth finish. This robust product is available in 48-1152F.

## PRODUCT APPLICATION

- ◆ Long haul communication system.
- ◆ Junction communication system.
- ◆ High Density Communication.
- ◆ LAN/WAN/SCADA/telemetry systems.

## PRODUCT FEATURES

- ◆ Available in wide range of 48F-1152F, in both single-mode and multi-mode fibre variants.
- ◆ Excellent design gives rapid midspan excess.
- ◆ High tensile and crush resistance, UV protection.
- ◆ Lightweight, flexible and easy to install.
- ◆ Termite and Rodent resistance
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

## COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20



Duct Laying



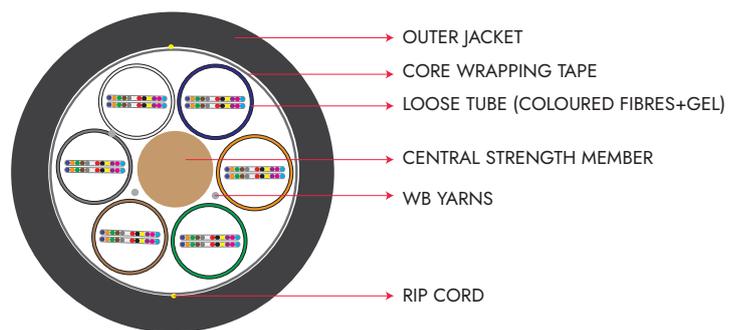
Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE / RIBBON (12F)	RIBBON /TUBE	FIBRES/ TUBE	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
48F	4	2	24	17.5	236 ±20%	2700
72F	6	2	24	17.5	243 ±20%	2700
96F	8	2	24	17.5	251 ±20%	2700
144F	12	2	24	20.0	336 ±25%	2700
288F	24	4	48	21.0	388 ±25%	2700
432F	36	6	72	22.0	455 ±20%	2700
864F	72	12	144	26.0	697 ±25%	3000
1152F	96	12	144	30.0	938 ±25%	3000

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	2000N
Impact strength (N.m)	IEC-60794-1-21-E4	25
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation -20°C to +70°C    Operation -20°C to +70°C    Storage -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hr
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hrs no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC ~Laser Symbol~ Telephone Symbol~ Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.

# LOOSE TUBE RIBBON FIBRE DOUBLE JACKET DIELECTRIC DUCT CABLE

**DXNL###1#X0###  
48F-1152F**

## DuctoFib

### PRODUCT INFORMATION

Apar's Double jacket ribbon dielectric duct cable is suitable for duct application. The cable consists of optical fibre ribbons in jelly filled loose tubes, which are stranded over FRP (fibre reinforced plastic rod). The FRP rod is an excellent central strength member. The stranded core is filled with water blocking compound surrounded with suitable tape to avoid water penetration. This core is covered by strong thermoplastic material as inner sheath. A layer of peripheral strength member is applied over inner sheath which is again jacketed by strong thermoplastic material to give a strong and smooth finish. This robust product is available in 48-1152F.

### PRODUCT APPLICATION

- ◆ Long haul communication system.
- ◆ Junction communication system.
- ◆ High Density Communication.
- ◆ LAN/WAN/SCADA/telemetry systems.

### PRODUCT FEATURES

- ◆ Available in wide range of 48F-1152F, in both single-mode and multi-mode fibre variants.
- ◆ Excellent design gives rapid midspan excess.
- ◆ High tensile and crush resistance, UV protection.
- ◆ Lightweight, flexible and easy to install.
- ◆ Termite and Rodent resistance
- ◆ Available with UL and CPR Ratings
- ◆ Operational Temperature -40°C to +70°C

### COMPLIANCE STANDARDS

IEC 60793, IEC 60794, EIA/TIA, ITU-T, Telcordia GR-20



Duct Laying



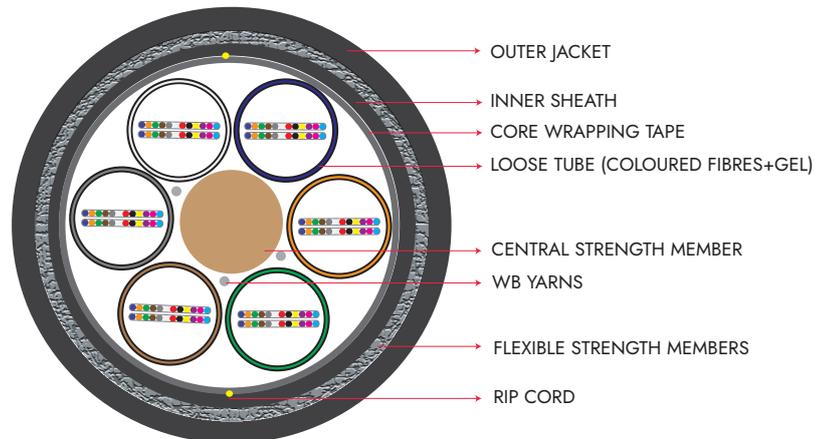
Best Flexibility



Water Resistant



UV Protected



**Note:** Customized specifications can be made available upon specific request.

## PHYSICAL PROPERTIES

FIBRE COUNT	FIBRE / RIBBON (12F)	RIBBON /TUBE	FIBRES/ TUBE	NOMINAL CABLE DIAMETER (MM)	NOMINAL CABLE WEIGHT (KG/KM)	MAXIMUM TENSILE STRENGTH (N)
48F	4	2	24	22	350 ±20%	4000
72F	6	2	24	22	350 ±20%	4000
96F	8	2	24	22	355 ±20%	4000
144F	12	2	24	22	365 ±25%	4000
288F	24	4	48	23	400 ±25%	4000
432F	36	6	72	25.5	500 ±20%	4500
864F	72	12	144	30.5	710 ±25%	5000
1152F	96	12	144	35	945 ±25%	5000

## MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

NAME OF TEST	REFERENCE STANDARD	OFFERED VALUES
Cable Bending Radius	IEC-60794-1-21-E11	Long term = 20D, Short term = 10D
Crush Resistance (N/10 cm)	IEC-60794-1-21-E3	3000N
Impact strength (N.m)	IEC-60794-1-21-E4	25
Torsion	IEC-60794-1-21-E7	± 180°
Temperature Cycling	IEC-60794-1-22-F1	Installation -20°C to +70°C    Operation -20°C to +70°C    Storage -20°C to +70°C
Drip Test	IEC-60794-1-21-E14	30 cm, 70°C, 24 hr
Water Penetration	IEC-60794-1-22-F5B	1m water head, 3m samples, 24 hrs no water leakage

## COLOUR CODING

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more 12 fibres per tube then single or double stripes marking will be offered in compliance to EIA/TIA

### FIBRE STANDARD COLOUR CODE



- ◆ If there are more than 12 tubes per cable then single or double stripes marking will be offered in compliance to EIA/TIA 598.

## PRINTING DETAILS

- ◆ APAR INDIA ~Fibre Count~ Fibre Type~ OFC~ Laser Symbol~ Telephone Symbol~ Year of Manufacturing~ Cable ID~ Meter Marking
- ◆ Customized marking available on request.

## PACKING DETAILS

- ◆ Packing Length- 2Km, 4Km, 6Km (tolerance +/- 5%)
- ◆ Packing Material- Wooden Drum
- ◆ Customized drum lengths are available on request.



T: 022 2526 3400/6780 0400 | E: [corporate@apar.com](mailto:corporate@apar.com) | [www.apar.com](http://www.apar.com) | [www.apar.com/telecom-solutions](http://www.apar.com/telecom-solutions)

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