

**TECHNICAL DETAILS OF 6/12/24/36/48/72/96/144/288/432 F
MULTI LOOSE TUBE DESIGN, DOUBLE SHEATH ARMOUR OPTICAL FIBRE CABLE**

(1) MECHANICAL AND ENVIROMENTAL CHARACTERISTICS:

Temperature Range (IEC 60794-1-2-F1)	Laying and Installation -10° to +50°C Operation -40° to +70°C Transport and Storage -40° to +70°C
Cable Bending Radius (IEC 60794-1-2-E11A)	Permanent (mm) 20 x D, D = Cable Diameter Temporary (mm) 10 x D, D = Cable Diameter
Repeated Bending (IEC 60794-1-2-E6)	30 Cycle, r= 20 X D, 5 Kg Load, D = Cable Diameter
Tensile Force (IEC 60794-1-2-E1)	2000 N - 4000N
Torsion Resistance (IEC 60794-1-2-E7)	10 Cycle (± 180°) 10 Kg Weight, L= 2 Mtr
Crush Resistance (IEC 60794-1-2-E3)	4000 N/ (100 X 100 mm) for 60 sec
Impact Resistance (IEC 60794-1-2-E4)	Height 500 mm, Weight = 3 Kg, 3 Nos
Kink Resistance (IEC 60794-1-2-E10)	10 x D, D = Cable Diameter
Water Penetration (IEC 60794-1-2-F5B)	1 Mtr Water Head, 3 Meter Cable Sample, 24 Hours

*For duct and direct burial applications

(2) OPTICAL CHARACTERISTICS:

Fibre Type	Fiber Attenuations- dB/km					Min. Bandwidth (Mhz*km)	
	850 nm	1300 nm	1310 nm	1550 nm	1625 nm	850 nm	1300 nm
G652D (9/125µm)	-	-	≤ 0.36	≤ 0.24	≤ 0.26	-	-
G657A1 (9/125µm)	-	-	≤ 0.35	≤ 0.22	≤ 0.25	-	-
OM1 (62.5/125µm)	≤ 3.5	≤ 1.5	-	-	-	≥ 200	≥ 500
OM2 (50/125µm)	≤ 3.2	≤ 1.2	-	-	-	≥ 500	≥ 500
OM3 (50/125µm)	≤ 3.2	≤ 1.2	-	-	-	≥ 1500	≥ 500
OM4 (50/125µm)	≤ 3.2	≤ 1.2	-	-	-	≥ 3500	≥ 500

* Change in Attenuation after the test shall be less than 0.05dB/km (For SM)

* Change in Attenuation after the test shall be less than 0.15dB/km (For MM)

(3) COLOUR CODING:

Colour of Fibres in a Tube :

For 6 Fibre per Tube	Blue, Orange, Green ,Brown,Slate,White
For 12 Fibre per Tube	Blue, Orange, Green ,Brown,Slate,White,Red, Black,Yellow, Violet, Pink and Aqua.
For 24 Fibre per Tube	Blue, Orange, Green ,Brown, Slate, White, Red, Black,Yellow, Violet, Pink, Aqua, Blue with Black ring, Orange with Black ring, Green with Black ring, Brown with Black ring, Slate with Black ring, White with Black ring, Red with Black ring, Yellow with Black ring, Violet with Black ring, Pink with Black ring, Aqua with Black ring and Natural.

* DIN Colour code is also Available

Colour of Loose Tubes:

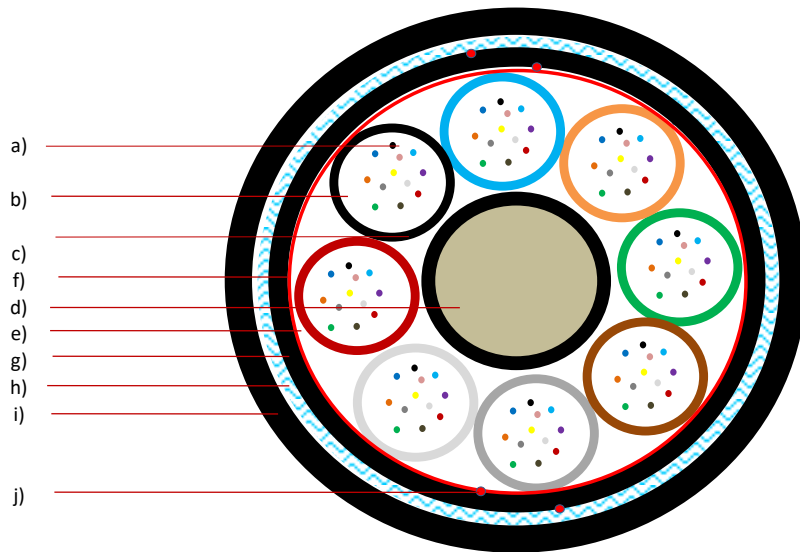
Fibre Count	Element	Fiber Tubes	No of SZ layer	Colour of loose tube	Colour Of fiber in Loose Tube
6	6	1	1	Blue	Blue, Orange, Green, Brown, Slate, White
12	6	2	1	Blue, Orange	Blue, Orange, Green, Brown, Slate, White
24	6	4	1	Blue, Orange, Green, Brown	Blue, Orange, Green, Brown, Slate, White
36	6	6	1	Blue, Orange, Green, Brown, Slate, White	Blue, Orange, Green, Brown, Slate, White
48	6	4	1	Blue, Orange, Green, Brown	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink and Aqua.
72	6	6	1	Blue, Orange, Green, Brown, Slate, White	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink and Aqua.
96	8	8	1	Blue, Orange, Green ,Brown,Slate,White,Red, Black.	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink and Aqua.
144	12	12	1	Blue,Orange,Green,Brown, Slate,White,Red, Black,Yellow,Violet,Pink and Aqua.	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink and Aqua.

288	12	12	1	Blue,Orange,Green,Brown, Slate,White,Red, Black,Yellow,Violet,Pink and Aqua.	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink, Aqua, with all 11 ring mark and Natural
288	24	24	2	LY-1 Blue, Orange, green, Brown, Slate, White, Red, Black, Yellow. LY 2- Blue,Orange,Green, Brown, Slate,White,Red, Black,Yellow,Violet,Pink, Aqua, Blue, Orange,Green.	Blue,Orange,Green,Brown, Slate,White,Red, Black,Yellow,Violet,Pink and Aqua.
432	18	18	2	LY-1 Blue, Orange, green, Brown, Slate, White LY 2-Blue,Orange,Green, Brown, Slate,White,Red, Black,Yellow,Violet,Pink and Aqua.	Blue,Orange,Green,Brown,Slate, White,Red, Black,Yellow, Violet, Pink, Aqua, with all 11 ring mark and Natural

(4) CABLE CONSTRUCTIONAL DETAILS:

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|---------------------------------|--|
| a) Primary Coated Optical Fibre | Colour Coded Fiber (SM/MM) |
| b) Tube Filling Compound | Thixotropic Jelly |
| c) Loose Tube(s) | PBTP |
| d) Central Strength Member | FRP Rod |
| e) Water Blocking Element | Thixotropic Jelly |
| f) Core Wrapping | Polyester Tape |
| g) Inner Sheath | MDPE |
| h) Armouring | ECCS-Corrugated, Chrome Plated Co-polymer Steel Tape |
| i) Outer Sheath | HDPE Black |
| j) Rip Cords | 3 Ply, suitable to rip open sheath |

Typical Cross Section of 96 F



(5) DELIVERY INFORMATION:

Fibre Count	Outer Dia (mm)-Nominal	Cable Wt (Kg/Km)-Approx	Tensile Strength	Crush Load	Cable Length (Meter)
6	12.6 ± 0.5	150	2000 N	4000 N	2000/4000 ± 10%
12	12.6 ± 0.5	150	2000 N	4000 N	2000/4000 ± 10%
24	12.6 ± 0.5	150	2000 N	4000 N	2000/4000 ± 10%
36	12.6 ± 0.5	150	2000 N	4000 N	2000/4000 ± 10%
48	12.8 ± 0.5	155	2000 N	4000 N	2000/4000 ± 10%
72	12.8 ± 0.5	155	2000 N	4000 N	2000/4000 ± 10%
96	14.2 ± 0.5	190	2000 N	4000 N	2000 ± 10%
144	16.8 ± 1.0	265	3000 N	4000 N	2000 ± 10%
288 (I Layer)	19.2 ± 1.0	345	4000 N	4000 N	2000 ± 10%
288 (II Layer)	19.2 ± 1.0	345	4000 N	4000 N	2000 ± 10%
432 (II Layer)	19.6 ± 1.0	360	4000 N	4000 N	2000 ± 10%

(6) CABLE SHEATH MARKING:

Cable sheath shall be marked in white colour with Hot Foil Indentation method. **Marking details can be customized.** Below mentioned details are generally marked on the cable sheath.

Telephone Symbol, Laser Symbol, Number of Fibres, Type of Fibre , Type of cable, Month & Year of Manufacturer, Birla Ericsson, India, Sequential Meter Marking & Drum Number

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