

Cable Description	96F SINGLE SHEATH (HDPE) DUCT CABLE
Type of Fibre	Single Mode, G.655 (Leaf)

Introduction

Outdoor Duct optic cable containing SMF in full compliance with ITU-T G 655 (Leaf). The offered cables are fully compliant to the relevant IEC specifications.

Cable Design

- * Single mode fibers in full compliance with ITU-T-G655 (Leaf)
- * Non-metallic and anti-buckling element FRP rod used as Central Strength Member
- * Loose buffer tubes fully filled with Thixotropic Jelly & Fibers
- * Loose buffer tubes S-Z Stranded
- * S-Z core is Dry & Core Wrapping with Water Swellable Tape
- * Peripheral Strength Member - Glass Yarn
- * Rip Cord to open the sheath
- * Outer sheath- HDPE (UV Stabilized), Black

Application

- * Suitable for Duct installation

Special Features

- * Single layer stranded construction
- * Flexible buffer tubes provide easy fibre routing inside closure
- * Dielectric Construction

Cable Physical Characteristics

Fibre Count	96
Number of Fibres in each Loose Tube	12
Number of Loose Tube in each cable	8
Number of Filler (if Required)	0
Cable Diameter (mm)	11.8
Tolerance $\pm$ (mm)	0.5
Nominal Cable Weight (kg/km)	110
Standard Length (meters)	4000 $\pm$ 10%

Cable Mechanical & Environmental Characteristics

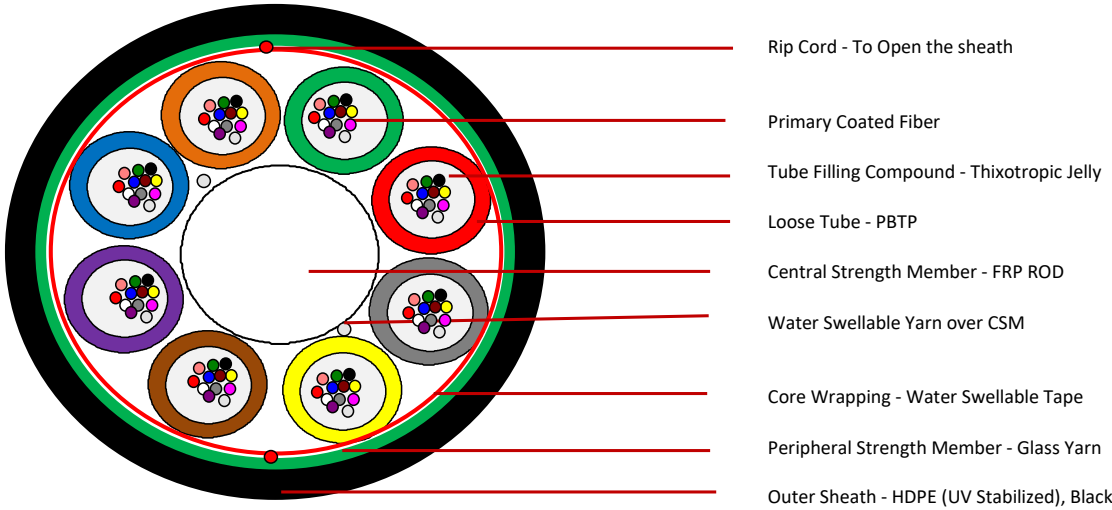
Test	Standard	Product Performance
Temperature Range (°C)	[IEC 60794-1-22-F1]	-40 °C to +70 °C
Cable Bending Radius (mm)	[IEC 60794-1-21-E11 A & B]	20 X D , D= Cable diameter
Tensile Force (N)	[IEC 60794-1-21-E1]	2700 N
Impact Resistance (Nm)	[IEC 60794-1-21-E4]	10 Nm
Crush Resistance (N)	[IEC 60794-1-21-E3 A]	2000 N / (100 X 100 mm)
Torsion Resistance	[IEC 60794-1-21-E7]	10 Cycle ($\pm$ 180°)
Water Penetration	[IEC 60794-1-22-F5 B]	1 Meter Water Head, 3 Meters Cable Sample, 24 Hours

Cable Transmission Characteristics

Fibre Type		Attenuation Coefficient (dB/Km)					PMD	Cut-Off Wavel	MFD
		850	1300	1310	1550	1625	ps/sqrt.km	nm (Cable)	μ m
Single Mode	G.655 Leaf	-	-	-	$\leq$ 0.26	$\leq$ 0.28	$\leq$ 0.1	$\leq$ 1450	9.6 $\pm$ 0.4

Cable Constructional Details

Cable Cross Sectional Diagram of 96F Cable [Drawing not to scale]



Identification Fibre & Loose Tube Colour

Fibre Colour	Red	Green	Blue	Yellow	White	Slate	Brown	Violet	Aqua	Black	Orange	Pink
Loose Tube Colour	Blue	Orange	Green	Red	Slate	Yellow	Brown	Violet				

Proposed Printing Details & Method at every meters

Printing Method & Colour	Hot Foil & Contrast	0001m COLT LDN 96F MLT 8x12F G655 LGCE « batchcode » yyyy/mm 0002m
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Proposed Stenciling on Drum

Every length will be delivered on non-returnable wooden drums. Generally the cable drum flange will be marked with following: (These details can also be customised.)	* Arrow showing the direction, the drum can be rolled. * Country of origin. * The manufacturer's name * Number of fibers. * Nominal cable length in meters * Net and gross weight. * Drum number * Customer's/Project name and destination
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Specification of Single Mode Matched Clad Type Optical fibre Conforming to ITU - T Rec. G.655 (Leaf)

Properties	Unit	Values
Transmission		
Attenuation at 1550 nm (Cabled)	dB/km	≤ 0.26
Attenuation at 1625 nm (Cabled)	dB/km	≤ 0.28
Point discontinuity at 1550 nm	dB	≤ 0.05
Difference in maximum attenuation in the range from 1525 to 1575 nm w.r.t attenuation at 1550 nm	dB/km	≤ 0.03
Maximum chromatic dispersion at 1530 - 1565 nm wavelength range	ps/nm.km	2.0 to 6.0
1565 - 1625 nm wavelength range	ps/nm.km	4.5 to 11.2
Zero dispersion slope	ps/nm ² .km	≤ 0.092
PMD at 1550 nm (Fibre)	ps/sqrt.km	≤ 0.10
PMD Link Design Value @ 1550 nm*	ps/sqrt.km	≤ 0.04
Fibre cut-off wavelength	nm	≤ 1450
Mode field diameter range at 1550 nm	μm	9.6 ± 0.4
Geometrical		
Cladding Diameter	μm	125 ± 0.7
Cladding noncircularity	%	≤ 0.7
Primary Coating Diameter (uncoloured)	μm	242 ± 7
Core/Clad or Mode Field concentricity error	μm	≤ 0.5
Coating / Cladding Concentricity error	μm	≤ 12
Numerical Aperature**		0.14
Refractive Index at 1550 & 1625 nm**		1.468 & 1.469
Mechanical**		
Proof Test for minimum strain level	kpsi, Gpa, %	$\geq 100, \geq 0.69, \geq 1$
Change in Attenuation with Bending 100 Turns on 60 mm Diameter Mandrel		
at 1550	dB	≤ 0.05
at 1625	dB	≤ 0.1
1 Turn on 32 mm Diameter Mandrel		
at 1550	dB	≤ 0.5
at 1625	dB	≤ 0.5
Strippability force to remove primary coating of fibre	Newton	$1.3 \leq F \leq 8.9$
Fibre Curl	radius of curve.	$\geq 4 \text{ Mtr}$
Dynamic tensile strength (unaged)	kpsi	≥ 550
Dynamic tensile strength (Aged)	kpsi	≥ 440
Dynamic Fatigue		≥ 20
Environmental**		
Induced attenuation at 1550 nm & 1625 nm for Temperature & Humidity cycle from -10°C to +85°C at 98 % humidity (min), Reference Temperature 23°C	dB/km	≤ 0.05
Temperature cycle from -60°C to +85°C, Reference Temperature 23°C	dB/km	≤ 0.05
Water Immersion at $23 \pm 2^\circ\text{C}$	dB/km	≤ 0.05
Accelerated Ageing (Temperature) at $85 \pm 2^\circ\text{C}$, Reference Temperature 23°	dB/km	≤ 0.05

** Fibre Manufacturer Certificate will be provided