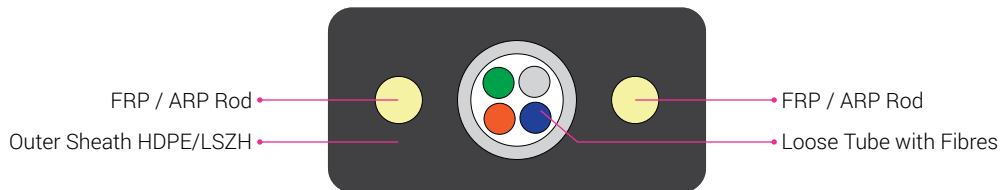


HUBNETIX

FTTH Flat Type Drop Cable



Description

HUBNETIX LANLINE FTTH Fibre Optic cables are suitable for delivery of communications signal over optical fiber from the operator's switching equipment all the way to a home or business, thereby replacing existing copper infrastructure such as telephone wires and coaxial cable. LANLINE FTTH cables enables robust video, internet and voice services by providing higher bandwidth. HUBNETIX LANLINE FTTH cable adopts the popular design in industry, its structure and performance is optimized for FTTH applications. HUBNETIX FTTH drop cables are small diameter and light weight, this makes it space-saving and easy to handle. The cables are designed to make fibre pulling easily out from the cables. The FTTH drop cables are ideal to use for direct installation into the houses.

Cable Construction

The Flat type drop cable from HUBNETIX LANLINE series offers the most complete solution for all FTTH applications. The flat type drop cable is designed for use in aerial and duct/conduit environments. The single tube contains gel which provides ease to clean up. Dielectric strength members (FRP/ARP) placed parallel to single loose tube, one on each side, to provide necessary longitudinal strength, HUBNETIX LANLINE FTTH cables are available with G657 optical fibre and provides increased bend performance.

Standard Compliance

- Telecordia GR-20, IEC 60794
- EIA/TIA, ITU-T, EN187000, RUS1755.900

Environmental Specifications (Temperature)

- Operation / Storage : -40°C to +70°C
- Installation : -10°C to +70°C

Features

- Multiple Fibre types including bend resistant
- Strength members available in metallic (optional)
- Fibre count available up to 12F

Application

- FTTH Aerial and Duct/Conduit
- Local loop
- Broadband Network

Advantages

- Easy drop
- Multiple Network Applications
- Reduces cable preparation and Installation time
- Reduces cost
- Easy installation

Physical Characteristics

Fibre Count	Cable Outer Diameter (mm) Nominal	Weight (kg/km) (Nominal)	Tensile Strength (Nominal)		Crush Resistance (N/10cm)	Bending Radius (mm)	
			Installation	Operation		Temporary	Permanent
2-12	7.2 x 3.5	60	1200	600	2000	100	200

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Fibre Technical Specifications

Optical Characteristics

Multi-Mode - Fibre Type & Grade

Characteristics	Conditions	Specified Values		Units
		62.5/125µm – OM1	50/125µm – OM2/OM3/OM4	
Attenuation	850nm	≤ 3.5	≤ 3.0	dB/km
	1300 nm	≤ 1.5	≤ 1.0	dB/km
Bandwidth	850 nm	≥ 200	≥ 500 / ≥ 1500 / ≥ 3500	MHz.km
	1300 nm	≥ 600	≥ 500 / ≥ 500 / ≥ 500	MHz.km
Ethernet Performance 10GBE	850nm	33	150 /300/ 550	m
Ethernet Performance 1000GBE	850nm	220	750 /1000/ 1100	m
Numerical Aperture		0.275 ± 0.015	0.200 ± 0.015	

Geometrical Characteristics

Core Diameter		62.5 ± 2.5	50.0 ± 2.5	µm
Core Non – Circularity		≤ 5.0	≤ 5.0	%
Core/Cladding Concentricity Error		≤ 1.5	≤ 1.5	µm
Cladding Diameter		125.0 ± 1.0	125.0 ± 1.0	µm
Cladding Non – Circularity		≤ 1.0	≤ 1.0	%
Primary Coating Diameter		245 ± 10	245 ± 10	µm
Coating/Cladding Concentricity Error		≤ 12	≤ 12	µm
Primary Coating Material (Colored)		UV Cured Acrylate	UV Cured Acrylate	

Mechanical Characteristics

Bending Induced Attenuation				
10 Turns @60mm Radius	850nm	≤ 0.5		dB
	1300 nm	≤ 0.5		dB
100 Turns @ 37.5mm Radius	850nm		≤ 0.50	dB
	1300 nm		≤ 0.50	dB
2 Turns @ 15mm Radius	850nm		≤ 1.0	dB
	1300 nm		≤ 1.0	dB
Proof Stress Level		≤ 1.0	≤ 1.0	%
		≤ 100	≤ 100	kpsi

Optical Characteristics

Single-Mode - Fibre Type & Grade

Characteristics	Conditions	Specified Values			Units
		ITU-T G.652.D	ITU-T G.657.A1	ITU-T G.657.A2	
Attenuation	1310 nm	≤ 0.36	≤ 0.36	≤ 0.38	dB/km
	1550 nm	≤ 0.23	≤ 0.23	≤ 0.23	dB/km
Chromatic Dispersion	1285 - 1330 nm		≤ 3.5		ps/(nm.km)
	1550 nm		≤ 18.0		ps/(nm.km)
Cable cutoff wavelength λ _{cc}			≤ 1260		nm
Zero Dispersion wavelength			1300 - 1324		nm
Zero Dispersion slope			≤ 0.092		ps/nm ² .km
Polarization mode Dispersion (PMD)	Fibre		≤ 0.2		ps/km
	Link Design Value		≤ 0.08		ps/km

Geometrical Characteristics

Mode Field Diameter (MFD)	1310 nm	9.2 ± 0.4	8.6 ± 0.4	6.3 ± 9.5	µm
	1550 nm	10.4 ± 0.5	9.8 ± 0.5		µm
Cladding Diameter			125.0 ± 1.0		µm
Cladding Non – Circularity			≤ 1.0		%
Core/Cladding Concentricity Error			≤ 0.5		µm
Coating/Cladding Concentricity Error			≤ 12.0		µm
Primary Coating Diameter			245 ± 10		µm
Primary Coating Material (Colored)			UV Curved Acrylate		
Fibre Curl (Radius)			≥ 4		m

Note- The optical attenuation/PMD given values may change due to fibre cabling.

Mechanical Characteristics - SM

Single-Mode - Fibre Type & Grade

	Conditions	Specified Values			Units
		ITU-T G.652.D	ITU-T G.657.A1	ITU-T G.657.A2	
Bending Induced Attenuation					
1 Turn @32mm Diameter	1550 nm		≤ 0.05		dB
100 Turns @ 50mm Diameter	1310 nm		≤ 0.05		dB
	1550 nm		≤ 0.05		dB
100 Turns @ 60mm Diameter	1625 nm		≤ 0.05		dB
Proof Stress Level			≥ 1.00		%
			≥ 100		kpsi

Environmental Characteristics

Environmental Tests				
Temperature Dependence	-60 to +85°C		≤ 0.05	dB/km
Temperature-Humidity Cycling	-10 to +85°C		≤ 0.05	dB/km
Water Immersion	23		≤ 0.05	dB/km
Dry Heat Aging	85		≤ 0.05	dB/km
Damp Heat	85°C @ 85% RH		≤ 0.05	dB/km

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Fibre Color Code

1	RD – Red	7	BR – Brown
2	GR – Green	8	VT – Violet
3	BL – Blue	9	TQ – Turquoise
4	YL – Yellow	10	BK – Black
5	WT – White	11	OR – Orange
6	GY – Grey	12	PK – Pink

Ordering Info & Part Numbers

Part Number Example	Description
HLH-FFFS2H12-BK	LANLINE 12-Fibre, OS2 SM, FTTH flat type drop cable

HUBNETIX Prefix			1	2	3	4	5	6
H	L	H	F	FF	S2	H	12	BK

1=F - Fibre Optic	2=Cable construction	3=Fibre type	4=Flame Rating	5=XX - Fibre Count	6=XX - Fibre Color code
	FF – FTTH flat type drop cable	S1 – Singlemode OS1 9/125µm S2 – Singlemode OS2 9/125µm (ITU G.652.D) M1 – Multimode OM1 62.5/125µm M2 – Multimode OM2 50/125µm M3 – Multimode OM3 50/125µm M4 – Multimode OM4 50/125µm	L – Low Smoke Zero Halogen H – HDPE N – Non-Rated	02 – 02-fibre 04 – 04-fibre 06 – 06-fibre 08 – 08-fibre 12 – 12-fibre	BK – BLACK

Note: All packaging is 2,000 mtr drum reel. The above shown cable designs are HUBNETIX standard designs. Other lengths and customised designs are available upon specific request.

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The dimensions and specifications in this document are for reference purposes only and are subject to change without notice. Consult HUBNETIX Corp. for the latest dimensions and design specifications.

