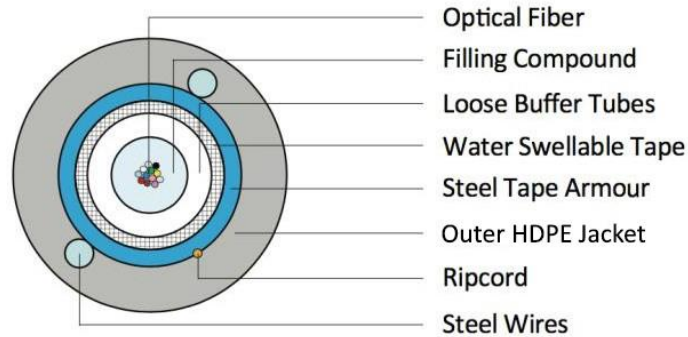


## Fiber Optic, Loose-Tube, Armoured, Jelly-filled, Unitube HDPE Cable



### Description

Avalon single jacket single armour central loose tube cable is a UV-stabilized, fully water blocked cable for outdoor duct and direct burial applications. The loose tube design provides stable and highly reliable transmission parameters for a variety of voice, data, video and imaging applications.

This lightweight cable offers durability and flexibility required for many outside plant applications. Its compact design is suitable for limited conduit space and the cables are well suited for campus-type environments in and between buildings without building entry joints.

The fiber cable contains 2 to 24 fibers individually coated with 250µm layer and color coded as per Telcordia requirements. The optical fibers are contained inside a central loose tube with thixotropic gel to prevent water penetration and protect the fibers against shock. The central loose tube is surrounded by a water swell-able tape, a corrugated steel tape, rip cord and a HDPE jacket.

Two steel wires are embedded within the outer jacket which provides additional reinforcement to the cable. The steel tape provides extra crush resistance and offers excellent rodent protection.

The fiber optic central loose tube cable is RoHS compliant and exceeds all the requirements as per the industry standards.

### Features and Benefits

- Fiber Count 2-12 fibers
- Corrugated steel armouring
- Central loose tube design
- Lightweight construction
- OS2, OM3 and OM4 performance types
- Rodent resistant

## Applications

- Building Interconnections (Campus LAN)
- FTTx & Telecommunications Networks
- Cable TV and security applications
- Telemetry applications

## Standards

- ITU.T G.652D
- ANSI/TIA-568-C.3 / ISO/IEC 11801
- IEC 60793 / IEC 60794
- IEC 60332-1-2, IEC 60332-3-24, IEC 60754-1,2 & IEC 61034-2

## Specifications

### Optical Characteristics: Singlemode - 9/125 $\mu$ m OS2-G.652D

Fiber Type		Unit	OS2 G.652D	
Wavelength		nm	1310	1550
Attenuation		dB/km	$\leq 0.35$	$\leq 0.21$
Chromatic dispersion		Ps/nm.km	$\leq 3.5$	$\leq 18$
Zero dispersion wavelength		nm	1300 ~ 1324	
Zero dispersion slope		ps/nm <sup>2</sup> .km	$\leq 0.092$	
PMD		ps/ $\sqrt$ km	$\leq 0.2$	
Cut-off wavelength		nm	$\leq 1260$	
Mode-field diameter		$\mu$ m	9.2 $\pm$ 0.4	10.4 $\pm$ 0.5
Macro Bend Loss	30mm radius x 100 turns	dB	-	$\leq 0.05$
	15mm radius x 10 turns		-	-
	10mm radius x 1 turns		-	-
	7.5mm radius x 1 turns		-	-
Core/Clad Concentricity Error		$\mu$ m	$\leq 0.8$	
Cladding Diameter		$\mu$ m	125 $\pm$ 1	
Cladding Non- circularity		%	$\leq 1.0$	
Coating Diameter		%	245 $\pm$ 15	
Proof Test Level		Kpsi	$\geq 100$	
Fiber curl		m	$\geq 4$	

## Specifications

### Optical Characteristics: Multimode - 62.5 μm (OM1), 50μm (OM2, OM3, OM4)

Fiber Type		OM1		OM2		OM3		OM4	
		850	1300	850	1300	850	1300	850	1300
Wavelength	nm	850	1300	850	1300	850	1300	850	1300
Attenuation	dB/km	≤ 3.5	≤ 1.0	≤ 3.0	≤ 1.0	≤ 3.0	≤ 1.0	≤ 3.0	≤ 1.0
Over filled Launch Bandwidth (LED based sources)	MHz.km	≥ 200	≥ 500	≥ 500	≥ 500	≥ 1500	≥ 500	≥ 3500	≥ 500
Effective Modal Bandwidth(850 nm Laser based sources)	MHz.km	-	-	-	-	≥ 2000	-	≥ 4700	-
Numerical aperture	-	0.275 ± 0.015		0.20 ± 0.015		0.20 ± 0.015		0.20 ± 0.015	
Core diameter	μm	62.5 ± 3.0		50 ± 3.0		50 ± 3.0		50 ± 3.0	
Core Non-Circularity	%	≤ 6.0		≤ 6.0		≤ 6.0		≤ 6.0	
Cladding diameter	μm	125 ± 2.0		125 ± 2.0		125 ± 2.0		125 ± 2.0	
Cladding Non-Circularity	%	≤ 2.0		≤ 2.0		≤ 2.0		≤ 2.0	
Core / Cladding Concentricity Error	μm	≤ 3.0		≤ 3.0		≤ 3.0		≤ 3.0	
Coating diameter	μm	245 ± 5.0		245 ± 5.0		245 ± 5.0		245 ± 5.0	
Proof test level	Kpsi	≤ 100		≤ 100		≤ 100		≤ 100	

## Cable Construction

Construction of single unit cables		
Number of fibers		Max. 12
Filling Compound in Loose BufferTube		Thixotropic Jelly Compound
Loose buffer tube		PBT (Polybutylene Terephthalate) 3.0 mm Ø
Filler		Polyethylene rod (if necessary)
Water blocking material		Water swell-able tape over lose tube
Armour	Material	Corrugated Steel Tape with Plastic Coating on Both Sides Thickness: Nom. 0.150mm (Steel Tape) Nom. 0.05mm (Plastic Coating)
Sheath strength member		Two steel wires, 1.1 nominal Ø
Ripcord		Two ripcords polyester based applied below steel tape
Outer Jacket Material	Material	Black HDPE
	Thickness	Nominal 2.1mm

## Colour of fiber buffer

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

## Transmission Performance

Application	OS1/OS2 Singlemode (1310/1383/1550)	OM1 Multimode (850/1300)	OM2 Multimode (850/1300)	OM3 Multimode (850/1300)	OM4 Multimode (850/1300)
100Base-FX, Ethernet, @ 1300nm	-	2000m	2000m	2000m	2000m
100Base-LX, @ 1310nm	10000m	-	-	-	-
1000Base-SX, Gigabit, Ethernet @ 850nm	-	275m	550m	550m	550m
100Base-LX, Gigabit Ethernet, @ 1310nm	10000m	550m	550m	550m	550m
10GBase-SR, 10Gbps @ 850nm	-	33m	82m	300m	550m
10GBase-LR, 10Gbps @ 1310nm	1000m	-	-	-	-
40GBase-SR, 40Gbps @ 850nm	-	-	-	100m	150m
40GBase-LR4, 40Gbps @ 1310nm	10000m	-	-	-	-
100GBase-SR10, 100Gbps @ 850nm	-	-	-	100m	150m
100Base-LR4, 100Gbps, @ 1310nm	10000m	-	-	-	-
100Base-ER4, 100Gbps, @ 1550nm	30000m	-	-	-	-

## Environmental Data

Temperature range	Value
Storage	- 40 ° C to + 70 ° C
Service	- 40 ° C to + 70 ° C
Installation	- 20 ° C to + 60 ° C

## Mechanical Specifications

Tensile Load / Strength	IEC 60794-1-2-E1	2700N
Crush Resistance	IEC 60794-1-2-E3	2200N/10cm
Impact Resistance	IEC 60794-1-2-E4	1 impacts @ 3 points, 25Nm /25J
Torsion Test	IEC 60794-1-2-E7	± 180°, ± 1 turn/2m
Cable Bend	IEC 60794-1-2-E11	20 D for 4 turns, 10 Cycles
Drip test	IEC-60794-1-E14	30 cm, 70°C, 24 hour
Temperature Cycling	IEC 60794-1-2-F1	23°C → -10°C → 70°C
Water penetration	IEC 60794-1-2-F5	1 meter head, 3 meter / 24 hours

## Physical Specifications

No. of fibers	*Cable diameter HDPE mm	Nominal weight Kg/km	Maximum tensile load		Crush load		Min. bend radius	
			Shortterm	Longterm	Short term	Longterm	Loaded	Installed
			N	N	N/cm	N/cm	mm	mm
2	9.0	93	2700	900	220	110	180	90
4	9.0	93	2700	900	220	110	180	90
6	9.0	93	2700	900	220	110	180	90
8	9.0	93	2700	900	220	110	180	90
12	9.0	93	2700	900	220	110	180	90

\* Denotes nominal value for HDPE Jacketed Cable

## Ordering Information

Part Number	Description
ANFC-XXX-YYY-LT-AR	Fiber Optic, Loose-Tube, Armoured, Jelly-filled, Unitube HDPE Cable

\* XXX = SM (OS2), OM1, OM2, OM3, OM4

\* YYY = Number of Cores 004, 006, 012

\* Standard reel length 2000m