



LTC ADSS-30

12x SM G.657.A1 (3x4)

Article number: 77958

Date: 03-08-2022

The Loose Tube Cable All Dielectric Self-Supporting (LTC ADSS) is a metalfree aerial distribution cable, with dry waterblocking and aramid yarns under the outersheath. This cable is to be used under all dielectric circumstances, for example on distribution and medium/low voltage power lines, railway, tram, trolley bus lines and between buildings. Because of its strong tensile members it is suitable for aerial applications without using additional strenght members. This cable is designed for spans between approx. 30 and 80 mtrs, depending on installing and surroundings conditions, with the conditions from the NESC tables as a basis. For further information, please consult document Sag & Tension Calculations under characteristic 'Specification'.

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12x SM G.657.A1 (3x4)



Product characteristics

Cable type	ADSS
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibers	12
Number of fibers per optical element	4
Number of cores	3
Strain relief	Yes
Optical element	Loose tube, gel filled
Cable metal free	Yes
Number of layers	1 Layer
Strip method	1 Rip cord
Type of strain relief	FRP + Aramid
Material outer sheath	HDPE
Colour outer sheath	Black
Outer sheath thickness	1,2 mm
Outer diameter approx.	8,2 mm
Marking	ACE - TKF LTC ADSS-30 12x SM G.657.A1 (3x4) A-DQ(ZN)2Y 77958 {Batch} {Year} {Length}



Application

Standardization	EN IEC 60794-3-20
Test procedures	EN IEC 60794-1-2
Application	Outside
Blow in	Yes
Euro fire class according to EN 13501-6	Fca

Mechanical specification

Tensile load short term (Tm)	2000 N
Cable strain by Tm	0,8 %
Max. fiber strain at Tm	0,2 %
Tensile load Long Term (TI)	1450 N
Max. operational tension (MOT)	1450 N
Max. allowable tension (MAT)	2400 N
Min. bending radius during installation	165 mm
Min. bending radius after installation	125 mm
Crush resistance acc. meth.E3A	1500 N/dm
Striking surface radius	300 mm
Torsion resistance	360 °/m

Optical specification

Category according to EN 50173	OS2
Max. attenuation @ 1310 nm	0,35 dB/km
Max. attenuation @ 1550 nm	0,22 dB/km
Max. attenuation @ 1625 nm	0,25 dB/km

Environmental specification

Cable longitudinally watertight	Yes
Longitudinal water blocking	Yes
Longitudinal watertight construction	Super Absorbing Polymer
Installation temperature	-15/50 °C
Transportation and storage temperature	-40/70 °C
Operational temperature range Ta1 - Tb1	-30/70 °C
Max. attenuation increase during Ta1 - Tb1	0,05 dB
Operational temperature range Ta2 - Tb2	-40/70 °C
Max. attenuation increase during Ta2 - Tb2	0,15 dB



UV resistant	Yes
UV-protection	ISO 4892/2

Other specification

Halogen free (acc. EN 60754-1/2)	Yes
Effective E-modulus	5,45 GPa
Effective CTE	21,8 10 ⁻⁶ /°C
Cross sectional area	53,2 mm ²

Logistical specifications

Unit	meter
Netto Weight (kg/m)	0.048
Default packaging	H X 4000/200



Fibre specification G.657.A1

ACE-DS-OT-VSP-SM-G657A1-v03-e

date : 11-08-2020

Technical product information

Product characteristics - optical fibers

Fibre

Type of fibre	Hydrogen passivated, dispersion unshifted, matched cladding bending loss insensitive single mode fibre 9/125 µm Full compatible with G.652.D fibre Optical and geometrical properties exceed ITU-recommendations G.652.D and G.657.A1
Standard	IEC-60793-2-50, B-657.A1
Standard	ITU-T G.657.A1

Characteristics

Parameter	Properties	Unit
Mode field diameter: 1310 nm	9.0 ± 0.3	µm
Mode field diameter: 1550 nm	10.2 ± 0.4	µm
Core non-circularity	max. 6	%
Core/cladding concentricity error	max. 0.4	µm
Cladding diameter	125.0 ± 0.5	µm
Cladding non-circularity	max. 0.7	%
Coating diameter	242 ± 5	µm
Coating/cladding concentricity error	max. 8	µm
Temperature sensitivity: -60 to +85 °C	max. 0.05	dB/km
Bending sensitivity - 100 turns around Ø50 mm - 1550 nm	max. 0.05	dB
Bending sensitivity - 100 turns around Ø60 mm - 1625 nm	max. 0.05	dB
Bending sensitivity - 10 turns around Ø30 mm - 1550 nm	max. 0.1	dB
Bending sensitivity - 10 turns around Ø30 mm - 1625 nm	max. 0.3	dB
Bending sensitivity - 1 turn around Ø20 mm - 1550 nm	max. 0.75	dB
Bending sensitivity - 1 turn around Ø20 mm - 1625 nm	max. 1.5	dB
Proof test level	min. 0.70	GPa
Fibre curl	min. 4	m
Cable cut-off wavelength	max. 1260	nm
Zero-dispersion wavelength	1300 – 1324	nm
Zero-dispersion slope	max. 0.090	ps/nm ² ·km
Chromatic dispersion: 1285 nm – 1330 nm	max. 3.2	ps/nm·km
Chromatic dispersion: 1550 nm	max. 17	ps/nm·km
Chromatic dispersion: 1625 nm	max. 21	ps/nm·km
Polarisation mode dispersion: max. individual fibre	max. 0.1	ps/nm·km
PMD _Q	max. 0.06	ps/√km
Max. attenuation at 1383 nm (α ₁₃₈₃) [note a]	< max. α ₁₃₁₀	-
Effective group core refractive index: 1310 nm	1.4671	-
Effective group core refractive index: 1550 nm	1.4675	-
Effective group core refractive index: 1625 nm	1.4680	-

note a: after hydrogen ageing



TECHNICAL PRODUCT INFORMATION

Catenary calculations

LTC ADSS-30

Based on the following installation conditions

Installation temperature 15 °C

Nominal sag 1%

The cables are suitable for the NESC-situations with spans, tensions and sags as listed in the table below

		NESC light			NESC medium			NESC heavy		
		Temperature	-1 °C	Temperature	-10 °C	Temperature	-20 °C	Temperature	-20 °C	
		Wind velocity	26.5 m/s	Wind velocity	17.7 m/s	Wind velocity	17.7 m/s	Wind velocity	17.7 m/s	
		Ice thickness	0 mm	Ice thickness	6.5 mm	Ice thickness	12.5 mm	Ice thickness	12.5 mm	
Fibre count	Tubes & fibers	max. span	max. tension	max. sag	max. span	max. tension	max. sag	max. span	max. tension	max. sag
	(n x m)	(m)	(N)	(%)	(m)	(N)	(%)	(m)	(N)	(%)
4	1 x 4	80	1370	3.10	48	1420	3.45	30	1495	3.66
8	2 x 4	80	1360	3.11	48	1410	3.47	30	1490	3.68
12	3 x 4	80	1370	3.10	48	1420	3.45	30	1495	3.67
24	6 x 4	80	1390	3.05	50	1480	3.45	30	1520	3.61
12	2 x 6	80	1330	3.26	50	1400	3.68	30	1430	3.87
24	4 x 6	78	1310	3.24	48	1360	3.64	30	1430	3.88
48	8 x 6	85	1845	2.97	60	1955	3.41	40	2090	3.75
48	4 x 12	78	1550	3.09	53	1650	3.48	34	1745	3.74
72	6 x 12	80	1600	3.07	54	1690	3.46	35	1800	3.74
96	8 x 12	80	2000	2.84	60	2160	3.22	40	2300	3.53
144	12 x 12	85	2915	2.59	70	3135	2.93	50	3370	3.33

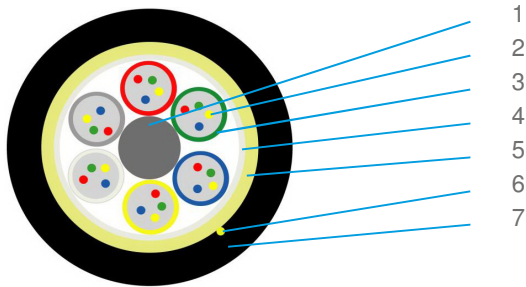
Table: operational conditions, max. achievable span, tension and sag.

TECHNICAL PRODUCT INFORMATION

Cable construction and colour code

LTC ADSS -30 / -80 / -150

All-dielectric self-supporting cable
FO cable with stranded loose tubes



Description

1	Central element (FRP)
2	Optical fibres
3	Loose tube with optical fibres
4	Binders & waterblocking tape
5	Waterblocking aramid
6	Ripcord
7	Outer sheath

Standard colours

Fibres		Tubes	
Group 1	Group 2	Layer 1	
1 Red	13 Red +t	1 Red	
2 Green	14 Green +t	2 Green	
3 Blue	15 Blue +t	3 Blue	
4 Yellow	16 Yellow +t	4 Yellow	
5 White	17 White +t	5 White	
6 Grey	18 Grey +t	6 Grey	
7 Brown	19 Brown +t	7 Brown	
8 Violet	20 Violet +t	8 Violet	
9 Turquoise	21 Turquoise +t	9 Turquoise	
10 Black	22 Natural +t	10 Black	
11 Orange	23 Orange +t	11 Orange	
12 Pink	24 Pink +t	12 Pink	

note +t: indicates a black tracer