



## LTC ADSS-80

## 216x SM G.657.A1 (9x24)

Article number: 77661

Date: 12-05-2020



## Product characteristics

Cable type	ADSS
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibers	216
Number of fibers per optical element	24
Number of cores	9
Optical element	Loose tube, gel filled
Cable metal free	Yes
Number of layers	1 Layer
Strip method	1 Rip cord
Strain relief	Yes
Type of strain relief	Aramid fibre
Material outer sheath	HDPE
Colour outer sheath	Black
Outer sheath thickness	1,4 mm
Outer diameter approx.	16,5 mm
Marking	ACE - TKF LTC ADSS-80 216x SM G.657.A1 (9x24) A-DQ(ZN)2Y 77661 {Batch} {Year} {Length}



## Application

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

## Mechanical specification

Tensile load short term (Tm)	5400 N
Cable strain by Tm	0,8 %
Max. fiber strain at Tm	0
Tensile load Long Term (TI)	5400 N
Max. operational tension (MOT)	5400 N
Max. allowable tension (MAT)	8600 N
Min. bending radius during installation	330 mm
Min. bending radius after installation	250 mm
Crush resistance acc. meth.E3A	1500 N/dm
Impact strength	5 J
Torsion resistance	360 °/m

## Optical specification

Category according to EN 50173	OS2
Max. attenuation @ 1310 nm	0,35 dB/km
Max. attenuation @ 1550 nm	0,21 dB/km
Max. attenuation @ 1625 nm	0,24 dB/km

## Environmental specification

Longitudinal water blocking cable	Yes
Longitudinal watertight construction	Super Absorbing Polymer
Installation temperature	-15/55 °C
Transportation and storage temperature	-40/70 °C



Operational temperature range Ta1 - Tb1	-40/70 °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

### Other specification

Halogen free (acc. EN 60754-1/2)	Yes
Effective E-modulus	3,9 GPa
Effective CTE	35 10 <sup>-6</sup> /°C
Cross sectional area	223 mm <sup>2</sup>

### Logistical specifications

Unit	meter
Weight (kg)	0.204
Default packaging	H X 4000/200



# Fibre specification G.657.A1

ACE-DS-OT-VSP-SM-G657A1-v02-e

date : 04-12-2019

## 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 $\mu\text{m}$ 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	$9.0 \pm 0.3$	$\mu\text{m}$
Mode field diameter: 1550 nm	$10.2 \pm 0.4$	$\mu\text{m}$
Core non-circularity	max. 6	%
Core/cladding concentricity error	max. 0.4	$\mu\text{m}$
Cladding diameter	$125.0 \pm 0.5$	$\mu\text{m}$
Cladding non-circularity	max. 0.7	%
Coating diameter	$242 \pm 5$	$\mu\text{m}$
Coating/cladding concentricity error	max. 8	$\mu\text{m}$
Temperature sensitivity: -60 to +85 °C	max. 0.05	dB/km
Bending sensitivity - 100 turns around $\varnothing 50$ mm - 1550 nm	max. 0.05	dB
Bending sensitivity - 100 turns around $\varnothing 60$ mm - 1625 nm	max. 0.05	dB
Bending sensitivity - 10 turns around $\varnothing 30$ mm - 1550 nm	max. 0.1	dB
Bending sensitivity - 10 turns around $\varnothing 30$ mm - 1625 nm	max. 0.3	dB
Bending sensitivity - 1 turn around $\varnothing 20$ mm - 1550 nm	max. 0.75	dB
Bending sensitivity - 1 turn around $\varnothing 20$ 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 <sup>2</sup> ·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 <sub>0</sub>	max. 0.06	ps/ $\sqrt{\text{km}}$
Max. attenuation at 1383 nm ( $\alpha_{1383}$ ) [note a]	< max. $\alpha_{1310}$	-
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-80

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)	(kN)	(%)	(m)	(kN)	(%)	(m)	(kN)	(%)
12	6 x 2	190	3.5	3.7	130	3.5	4.2	80	3.5	4.6
24	6 x 4	215	4.0	3.6	150	4.0	4.2	90	3.9	4.6
32	8 x 4	185	4.1	3.4	135	4.1	4.0	85	4.0	4.4
36	6 x 6	200	4.0	3.5	135	3.9	3.9	85	4.0	4.3
24	3 x 8	190	3.9	3.6	135	3.8	4.1	85	3.8	4.6
48	6 x 8	195	4.1	3.5	140	4.0	4.1	90	4.1	4.5
24	2 x 12	180	3.9	3.4	130	4.0	3.9	80	3.9	4.2
48	4 x 12	185	4.1	3.3	130	4.0	3.8	80	3.9	4.2
72	6 x 12	185	4.1	3.3	130	4.1	3.8	80	4.0	4.1
96	8 x 12	170	4.5	3.1	130	4.5	3.6	85	4.5	4.1
144	12 x 12	155	5.6	2.8	125	5.5	3.2	85	5.5	3.7
144	6 x 24	200	5.4	3.1	150	5.4	3.6	100	5.4	4.1
192	8 x 24	155	5.1	2.9	125	5.2	3.3	85	5.2	3.8
216	9 x 24	170	6.3	2.8	140	6.3	3.2	95	6.2	3.7

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

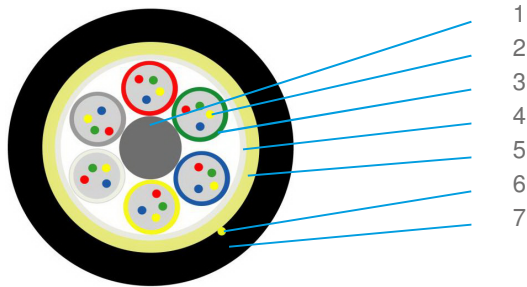


# TECHNICAL PRODUCT INFORMATION

## 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