



## CTMC Eca 12x SM G.657.A1 (1x12)

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### Product characteristics

Cable type	CTMC
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibers	12
Number of fibers per optical element	12
Number of cores	1
Optical element	Loose tube, gel filled
Cable metal free	Yes
Stripability optical element	> 1000 mm, down to primary coating
Strain relief	Yes
Type of strain relief	Aramid fibre
Material outer sheath	LSZH
Colour outer sheath	Black
Outer sheath thickness	0,25 mm
Outer diameter approx.	4,7 mm
Marking	EUROFIBER - TKF CTMC Eca 12x SM G.657.A1 (1x12) A-DQ(ZN)H 74930 {Batch} [-CE-] DOP0061 {Year} {Length}



## Application

Standardization	EN IEC 60794-2
Test procedures	EN IEC 60794-1-2
Application	Inside
Blow in	Yes
Euro fire class according to EN 13501-6	Eca

## Mechanical specification

Tensile load short term (Tm)	600 N
Cable strain by Tm	0,6 %
Max. fiber strain at Tm	0,5 %
Tensile load Long Term (Tl)	150 N
Min. bending radius during installation	55 mm
Min. bending radius after installation	45 mm
Crush resistance acc. meth.E3A	1500 N/dm
Crush resistance acc. meth.E3B	350 N/dm
Mandrel diameter by Crush meth. E3B	25 mm
Impact strength	3 J
Striking surface radius	10 mm
Torsion resistance	1800 °/m
Kink resistance	40 mm

## Optical specification

Category according to EN 50173	OS2
Max. attenuation @ 1310 nm	0,38 dB/km
Max. attenuation @ 1550 nm	0,25 dB/km
Max. attenuation @ 1625 nm	0,28 dB/km
Bending radius fiber (1 turn acc. to ITU rec.)	30 mm



## Environmental specification

Installation temperature	-10/50 °C
Transportation and storage temperature	-30/70 °C
Operational temperature range Ta1 - Tb1	-30/70 °C
Operational temperature range Ta2 - Tb2	-40/70 °C
Max. attenuation increase during Ta2 - Tb2	0,15 dB
TC sample length for TC acc. F1 or F12	1000 m
UV resistant	Yes

## Other specification

Halogen free (acc. EN 60754-1/2)	Yes
Vertical flame propagation (for single cable)	IEC 60332-1-2 / EN 50265-2-1

## Logistical specifications

Unit	meter
Weight (kg)	0.022
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 $\mu\text{m}$ 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>Q</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