



## CTC Eca

# 24x SM G.657.A1 (1x24)

Article number: 75546

Date: 22-05-2023

The Central Tube Cable Low Smoke Zero Halogen (CTC Eca) is a light-weight, non-metallic, universal central tube cable (indoor/outdoor) with small diameter, rodent protected, longitudinal water-protected, with Low Smoke Zero Halogen outersheath. Installation: by blowing or pulling, into conduits or on cable trays.

CTC Eca  
24x SM G.657.A1 (1x24)



### Product characteristics

Cable type	CTC
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibers	24
Number of fibers per optical element	24
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	E-glass
Material outer sheath	LSZH
Colour outer sheath	Black
Outer sheath thickness	1,2 mm



Outer diameter approx.	7,2 mm
Marking	ACE - TKF CTC Eca 24x SM G.657.A1 (1x24) U-DQ(ZN)BH 75546 {Batch} [-CE-] DOP0039 {Year} {Length}

## Application

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

## Mechanical specification

Tensile load short term (Tm)	1600 N
Cable strain by Tm	0,6 %
Max. fiber strain at Tm	0,6 %
Tensile load Long Term (TI)	400 N
Max. fiber strain at TI	0,2 %
Impact strength	10 J
Min. bending radius during installation	150 mm
Min. bending radius after installation	110 mm
Crush resistance E3A short (1min)	3500 N/dm
Crush resistance E3A long	2000 N/dm
Crush load E3A long application time	10 min
Crush resistance E3B short term (1min)	2000 N/dm
Crush resistance E3B long term	600 N/dm
Crush load E3B long application time	10 min
Mandrel diameter by Crush meth. E3B	300 mm
Striking surface radius	300 mm
Torsion resistance	1800 °/m
Kink resistance	100 mm

## Optical specification

Category according to EN 50173	OS2
Max. attenuation @ 1310 nm	0,38 dB/km
Max. attenuation @ 1550 nm	0,22 dB/km
Max. attenuation @ 1625 nm	0,25 dB/km



## Environmental specification

Longitudinal water blocking	Yes
Longitudinal watertight construction	Super Absorbing Polymer
Cable longitudinally watertight	Yes
Radial water blocking	No
Radial water blocking cable	No
Installation temperature	-15/50 °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
TC sample length for TC acc. F1 or F12	1000 m
UV resistant	Yes
UV-protection	ISO 4892-2, 4000h
Color fastness	Blue wool scale 8
With rodent protection	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
Netto Weight (kg/m)	0.051
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 <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/√km
Max. attenuation at 1383 nm (α <sub>1383</sub> ) [note a]	< max. α <sub>1310</sub>	-
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	-

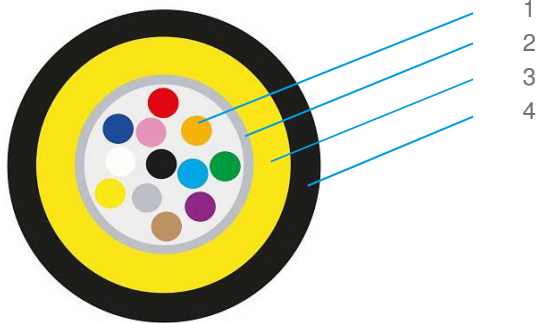
note a: after hydrogen ageing

## TECHNICAL PRODUCT INFORMATION

### Cable construction and colour code

#### CTC Eca

FO cable with central tube



#### Description

- 1 Optical fibres
- 2 Central tube with fibres
- 3 Reinforcement of glass yarns
- 4 Outer sheath

#### Standard colours

##### Fibres

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

note +t: indicates a black tracer



# DECLARATION OF PERFORMANCE (DOP) CE

Nr. DoP0039

1. Unique identification code for the product type:  
**See appendix 1 (page 2/2)**
2. Intended use of the construction product:  
**Supply of optical fibre cables in buildings and other civil engineering works with the objective of limiting the generation and spread of fire and smoke.**
3. Manufacturer:  
**TKF (B.V. Twentsche Kabelfabriek)  
Spinnerstraat 15  
7481 KJ Haaksbergen  
Netherlands  
Tel.: +31(0)53 573 22 55  
E-mail: info@tkf.nl**
4. System of assessment and verification of constancy of performance of the construction product asset out in CPR, Annex V: **System 3**
5. Notified body: **SP NB 0402**
6. Declared performance:

Essential characteristics	Performance	Harmonized technical specification
Reaction to fire	Eca	EN50575:2014/A1:2016
Dangerous substances	NPD	(EC) No 1907/2006, (REACH)

7. The performance of the product identified is in conformity with the declared performance.  
  
This declaration of performance is issued under the sole responsibility of the manufacturer identified in this document.

Signed for and on behalf of the manufacturer by:

H. Woldhuis  
R&D Manager Optical Fibre Cables

Haaksbergen, March 17<sup>th</sup> 2023

Signature



Nr. DoP0039



Appendix 1

Product type	Number of tubes	Number of fibres
CTC Eca	1	1 - 24
CTAC Eca	1	1 - 24