



Fibre optic cable

DAC

Article number: 75098

21-02-2025

Description

2x SM G.657.A1

The Direct Access Cable (DAC) is a light-weight, non-metallic, central tube direct-buried Access cable with low bend radius, no waterpeak G.657.A1 fibres, with small diameter for easy installation, longitudinally water-protected. This cable has a very high crush resistance and tensile strenght, is fast strippable (over >4 meter in one stroke). Due to extra strenght-members in the cable outersheath, this central tube design has an improved temperature range. Installation: direct burial application. Also blowable in (mini)tubes over a limited distance.



* This image may differ from the actual product.

Trading information

Product group	Fibre optic cable
Type	DAC
Net. Weight	0.027 kg/m
Sheath marking	ACE - TKF DAC 2x SM G.657.A1 (1x2) A-DQ(ZN)9Y 75098 {Batch} {Year} {Length}

Trade unit (length or pieces)

Minimal order

	(75098 / 8713182095161)	1 MTR
Reel à 6000	(75098H X 6000/300 / 8713182472610)	1 PCE

Mechanical specification

Max. fiber strain at Tm	0.6 %
Tensile load long term (TI)	360 N
Max. fibre elongation at TI	0.2 %



DECLARATION OF PERFORMANCE (DOP)

Nr. DoP0084

1. Unique identification code for the product type:
This declaration concerns all optical fibre cables which are not tested for CPR rating.
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 as set out in CPR, Annex V: **System 4**
5. Notified body: N.A.
6. Declared performance:

Essential characteristics	Performance	Harmonized technical specification
Reaction to fire	Fca	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, September 20th 2023

Signature



Fibre specification G.657.A1 - 200µm

ACE-DS-OT-VSP-SM-G657A1-200µm-v04-e

date : 12-07-2024

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 Reduced coating diameter 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 ± 0.4	µm
Mode field diameter: 1550 nm	10.2 ± 0.5	µm
Core non-circularity	max. 6	%
Core/cladding concentricity error	max. 0.5	µm
Cladding diameter	125.0 ± 0.7	µm
Cladding non-circularity	max. 0.7	%
Coating diameter	198 ± 6	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. 0.25	dB
Bending sensitivity - 10 turns around Ø30 mm - 1625 nm	max. 1.0	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 - 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/√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

Product characteristics - optical fibres

20-12-2024

Fibre specification G.657.A1

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 $\varnothing 50$ 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 ² ·km
Chromatic dispersion: 1285 - 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/ $\sqrt{\text{km}}$
PMD ₀	max.	0.04	ps/ $\sqrt{\text{km}}$
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	-

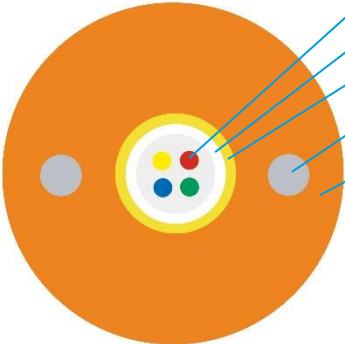
[note a: after hydrogen ageing]

TECHNICAL PRODUCT INFORMATION

Cable construction and colour code

13-12-2023

DAC

Cross section image	Description
	Optical fibres
	Gel-filled central tube
	Water blocking aramid yarns
	Embedded strength element (GFRP)
	Outer sheath

Standard Colours

Fibres		Tubes			
Group 1		Group 2		Layer 1	Layer 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