

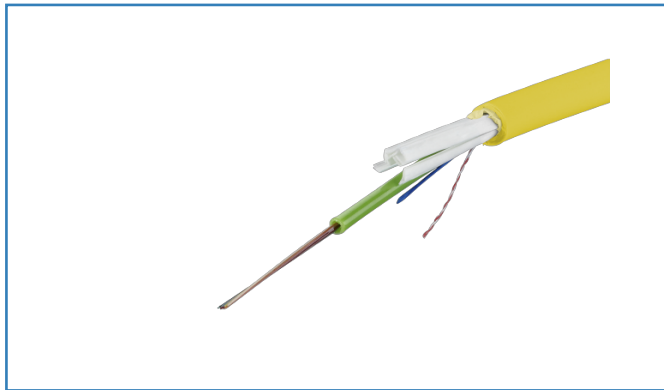
Data sheet

OpDAT universal cable 1x4 OS2 - bend insensitive, class E_{ca}

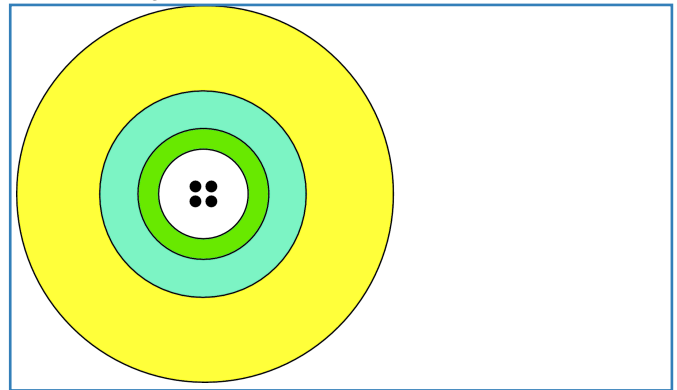
P/N
 150U04900000M
 EAN 4250184172390

2018-27-02

Illustrations



Principle diagram



See enlarged drawings at the end of document



Product specification

- installation cable U-DQ(ZN)BH
- universal fiber optic cable for indoors/outdoors with central or stranded loose tube
- bend insensitive fiber
- UV-resistant, metal-free, longitudinally waterproof, tensile strength and rodent repellent
- cable jacket: LSHF
- cable structure: filled loose tubes
- cable diameter for central loose tube 7.5 mm with 2 to 12 fibers per loose tube
- cable diameter for central loose tube 8.0 mm with 24 fibers per loose tube
- cable diameter with stranded loose tube 11.0 mm
- strain relief: longitudinally waterproof wrapping, glass roving elements
- stranded loose tubes: loose tubes grouped around a glass fiber reinforced plastic stick with a dia. of 2.5 mm
- for laying in ducts or directly in the ground in a suitable layer of sand
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-1, EN 187000
- fire behaviour: Class E_{ca}(classification acc. to EN 13501-6)

Variants:

Number of OS2 fibers 1x4, 1x8, 1x12, 1x24, 4x12

Technical Data

General Data

Fields of application	Structured building cabling, Office Data center
Design	Installation cables
Transmission technology	Fiber optic
Color	yellow
Color coding fiber/ wire(s)	see table
Mode type of the fiber	Single mode
Fiber class	OS2 (IEC 60793-2-50 B6_a, B6_b & ITU-T G.657.A2, G.657.B2, G.652.D)
Number of cables/ cores	1
Number of fibres each cable/ wire	4
Fiber construction	9/125 µm
Weight	55.00 kg/km

Connections/interfaces

Connector technology interface 1	Free line end
Connector technology interface 2	Free line end
Cable sheath diameter (min. - max.)	
Cable sheath diameter	7.50 mm
Cable sheath diameter	0.295 in.

Optical characteristics

Attenuation of the fiber	
Attenuation of the fiber in the cable at 1310 nm	0.38 dB/km
Attenuation of the fiber in the cable at 1550 nm	0.23 dB/km
Attenuation of the fiber in the cable at 1625 nm	0.25 dB/km

Mechanical characteristics

strain relief	longitudinally waterproof wrapping, glass roving elements
Maximum installation load (max.)	1500 N
Maximum installation load	60.00 mm
Maximum installation load	2.362 in.
Impact resistance	20 J
Crush (compressive strength)	2000 N
Fire load	1100 MJ/km



Technical Data

Materials and material properties

Material - Cable jacket	LSHF
Bend insensitivity	yes
Tensile strength	yes
Rodent protection	yes
Flame retardancy	yes
Halogen free	yes
Metallfrei	yes
UV-resistance	yes
Longitudinal water tightness	pass, no water on free end

Environmental conditions

Temperature (min. - max.)	
Temperature - Storage °C	-40 - 60 °C
Temperature - Storage °F	-40 - 140 °F
Temperature - Operating °C	-30 - 70 °C
Temperature - Operating °F	-22 - 158 °F
Temperature - Installation °C	-15 - 40 °C
Temperature - Installation °F	5 - 104 °F

Approvals

RoHS	compliant
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The product meets the following standards

Generic cabling systems	
General requirements	ISO/IEC 11801
Optical fibers: Generic specification	
Cross reference table for optical cable test procedures	ISO/IEC 60794-1-2
Optical fibers: Indoor optical cables	
Sectional specification for class B single-mode fibres	ISO/IEC 60793-2-50 type B6_a/B6_b
Test on gases evolved during combustion of materials from cables	
Determination of the halogen acid gas content	IEC 60754-1
Determination of acidity (by measuring the pH value) and conductivity	IEC 60754-2

Technical Data

The product meets the following standards

Tests on electric and optical fibre cables under fire conditions

Test for vertical flame propagation for a single insulated wire or cable	ISO/IEC 60332-1-2
Measurement of smoke density of cables burning	ISO/IEC 61034-2
Common test methods for cables under fire conditions	
Fire behaviour - class	 Klasse E _{ca} (Klassifizierung nach EN 13501-6)
Standard colours for insulation for low-frequency cables & wires	IEC 60304
ITU-T standard	ITU-T G.657.A2 and G.657.B2, compatible with ITU-T G.652.D

Classifications

ETIM 5.0	EC000034
ETIM 6.0	EC000034

Packing details

Type of packaging	2000 meter / drum
Packaging dimension (W x H x D)	850.00 x 700.00 x 850.00 mm
Packaging dimension (W x H x D)	33.465 x 27.559 x 33.465 in.



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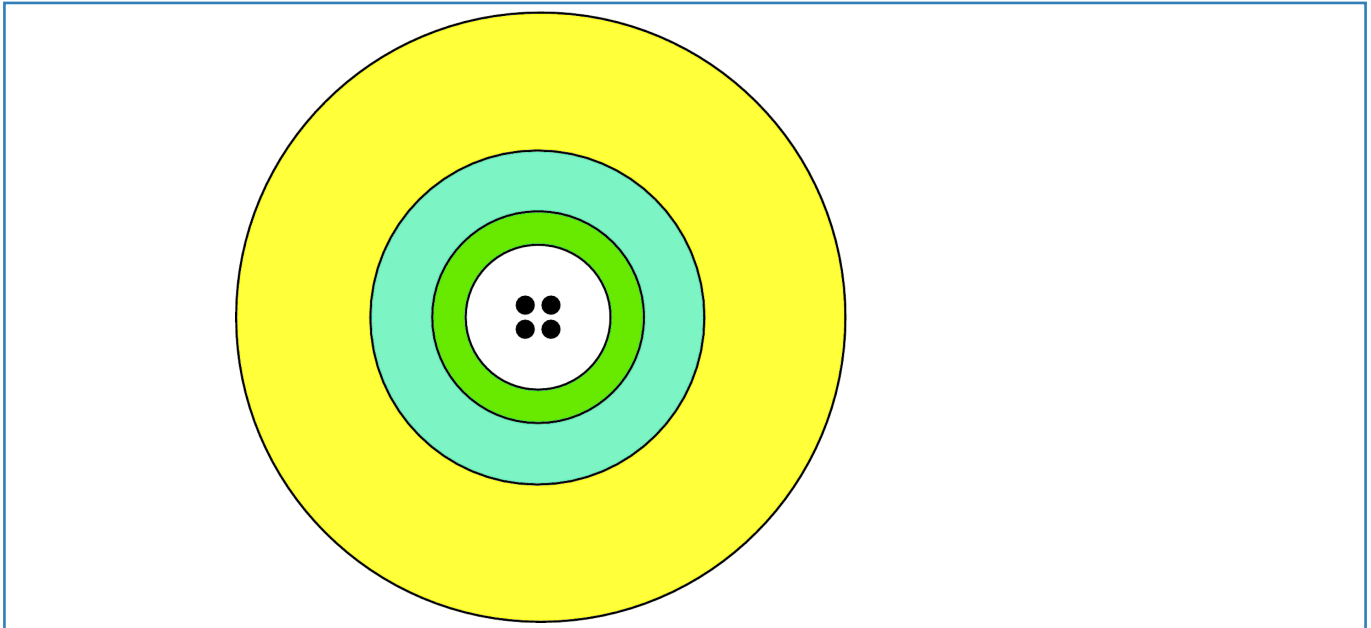
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Fiber color coding

Fiber color code		
	1	red
	2	green
	3	blue
	4	yellow



Technical Data

General Data

Transmission technology	Fiber optic
Mode type of the fiber	Single mode
Fiber class	OS2 (IEC 60793-2-50 B.1.3, B6_b & ITU-T G.657.A2, G.657.B2, G.652.D)
Fiber construction	9/125 µm

Transmission characteristics

Chromatic dispersion coefficient	
Chromatic dispersion coefficient - In the interval 1285 nm - 1330 nm (max.)	max. 3.7 ps/km * nm
Chromatic dispersion coefficient - At 1550 nm (max.)	max. 18.5 ps/km * nm
Chromatic dispersion coefficient - At 1625 nm (max.)	max. 23.0 ps/km * nm
Dispersionsnulldurchgang, λ_{D0}	1300-1324 nm
Zero dispersion slope (max.)	0.092 ps/(nm ² * km)
Polarisation mode dispersion (PMD) coefficient, cabled (min.)	0.1
PMDQ Link Design Value (min.)	0.06 ps/vkm
Threshold wavelength (max.)	1260

Connections/interfaces

Connector technology interface 1	Free line end
Connector technology interface 2	Free line end
Core-/ Fiber cladding diameter	125.0 ± 0.7 µm
Primary coating diameter - colored	242 ± 7 µm

Optical characteristics

Attenuation of the fiber	
Attenuation of the fiber in the cable at 1310 nm	max. 0.38 dB/km
Attenuation of the fiber in the cable at 1383 nm	max. 0.38 dB/km
Attenuation of the fiber in the cable at 1550 nm	max. 0.23 dB/km
Attenuation of the fiber in the cable at 1625 nm	max. 0.25 dB/km

Mechanical characteristics

Proof stress level	min. 0.7 (~ 1 %) GPa
Strip force (peak)	1.2 ≤ F _{peak.strip} ≤ 8.9 N
10 turns on a mandrel R= 15 mm, @ 1550 nm	0.03 dB



Technical Data

Mechanical characteristics

10 turns on a mandrel R= 15 mm, @ 1625 nm	0.1 dB
1 turn on a mandrel R= 10 mm, @ 1550 nm	0.1 dB
1 turn on a mandrel R= 10 mm, @ 1625 nm	0.2 dB
1 turn on a mandrel R= 7.5 mm, @ 1550 nm	0.5 dB
1 turn on a mandrel R= 7.5 mm, @ 1625 nm	1.0 dB
Fiber cladding non-circularity	max. 0.7 %
Core (MDF)-cladding concentricity error	max. 0.5 µm
Primary coating concentricity error	max. 5 %
Primary coating-cladding concentricity error	max. 12
Inhomogeneity of OTDR measurement report at 1310 nm und 1550 nm	max. 0.1 dB/km
Group refractive index	
Group refractive index at 1310 nm	1.467
Group refractive index at 1550 nm and 1625 nm	1.468

The product meets the following standards

Generic cabling systems	
General requirements	ISO/IEC 11801 DIN EN 50173-1 : 2007 cat. OS2
Optical fibers: Measuring methods and test procedures	
Fibre geometry	ISO/IEC 60793-1-20
Coating geometry	ISO/IEC 60793-1-21
Length measurement	ISO/IEC 60793-1-22
Fibre proof test	ISO/IEC 60793-1-30
Coating strippability	ISO/IEC 60793-1-32
Attenuation	ISO/IEC 60793-1-40
Chromatic dispersion	ISO/IEC 60793-1-42
Threshold wavelength	ISO/IEC 60793-1-44
Mode field diameter	ISO/IEC 60793-1-45
Macrobending loss	ISO/IEC 60793-1-47
Polarization mode dispersion	ISO/IEC 60793-1-48
Optical fibers: Indoor optical cables	
Sectional specification for class B single-mode fibres	ISO/IEC 60793-2-50 type B6_a/B6_b



Technical Data

The product meets the following standards

Optical fibers: Outdoor optical fibre cables

Outdoor cables

ISO/IEC 60794-3

ITU-T standard

G.657.A2, G.652.B2, G.652.A, B, C, D

