

Data sheet

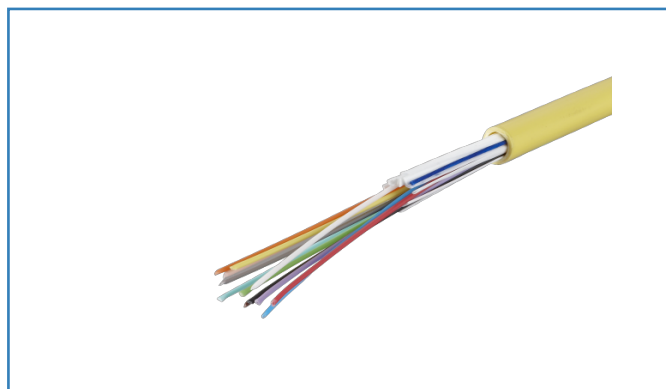
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OpDAT mini breakout cable 12x1 OS2 - bend insensitive, class D_{ca} s1 d0 a1

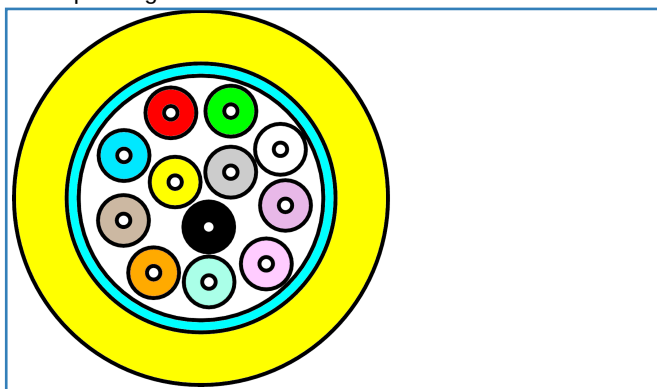
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150M12900000M
EAN 4250184145455

2018-09-01

Illustrations



Principle diagram



See enlarged drawings at the end of document



Product specification

- mini-breakout installation cable U-VQ(ZN)H
- bend insensitive fiber
- UV-resistant, metal-free, waterproof and moisture-resistant
- longitudinally water blocked and suitable for operation down to -40 °C
- cable sheath: LSHF-FR (low smoke halogen free - flame retardant)
- cable structure: 4, 12 or 24 tight buffered fibers (dia. 0.9 mm)
- strain relief: glasroving elements
- to be laid in tubes and cable ducts indoors and outdoors
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-2, IEC 60794-2-20, EN 187000
- fire behaviour: Class D_{ca} s1 d0 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

variants:

number of OS2 fibers	4, 12 or 24
number of OM5 fibers	4 or 12
number of OM4 fibers	4, 12 or 24
number of OM3 fibers	4 or 24

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Technical Data

General Data

Fields of application

	Structured building cabling, Office Fiber to the Desk, 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)
Cable Type	Mini breakout
Number of cables/ cores	1
Number of fibres each cable/ wire	12
Fiber construction	9/125 µm
Weight	48.00 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	6.90 mm
Cable sheath diameter	0.272 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	glasrooving elements
Maximum installation load (max.)	900 N
Maximum installation load	50.00 mm
Maximum installation load	1.969 in.
Impact resistance	10 J
Crush (compressive strength)	2000 N



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Technical Data

Mechanical characteristics

Fire load	765 MJ/km
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Materials and material properties

Material - Cable jacket	LSHF-FR
Bend insensitivity	yes
Flame retardancy	yes
Halogen free	yes
Metallfrei	yes
UV-resistance	yes
Longitudinal water tightness	yes

Environmental conditions

Temperature (min. - max.)	
Temperature - Storage °C	-40 - 70 °C
Temperature - Storage °F	-40 - 158 °F
Temperature - Operating °C	-40 - 70 °C
Temperature - Operating °F	-40 - 158 °F
Temperature - Installation °C	-20 - 60 °C
Temperature - Installation °F	-4 - 140 °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



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Technical Data

The product meets the following standards

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

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

Test for vertical flame spread of vertically-mounted bunched wires or cables ISO/IEC 60332-3-24

Measurement of smoke density of cables burning ISO/IEC 61034

Common test methods for cables under fire conditions

Fire behaviour - class fire behaviour: Class D_{ca} s1 d0 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

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 1 meter / plastic bag

Packaging dimension (W x H x D) 300.00 x 200.00 x 50.00 mm

Packaging dimension (W x H x D) 11.811 x 7.874 x 1.969 in.



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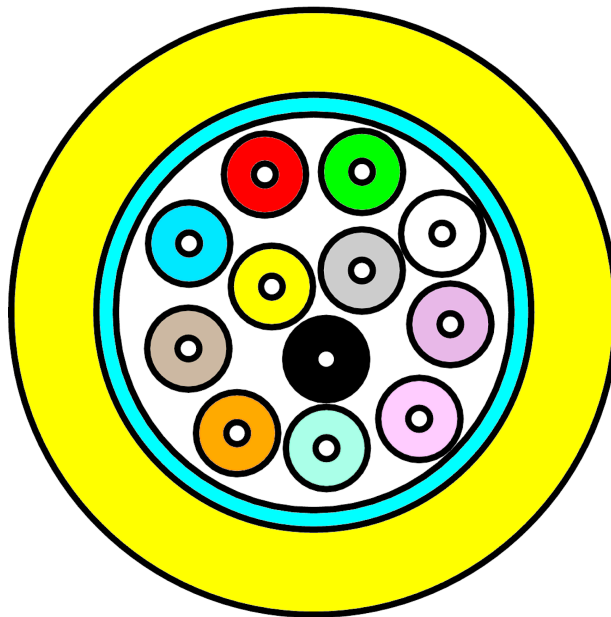
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Illustrations

Principle diagram



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Fiber color coding

Fiber color code		
	1	red
	2	green
	3	blue
	4	yellow
	5	white
	6	grey
	7	brown
	8	violet
	9	turquoise
	10	black
	11	orange
	12	pink



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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 \text{ ps/km} \cdot \text{nm}$
Chromatic dispersion coefficient - At 1550 nm (max.)	max. $18.5 \text{ ps/km} \cdot \text{nm}$
Chromatic dispersion coefficient - At 1625 nm (max.)	max. $23.0 \text{ ps/km} \cdot \text{nm}$
Dispersion null wavelength, λ_{D0}	1300-1324 nm
Zero dispersion slope (max.)	$0.092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$
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	$125.0 \pm 0.7 \mu\text{m}$
Primary coating diameter - colored	$242 \pm 7 \mu\text{m}$

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. $0.7 (\sim 1 \%) \text{ GPa}$
Strip force (peak)	$1.2 \leq F_{\text{peak.strip}} \leq 8.9 \text{ N}$
10 turns on a mandrel $R = 15 \text{ mm}$, @ 1550 nm	0.03 dB

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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



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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

Packing details

Type of packaging 0

Packaging dimension (W x H x D) 0.00 x 0.00 x 0.00 mm

