

Data sheet

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OpDAT universal cable 1x12 OM5 - bend insensitive, class E_{ca}

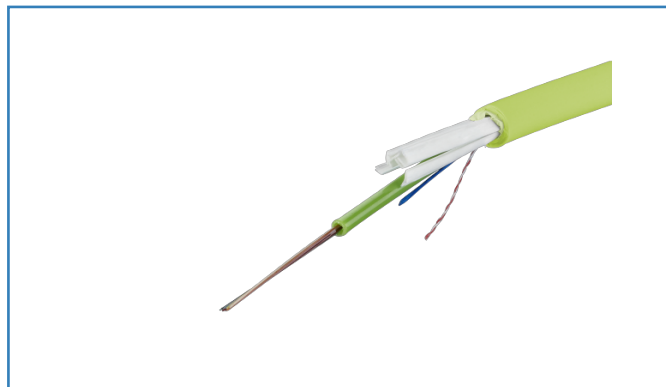
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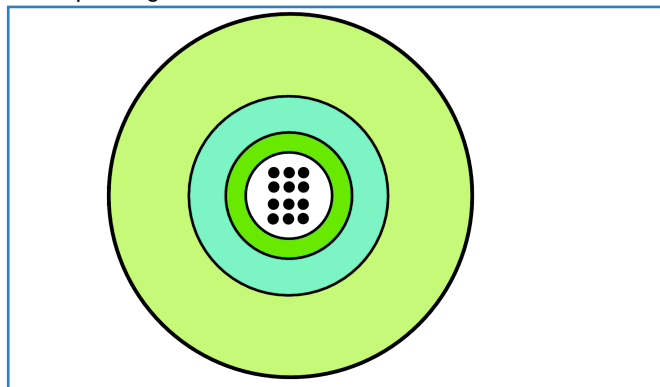
EAN 4251394602394

2018-23-02

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)

Variant:

Number of OM5 fibers	1x4, 1x8, 1x12, 1x24, 4x12
Number of OM4 fibers	1x4, 1x8, 1x12, 1x24, 4x12
Number of OM3 fibers	1x4, 1x8, 1x12, 1x24, 4x12
Number of OM2 fibers	1x4, 1x8, 1x12



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General Data

Fields of application

	Structured building cabling, Office Data center
Design	installation cable
Transmission technology	Fiber optic
Color	lime green
Color coding fiber/ wire(s)	see table
Mode type of the fiber	Multimode
Fiber class	OM5 (ISO/IEC 11801/EN 50173 & IEC 60793-2-10/EN 60793-2-10 A1.a.4)
Number of cables/ cores	1
Number of fibres each cable/ wire	12
Fiber construction	50/125 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	0.276 in.

Optical characteristics

Attenuation of the fiber	
Attenuation of the fiber in the cable at 850 nm	max. 3.0 dB/km
Attenuation of the fiber in the cable at 953 nm	max. 2.3 dB/km
Attenuation of the fiber in the cable at 1300 nm	max. 1.0 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
Torsion resistance	5 cycles ± 1 revolution



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Technical Data

Mechanical characteristics

Fire load	1100 MJ/km
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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 cat. OM5 TIA/EIA 568-C
Data centers	ISO/IEC 24764



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Technical Data

The product meets the following standards

Optical fibers: Product specifications

Sectional specification for category A1 multimode fibres ISO/IEC 60793-2-10 (A1a.4)

Optical fibers: Generic specification

General ISO/IEC 60794-1

Cross reference table for optical cable test procedures ISO/IEC 60794-1-2

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

Measurement of smoke density of cables burning

ISO/IEC 61034-2

Common test methods for cables under fire conditions

Fire behaviour - class fire behaviour: Class E_{ca} (classification acc. to EN 13501-6)

Standard colours for insulation for low-frequency cables & wires

IEC 60304

ITU-T standard

G.651.1

TIA/ANSI-492

AAAE

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.



P | Cabling

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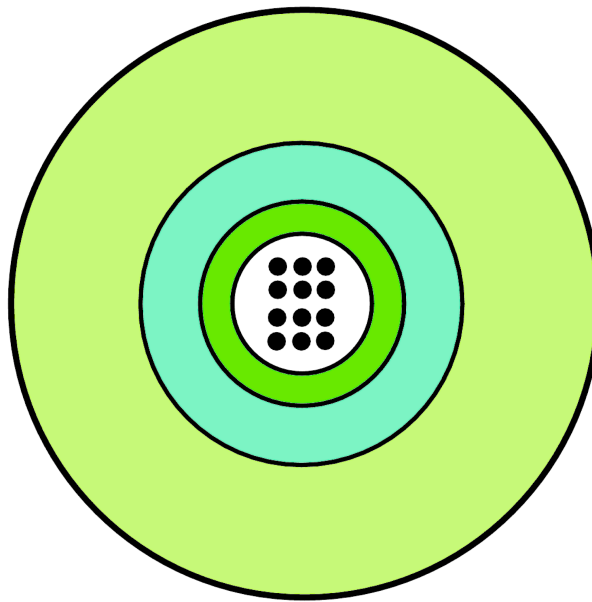
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Fiber color coding

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



Technical Data

General Data

Transmission technology	Fiber optic
Mode type of the fiber	Multimode
Fiber class	OM5 (ISO/IEC 11801/EN 50173 & IEC 60793-2-10/EN 60793-2-10 A1.a.4)
Fiber construction	50/125 µm

Transmission characteristics

Reach	
Reach 1000BASE SX	1100 m
Reichweite 10GBASE SR	550 m
Reach 40GBASE SR4	190 m
Reichweite 100GBASE SR4	100 m
Reichweite 100GBASE SR10	190 m
Overfilled (OFL) modal bandwidth at 850 nm (min.)	3500 MHz * km
Overfilled (OFL) modal bandwidth at 953 nm (min.)	1850 MHz * km
Overfilled (OFL) modal bandwidth at 1300 nm (min.)	500 MHz * km
Effective modal bandwidth (EMB) at 850 nm (min.)	4700 MHz * km
EMB-Wert bei 953 nm	2470 MHz * km

Connections/interfaces

Connector technology interface 1	Free line end
Connector technology interface 2	Free line end
Fiber core diameter	50 ± 2.5 µm
Core-/ Fiber cladding diameter	125.0 ± 1.0 µm
Primary coating diameter - colored	250 ± 15 µm
Primary coating diameter - uncolored	242 ± 7 µm

Optical characteristics

Attenuation of the fiber	
Attenuation of the fiber in the cable at 850 nm	max. 2.5 dB/km
Attenuation of the fiber in the cable at 953 nm	max. 1.8 dB/km
Attenuation of the fiber in the cable at 1300 nm	max. 0.7 dB/km
Maximum value of cable attenuation at 850 nm	3.0 dB/km
Maximum value of cable attenuation at 953 nm	2.3 dB/km
Maximum value of cable attenuation at 1300 nm	1.0 dB/km



Technical Data

Mechanical characteristics	
Proof stress level	min. 0.7 (1%) GPa
Typische durchschnittliche Abziehkraft	min. 1.0 - max. 3.0 N
Strip force (peak)	min. 1.3 - max. 8.9 N
Biegeverlust	
Dornradius = 7.5 mm, 2 Umdrehungen bei 850/1300 nm	min. 0.2 - max 0.5 dB
Dornradius = 15 mm, 2 Umdrehungen bei 850/1300 nm	min. 0.1 - max 0.3 dB
Fiber cladding non-circularity	max. 0.7 %
Core non-circularity	max. 5 %
Core (MDF)-cladding concentricity error	max. 1 µm
Primary coating concentricity error	max. 5 %
Primary coating-cladding concentricity error	max. 10
Group refractive index	
Gruppen-Brechungsindex bei 850 nm	1.482
Gruppen-Brechungsindex bei 1300 nm	1.477
Numerical aperture	0.200 ± 0.015

Approvals

RoHS	compliant
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The product meets the following standards

Generic cabling systems	
General requirements	ISO/IEC 11801 cat. OM5 TIA/EIA 568-C
Data centers	ISO/IEC 24764
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
Attenuation	ISO/IEC 60793-1-40
Bandbreite	ISO/IEC 60793-1-41
Numerical aperture	ISO/IEC 60793-1-43
Gruppenlaufzeitdifferenz	ISO/IEC 60793-1-49



Technical Data

The product meets the following standards

Optical fibers: Product specifications

Sectional specification for category A1 multimode fibres ISO/IEC 60793-2-10 (A1a.4)

ITU-T standard G.651.1

TIA/ANSI-492 AAAE

