

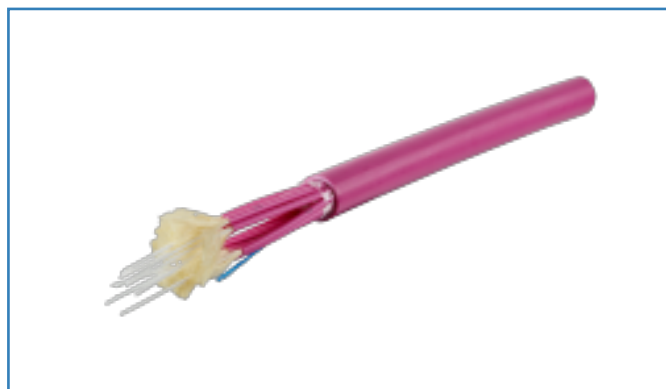
Data sheet

OpDAT breakout cable 12x1 OM4 - bend insensitive, class D_{ca} s1 d1 a1

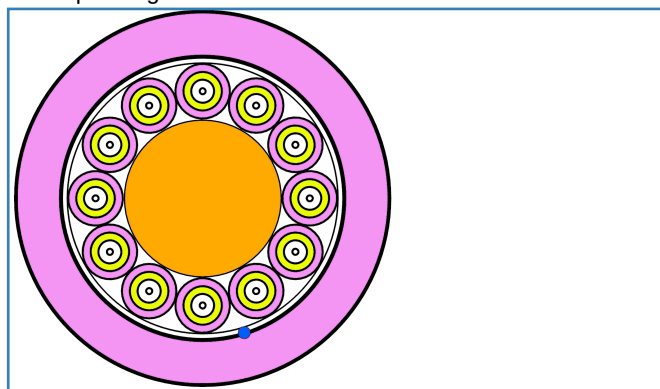
P/N
150B12700000M
EAN 4250184197911

2018-13-03

Illustrations



Principle diagram



See enlarged drawings at the end of document



Product specification

- connection cable I-V(ZN)HH
- breakout cable for direct connector termination for indoors and outdoors
- bend insensitive fiber
- cable jacket: LSHF-FR
- UV resistant, metal-free, longitudinally watertight
- cable structure: several separately strain relieved cables in one outer jacket
- strain relief: Aramid
- applicable standards: EN 50173-1, ISO 11801 2nd edition, IEC 60794-2, IEC 60794-2-10, EN 187000
- fire behaviour: class D_{ca} s1 d1 a1 acc. to EN 50399 (Klassifizierung nach EN 13501-6)

Variants:

Number of OS2 fibers	4x1, 8x1, 12x1, 24x1
Number of OM5 fibers	4x1, 8x1, 12x1
Number of OM4 fibers	2x1, 4x1, 8x1, 12x1, 24x1
Number of OM3 fibers	4x1, 8x1, 12x1, 24x1

Data sheet

Page 2/9

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Technical Data

General Data

Fields of application

	Structured building cabling, Office Fiber to the Desk, yes, Data center breakout cable
Design	Fiber optic
Transmission technology	violett
Color	Multimode
Mode type of the fiber	OM4 (ISO/IEC 11801/EN 50173 & IEC 60793-2-10/EN 60793-2-10 A1.a.3)
Fiber class	Breakout
Cable Type	1
Number of cables/ cores	12
Number of fibres each cable/ wire	50/125 µm
Fiber construction	160.00 kg/km
Weight	

Connections/interfaces

Connector technology interface 1	Free line end
Connector technology interface 2	Free line end
Cable sheath diameter (min. - max.)	
Cable sheath diameter	12.50 mm
Cable sheath diameter	0.492 in.

Optical characteristics

Attenuation of the fiber	
Attenuation of the fiber in the cable at 850 nm	3.0 dB/km
Attenuation of the fiber in the cable at 953 nm	2.3 dB/km
Attenuation of the fiber in the cable at 1300 nm	1.0 dB/km

Mechanical characteristics

strain relief	aramide fibres
Permanent tensile strength	1150 N
Short term tensile strength	2300 N
Maximum installation load (max.)	3500 N
Maximum installation load	150.00 mm
Maximum installation load	5.906 in.
Maximum operating bending radius	250.00 mm



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Page 3/9

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Technical Data

Mechanical characteristics

Maximum operating bending radius	9.843 in.
Impact resistance	20 J
Crush (compressive strength)	1500 N
Fire load	2500 MJ/km

Materials and material properties

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

Environmental conditions

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

Approvals

RoHS	compliant
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The product meets the following standards

Generic cabling systems	
General requirements	ISO/IEC 11801 Ed.2 DIN EN 50173-1
Optical fibers: Product specifications	
Sectional specification for category A1 multimode fibres	ISO/IEC 60793-2-10 (A1a.3)



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The product meets the following standards

Optical fibers: Indoor optical cables

Family specification for multi-fibre optical cables ISO/IEC 60794-2-20

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 DIN EN 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 61034-2

Common test methods for cables under fire conditions

Fire behaviour - class fire behaviour: Class D_{ca} s1 d1 a1 acc. to EN 50399 (classification acc. to EN 13501-6)

ITU-T standard G.651.1

Packing details

Type of packaging meter



P | Cabling

Data sheet

Page 5/9

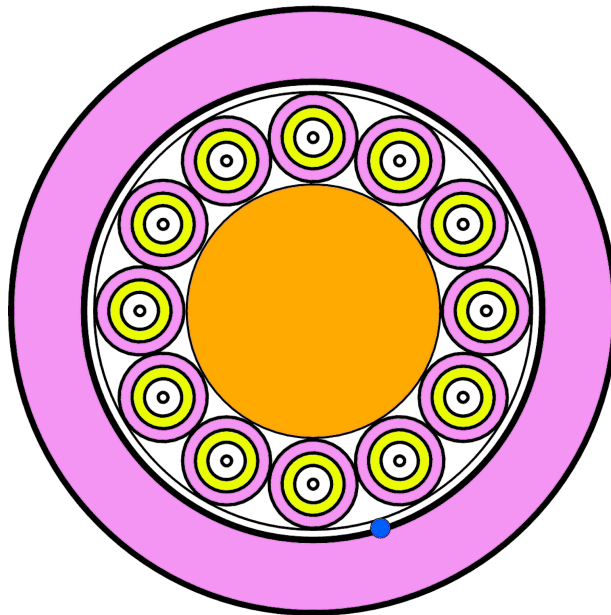
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Fiber color coding

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	OM4 (ISO/IEC 11801/EN 50173 & IEC 60793-2-10/EN 60793-2-10 A1.a.3)
Fiber construction	50/125 µm

Transmission characteristics

Transmission rate up to 10 GBit (Gigabit-Ethernet)	IEEE 802.3an
Transmission rate up to 100 GBit	IEEE 802.3ba
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 1300 nm (min.)	500 MHz * km
Effective modal bandwidth (EMB) at 850 nm (min.)	4700 MHz * km

Connections/interfaces

Connector technology interface 1	Free line end
Connector technology interface 2	Free line end
Fiber core diameter	50 ± 2 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 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 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
Inhomogeneity of OTDR measurement report at 1310 nm und 1550 nm	max. 0.1 dB/km
Group refractive index	
Gruppen-Brechungsindex bei 850 nm	1.482
Gruppen-Brechungsindex bei 1300 nm	1.477
Numerical aperture	0.200 ± 0.015

Materials and material properties	
Bend insensitivity	yes

Approvals	
RoHS	compliant

The product meets the following standards	
Generic cabling systems	
General requirements	ISO/IEC 11801 cat. OM4 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
Fibre proof test	ISO/IEC 60793-1-30
Coating strippability	ISO/IEC 60793-1-32
Attenuation	ISO/IEC 60793-1-40



Technical Data

The product meets the following standards

Optical fibers: Measuring methods and test procedures

Bandbreite	ISO/IEC 60793-1-41
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Numerical aperture	ISO/IEC 60793-1-43
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Gruppenlaufzeitdifferenz	ISO/IEC 60793-1-49
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Optical fibers: Product specifications

Sectional specification for category A1 multimode fibres	ISO/IEC 60793-2-10 (A1a.3)
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ITU-T standard	G.651.1
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TIA/ANSI-492	AAAD
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