

# Data sheet

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## OpDAT universal cable 1x8 OS2 - bend insensitive, class E<sub>ca</sub>

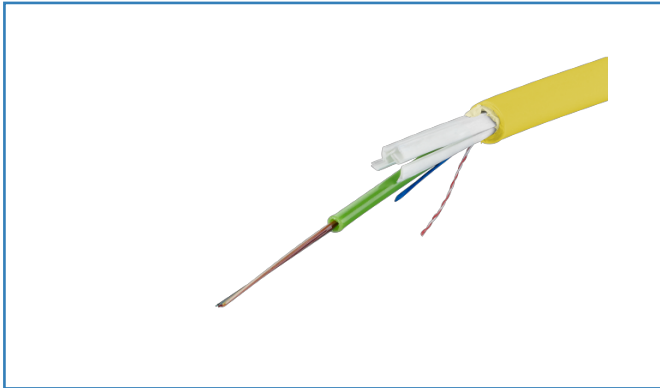
**P/N**

**150U089000000M**

**EAN 4250184175193**

2018-09-01

## Illustrations



## 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<sub>ca</sub> (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<br>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 | 8                                                                   |
| 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               | 0.276 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                                                |



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### 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 |
|------|-----------|

#### 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<sub>ca</sub> (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. |
|---------------------------------|------------------------------|



### Fiber color coding

| Fiber color code |   |        |
|------------------|---|--------|
|                  | 1 | red    |
|                  | 2 | green  |
|                  | 3 | blue   |
|                  | 4 | yellow |
|                  | 5 | white  |
|                  | 6 | grey   |
|                  | 7 | brown  |
|                  | 8 | violet |



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150XXX9

2018-09-01

### 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 $\mu\text{m}$                                                  |

#### 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, $\lambda_{D0}$                                  | 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.)                                               | $0.06 \text{ ps/vkm}$                            |
| 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. $0.38 \text{ dB/km}$ |
| Attenuation of the fiber in the cable at 1383 nm | max. $0.38 \text{ dB/km}$ |
| Attenuation of the fiber in the cable at 1550 nm | max. $0.23 \text{ dB/km}$ |
| Attenuation of the fiber in the cable at 1625 nm | max. $0.25 \text{ dB/km}$ |

#### 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 | $0.03 \text{ dB}$                                   |



### 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

#### Packing details

Type of packaging 0

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

