Fibre optic data cable
U-DQ(ZN)BH 250

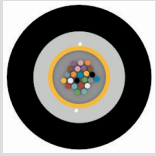
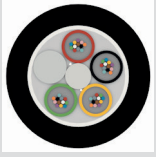
Application: External/internal cable for use in empty conduits (external) and for free installation (internal).

Construction and technical data:

- Loose tube(s) with up to 12 or 24 optical fibres, filled with thixotropic compound
-2x12 and 4x12: Stranded loose tubes, central strength member made of fibre reinforced plastic (FRP); dummies if required; dry cable strand with water blocking materials
- Strength members / metal-free reinforcement: Glass yarns
- Outer sheath: LSZH black

CPR-classification according to EN 50575:	Eca
Standard:	IEC 60793, IEC 60794, IEC 60332-1-2, EN50575, ITU-T, VDE 0888
Colour of outer sheath:	black
Permitted storage and transport temperature:	-30 - +70 °C
Permitted installation temperature:	-10 - +50 °C
Permitted operating temperature:	-20 - +70 °C
Bending radius (under tension):	20 x Ø
Bending radius (without tension):	10 x Ø
Printing method:	ink jet

The products and information presented here are for technical calculation only. They are subject to technical progress and in no way represent the ability of shipment. Outer diameters are approximately.

	4..12 /24 fibres	24 /48 fibres
cross-section		fibres 

U-DQ(ZN)BH nxm G.652D 250µ

Standard:	ITU-T G.652D
Fibre attenuation @1310 nm cabled:	≤0.35 dB/km
Fibre attenuation @1550 nm cabled:	≤0.22 dB/km
Fibre attenuation @1625 nm cabled:	≤0.24 dB/km
Mode field diameter (MFD) @1310 nm:	9.0 ± 0.4 µm
Mode field diameter (MFD) @1550 nm:	10.4 ± 0.6 µm
Zero dispersion wavelength:	1300 ~ 1324 nm
Zero dispersion slope:	≤0.092 ps/nm² * km
Polarisation mode dispersion (PMD):	≤0.2 ps/√km
Cut-off wavelength:	≤1260 nm
Macro bending loss @1550 nm (100 turns Ø50 mm):	≤0.05 dB
Macro bending loss @1625 nm (100 turns Ø50 mm):	≤0.10 dB
Outer diameter (fibre):	245 ± 10 µm
Cladding diameter (fibre):	125 ± 0.7 µm
Core/clad-concentricity error:	≤0.6 µm
Cladding non-circularity:	≤0.7 %
Proof stress:	≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]
071744	U-DQ(ZN)BH 1X4 G.652D 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50
071745	U-DQ(ZN)BH 1X8 G.652D 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50
071746	U-DQ(ZN)BH 1X12 G.652D 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50
071747	U-DQ(ZN)BH 1X24 G.652D 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50
071748	U-DQ(ZN)BH 2X12 G.652D 3 kN Eca BK	24	1.5	10	2400	1500	2	3	2.3	1.8	3000	100
071749	U-DQ(ZN)BH 4X12 G.652D 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100

U-DQ(ZN)BH nxm G.657A1 250µ

Standard:	ITU-T G.657A1
Fibre attenuation @1310 nm cabled:	≤0.36 dB/km
Fibre attenuation @1550 nm cabled:	≤0.22 dB/km
Mode field diameter (MFD) @1310 nm:	8.8 ± 0.4 µm
Mode field diameter (MFD) @1550 nm:	9.9 ± 0.5 µm
Zero dispersion wavelength:	1300 ~ 1324 nm
Zero dispersion slope:	≤0.092 ps/nm² * km
Polarisation mode dispersion (PMD):	≤0.2 ps/√km
Cut-off wavelength:	≤1260 nm
Macro bending loss @1550 nm (10 turns Ø30 mm):	≤0.25 dB
Macro bending loss @1625 nm (10 turns Ø30 mm):	≤1.00 dB
Macro bending loss @1550 nm (1 turn Ø20 mm):	≤0.75 dB
Macro bending loss @1625 nm (1 turn Ø20 mm):	≤1.50 dB
Outer diameter (fibre):	245 ± 10 µm
Cladding diameter (fibre):	125 ± 0.7 µm
Core/clad-concentricity error:	≤0.5 µm
Cladding non-circularity:	≤1.0 %
Proof stress:	≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]
071750	U-DQ(ZN)BH 1X4 G.657A1 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50
071751	U-DQ(ZN)BH 1X8 G.657A1 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50
071752	U-DQ(ZN)BH 1X12 G.657A1 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50
071754	U-DQ(ZN)BH 1X24 G.657A1 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50
071755	U-DQ(ZN)BH 2X12 G.657A1 3 kN Eca BK	24	1.5	10	2400	1500	2	3	2.3	1.8	3000	100
071757	U-DQ(ZN)BH 4X12 G.657A1 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100

U-DQ(ZN)BH nxm G.657A2 250µ

Standard:	ITU-T G.657A2
Fibre attenuation @1310 nm cabled:	≤0.39 dB/km
Fibre attenuation @1550 nm cabled:	≤0.24 dB/km
Mode field diameter (MFD) @1310 nm:	8.8 ± 0.4 µm
Mode field diameter (MFD) @1550 nm:	9.9 ± 0.5 µm
Zero dispersion wavelength:	1300 ~ 1324 nm
Zero dispersion slope:	≤0.092 ps/nm² * km
Polarisation mode dispersion (PMD):	≤0.2 ps/√km
Cut-off wavelength:	≤1260 nm
Macro bending loss @1550 nm (10 turns Ø30 mm):	≤0.03 dB
Macro bending loss @1625 nm (10 turns Ø30 mm):	≤0.10 dB
Macro bending loss @1550 nm (1 turn Ø20 mm):	≤0.10 dB
Macro bending loss @1625 nm (1 turn Ø20 mm):	≤0.20 dB
Macro bending loss @1550 nm (1 turn Ø15 mm):	≤0.50 dB
Macro bending loss @1625 nm (1 turn Ø15 mm):	≤1.00 dB
Outer diameter (fibre):	245 ± 10 µm
Cladding diameter (fibre):	125 ± 0.7 µm
Core/clad-concentricity error:	≤0.5 µm
Cladding non-circularity:	≤1.0 %
Proof stress:	≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	p [N]	G [kg]
071759	U-DQ(ZN)BH 1X4 G.657A2 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8	1500	50
071761	U-DQ(ZN)BH 1X8 G.657A2 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8	1500	50

U-DQ(ZN)BH nxm OM1 250µ

Standard: ITU-T OM1

Fibre attenuation @850 nm (wired): ≤2.8 dB/km

Fibre attenuation @1300 nm (wired): ≤0.7 dB/km

Standard bandwidth @850 nm: 200 MHz*km

Standard bandwidth @1300 nm: 600 MHz*km

Numerical aperture (NA): 0.200 ± 0.015 µm

Outer diameter (fibre): 242 ± 5 µm

Cladding diameter (fibre): 125 ± 1 µm

Core diameter: 62.5 ± 2.5 µm

Core/clad concentricity error: ≤1.0 µm

Core unroundness: ≤5 %

Cladding non-circularity: ≤0.7 %

Proof stress: ≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]	
071739	U-DQ(ZN)BH 1X4 OM1 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071740	U-DQ(ZN)BH 1X8 OM1 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071741	U-DQ(ZN)BH 1X12 OM1 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071742	U-DQ(ZN)BH 1X24 OM1 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071770	U-DQ(ZN)BH 4X12 OM1 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100	multimode

U-DQ(ZN)BH nxm OM2 250µ

Standard: ITU-T OM2

Fibre attenuation @850 nm (wired): ≤2.5 dB/km

Fibre attenuation @1300 nm (wired): ≤0.7 dB/km

Standard bandwidth @850 nm: 500 MHz*km

Standard bandwidth @1300 nm: 500 MHz*km

Numerical aperture (NA): 0.275 ± 0.015 µm

Outer diameter (fibre): 242 ± 5 µm

Cladding diameter (fibre): 125 ± 1 µm

Core diameter: 50 ± 2.5 µm

Core/clad concentricity error: ≤1.0 µm

Core unroundness: ≤5 %

Cladding non-circularity: ≤0.7 %

Proof stress: ≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]	
071753	U-DQ(ZN)BH 1X4 OM2 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071756	U-DQ(ZN)BH 1X8 OM2 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071758	U-DQ(ZN)BH 1X12 OM2 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]	
071760	U-DQ(ZN)BH 1X24 OM2 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071765	U-DQ(ZN)BH 4X12 OM2 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100	multimode

U-DQ(ZN)BH nxm OM3 250µ

Standard: ITU-T OM3

Fibre attenuation @850 nm (wired): ≤2.5 dB/km

Fibre attenuation @1300 nm (wired): ≤0.7 dB/km

Standard bandwidth @850 nm: 1500 MHz*km

Standard bandwidth @1300 nm: 500 MHz*km

Numerical aperture (NA): 0.275 ± 0.015 µm

Outer diameter (fibre): 242 ± 5 µm

Cladding diameter (fibre): 125 ± 1 µm

Core diameter: 50 ± 2.5 µm

Core/clad concentricity error: ≤1.0 µm

Core unroundness: ≤5 %

Cladding non-circularity: ≤0.7 %

Proof stress: ≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]	
071767	U-DQ(ZN)BH 1X4 OM3 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071771	U-DQ(ZN)BH 1X8 OM3 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071772	U-DQ(ZN)BH 1X12 OM3 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071773	U-DQ(ZN)BH 1X24 OM3 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071774	U-DQ(ZN)BH 2X12 OM3 3 kN Eca BK	24	1.5	10	2400	1500	2	3	2.3	1.8	3000	100	multimode
071775	U-DQ(ZN)BH 4X12 OM3 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100	multimode

U-DQ(ZN)BH OM4 EU

Standard:	ITU-T OM4
Fibre attenuation @850 nm (wired):	≤2.5 dB/km
Fibre attenuation @1300 nm (wired):	≤0.7 dB/km
Standard bandwidth @850 nm:	3500 MHz*km
Standard bandwidth @1300 nm:	500 MHz*km
Numerical aperture (NA):	0.275 ± 0.015 µm
Outer diameter (fibre):	242 ± 5 µm
Cladding diameter (fibre):	125 ± 1 µm
Core diameter:	50 ± 2.5 µm
Core/clad concentricity error:	≤1.0 µm
Core unroundness:	≤5 %
Cladding non-circularity:	≤0.7 %
Proof stress:	≥0.69 GPa

part no.	part name	Number of fibres [n]	Wm [mm]	Ø [mm]	Fzv [N]	Fzp [N]	Lt1	Dl1	Ø Lt [mm]	FRP [mm]	p [N]	G [kg]	
071776	U-DQ(ZN)BH 1X4 OM4 1,5 kN Eca BK	4	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071777	U-DQ(ZN)BH 1X8 OM4 1,5 kN Eca BK	8	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071778	U-DQ(ZN)BH 1X12 OM4 1,5 kN Eca BK	12	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071779	U-DQ(ZN)BH 1X24 OM4 1,5 kN Eca BK	24	1.2	6.5	1500	600	1	0	2.8		1500	50	multimode
071780	U-DQ(ZN)BH 2X12 OM4 3 kN Eca BK	24	1.5	10	2400	1500	2	3	2.3	1.8	3000	100	multimode
071781	U-DQ(ZN)BH 4X12 OM4 3 kN Eca BK	48	1.5	10	2400	1500	4	1	2.3	1.8	3000	100	multimode

Number of fibres	Number of fibres
Wm	Wall thickness of sheath
Ø	outer diameter approx.
Fzv	Tensile strength (during installation)
Fzp	Tensile strength (permanent)
Lt1	Loose tubes 1st layer
Dl1	dummies 1st layer
Ø Lt	Loose tube Ø
FRP	Central strength member / FRP
p	Crush resistance
G	net weight per 1000

Farbfolge Fasern / Colour sequence of fibres											
1	2	3	4	5	6	7	8	9	10	11	12
red	green	blue	yellow	white	grey	brown	violet	cyan	black	orange	pink
13	14	15	16	17	18	19	20	21	22	23	24
red	green	blue	yellow	white	grey	brown	violet	cyan	natural	orange	pink

Farbfolge Bündeladern – Variante 1 / Colour sequence of Loose tubes – variant 1														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
red	green	blue	yellow	white	grey	brown	violet	cyan	black	orange	pink	white	white	white
Jede Lage beginnend mit 1; ab der 13. Bündelader weiß; Blindelemente sind naturfarben / Each layer beginning with 1; from the 13th Loose tube white; dummies are natural coloured														

Farbfolge Bündeladern – Variante 2 / Colour sequence of Loose tubes – variant 2														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
red	green	blue	yellow	white	grey	brown	violet	cyan	black	orange	pink	red	green	blue
Jede Lage beginnend mit 1; ab der 13. Bündelader mit Ringsignierung; Blindelemente sind naturfarben / Each layer beginning with 1; from the 13th Loose tube with ring marking; dummies are natural coloured														