



# FIBRE OPTIC CABLES

Product catalogue 2012





# Summary

	<i>page</i>
<b>Introduction &amp; contacts</b>	<b>4</b>
<b>History of the company</b>	<b>5</b>
<b>Specifications &amp; standards</b>	<b>6</b>
<b>Fibre specification</b>	<b>7</b>
<b>KDP Decin coding</b>	<b>8</b>
<b>Fibre and buffer colour coding</b>	<b>9</b>
<b>Rodent protection</b>	<b>9</b>
<b>Simplex cable</b>	<b>10</b>
<b>Duplex cable</b>	<b>11</b>
<b>Heavy-duplex cable</b>	<b>12</b>
<b>Quadplex cable</b>	<b>13</b>
<b>Break-out cable</b>	<b>14</b>
<b>Break-out cable – improved rodent protection</b>	<b>15</b>
<b>Break-out cable</b>	<b>16</b>
<b>Distribution cable – improved rodent protection</b>	<b>17</b>
<b>Distribution cable</b>	<b>18</b>
<b>Military cable</b>	<b>19</b>
<b>Distribution cable – improved rodent protection</b>	<b>20</b>
<b>DROP cable</b>	<b>21</b>
<b>Break-out DROP cable</b>	<b>22</b>
<b>MikroFlex – cable</b>	<b>23</b>
<b>Central loose tube cable – „Lace II“ – microcable</b>	<b>24</b>
<b>Central loose tube cable – standard rodent protection</b>	<b>25</b>
<b>Central loose tube cable – „Beaver II“ – improved rodent protection</b>	<b>26</b>
<b>Central loose tube cable – fibre reinforced plastic rod armoured (FRPA)</b>	<b>27</b>
<b>Central loose tube cable – corrugated steel tape armoured (CST)</b>	<b>28</b>
<b>Central loose tube cable – steel wire armoured (SWA)</b>	<b>29</b>
<b>Multi loose tube cable – Lite</b>	<b>30</b>
<b>Multi loose tube cable – standard rodent protection</b>	<b>31</b>
<b>Multi loose tube cable – improved rodent protection</b>	<b>32</b>
<b>Multi loose tube cable – fibre reinforced plastic rod armoured (FRPA) self-supporting</b>	<b>33</b>
<b>Multi loose tube cable – corrugated steel tape armoured</b>	<b>34</b>
<b>Multi loose tube cable – steel wire armoured (SWA)</b>	<b>35</b>
<b>Multi loose tube cable – mini cable</b>	<b>36</b>
<b>Multi loose tube cable – standard rodent protection, reduced diameter</b>	<b>37</b>
<b>Multi loose tube cable – improved rodent protection, reduced diameter</b>	<b>38</b>
<b>Multi loose tube cable – micro cable</b>	<b>39</b>
<b>Central loose tube self-supporting cable – FIG.8</b>	<b>40</b>
<b>Central loose tube self-supporting cable – FIG.8 – drop</b>	<b>41</b>
<b>Multi loose tube self-supporting cable FIG. 8</b>	<b>42</b>
<b>Loose tube flat cable – self-supporting</b>	<b>43–45</b>
<b>Flat Twin Tube Cable</b>	<b>46</b>
<b>Self-supporting FIG.8 duct</b>	<b>47</b>

## Dear Customers

... **Our cables can solve your problems ...**

**This is a new motto of our company which has been engaged in cable production for many years. Since 1910 we have been supplying the cables which help you to solve your problems through communication. Enclosed, please, find a new comprehensive catalogue containing the basic product line of our company.**

**We tried not only to include the standard products that you probably know very well, but some innovations and brand new products as well. Despite the catalogue is considered as a complete presentation of our production, not all variants can be published and included. For some special products, please, contact our Sales Department that will provide you with any information requested. Let us advice you of the fact that all cable parameters in this catalogue are for information only. All rights reserved.**

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### **SALES**

Phone: +420 412 706 343  
+420 412 706 225  
+420 412 706 390  
+420 412 706 238  
sales@kabelovna.cz

### **TECHNICAL SUPPORT**

Phone: +420 412 706 241  
+420 412 706 362  
+420 412 706 364  
+420 412 706 261

**[www.kabelovna.cz](http://www.kabelovna.cz)**

## Brief overview of KABELOVNA Děčín Podmokly, s. r. o. history

4. 9. 1909	Execution of contract on establishment of company „Rakouské Bergmanovy závody, Berlín, elektrotechnická společnost, s. r. o.“ with branch in Vienna.
27. 6. 1911	Launch of Production – 750 employees. Production of power and communication cables, cable sets and accessories, rubber wires and insulation tubes including accessories.
05/1919	The company was acquired by „Elektrotechnické závody František Křížík, Praha, a. s.“ Initiation of remote communication cables production.
03/1930	The company completely burnt down. Production restored at the end of year 1930.
05/1945	The company came under national control of Křížík a. s. corporation. Then it was nationalized and became a part of national company Kablo Bratislava. Production of power and communication cables with lead coating, rubberized wires and coil wires.
1. 1. 1950	Establishment of national company KABLO Děčín.
1959	Production of remote communication cables.
1961	Kablo Děčín became a monopoly producer of communication cables for local networks.
1982–1984	Construction of new hall to expand the production of communication cables.
1985	Termination of power cables production.
1988	Initiation of optic cables production.
<hr/>	
31. 12. 1990	Privatization, establishment of incorporated company. The original name KABELOVNA Děčín Podmokly, a. s. was used.
1992	Company share acquisition by SIEMENS AG.
1994	Initiation of cable assemblies production.
1995	ISO 9001 certification completed.
1996	Initiation of installation cables production.
1996	Czech Republic Quality Award.
1998	ISO 14001 certification completed.
2000	Establishment of subsidiary company KDP Kabeltechnik Berlin, GmbH.
2000	Sale of SIEMENS AG share to investment fund BANCROFT CZ.
2001	CDT Pittsburgh becomes a majority owner of the company.
2002	Complete renewal of optic cable assortment.
2003	Initiation of data cable production.
2004	Merge with Belden company, Belden CDT inc. was established.
2007	Wilms Gruppe becomes a new owner of Kabelovna.
2010	KABELOVNA Děčín celebrates 100 <sup>th</sup> Anniversary

# SPECIFICATIONS AND STANDARDS – FIBRE OPTIC CABLES

ITU-T Rec. G.652	International Telecommunication Union – Telecommunication Standardization Sector recommendation G.652 – characteristics of a single-mode optical fibre and cable with zero-dispersion wavelength around 1310 nm
ITU-T Rec. G.655	International Telecommunication Union – Telecommunication Standardization Sector recommendation G.655 – characteristics of a non-zero dispersion-shifted single-mode optical fibre and cable
ITU-T Rec. G.656	International Telecommunication Union – Telecommunication Standardization Sector recommendation G.656 – characteristics of a non-zero dispersion for wideband optical transport
ITU-T Rec. G.651	International Telecommunication Union – Telecommunication Standardization Sector recommendation G.651 – characteristics of a 50/125µm multi-mode graded index optical fibre and cable
ITU-T Rec. G.657	International Telecommunication Union - Recommendation G.657 – the basic geometric, transmission and mechanical parameters of the singlemode optical fibers with reduced susceptibility of fiber to the bends in access of the telecommunication networks
EN 60793-1	Optical Fibres – Part 1: General Specification: measurement methods and test procedures
EN 60794-1	Fibre Optic Cables – General specification and test procedures
EN 60794-2	Fibre Optic Cables – Indoor cables
EN 60794-3	Fibre Optic Cables – Outdoor cables
EN 50266-1 EN 50266-2-2	Common test methods for cables under fire conditions – Test for vertical flame spread of vertically-mounted bunched wires or cables
EN 50267-1 EN 50267-2-2 EN 50267-2-3	Common test methods for cables under fire conditions – Test on gases evolved during combustion of materials from cables
EN 61034-1 EN 61034-2	Measurement of smoke density of cables burning under defined conditions
IEC 60331-11	Tests of electric cables under fire conditions – Circuit integrity – Part 11: Device – a singly burning at a temperature of at least 750 °C
IEC 60331-25	Tests for electric cables under fire conditions – Circuit integrity – Part 25: measurement methods – Fibre Optic Cables
IEC 60332-1-1	Tests of electric and fiber optic cables under fire conditions – Part 1-1: Test of vertical flame spread to wire or cable with a small section of insulation – Testing equipment
IEC 60332-2-1	Tests of electric and fiber optic cables under the fire conditions – Part 2-1: Test of vertical flame spread to wire or cable with a small section of insulation – Testing equipment
IEC 60332-3	Tests on electric cables under fire condition

## Manufacture & testing

All KDP fibre optic cables are manufactured in accordance with IEC 60793 and are tested according to IEC 60794. LSZH (Low Smoke Zero Halogen) jackets, where mentioned, are understood flame retardant according to recognized standards, as well.

# Fibre specification

## Multi mode fiber

Fibre type		62.5/125 µm OM1	50/125 µm OM2	50/125 µm OM2	50/125 µm OM2	50/125 µm OM3	50/125 µm OM4
<b>Bandwidth (overfilled launch)</b>							
@ 850 nm	Mhz.km	≥ 220	≥ 500	≥ 600	≥ 600	≥ 1 500	≥ 3 500
@ 1 300 nm		≥ 600	≥ 500	≥ 1 200	≥ 1 200	≥ 500	≥ 500
<b>Bandwidth (laser EMB<sup>3)</sup>)</b>							
@ 850 nm	Mhz.km	–	–	–	–	≥ 2 000	≥ 4 700
@ 1 300 nm		–	–	–	–	≥ 500	≥ 500
<b>1 Gbps Ethernet operation Link Length</b>							
@ 850 nm	(m)	≤ 300	550 <sup>1)</sup>	≤ 600 <sup>1)</sup>	≤ 750 <sup>1)</sup>	–	–
@ 1 300 nm	(m)	≤ 550	550 <sup>2)</sup>	≤ 600 <sup>2)</sup>	≤ 2 000 <sup>2)</sup>	–	–
<b>10 Gigabit Ethernet Link Lengths</b>							
@ 850 nm	(m)	–	–	–	–	≤ 300	550
<b>Attenuation – Loose Tube Cables</b>							
@ 850 nm (typical / maximum)	dB/km	2.6 / 3.0	2.4 / 3.0	2.3 / 2.8	2.3 / 2.8	– / 3.0	– / 3.0
@ 1 300 nm (typical / maximum)		0.5 / 1.0	0.7 / 1.2	0.6 / 0.9	0.6 / 0.9	– / 1.0	– / 1.0
<b>Attenuation – Tight Buffer Cables</b>							
@ 850 nm (typical / maximum)	dB/km	2.6 / 3.2	2.0 / 3.0	2.0 / 2.8	2.0 / 2.8	– / 3.0	– / 3.0
@ 1 300 nm (typical / maximum)		0.5 / 1.0	0.5 / 1.2	0.5 / 0.9	0.5 / 0.9	– / 1.1	– / 1.1
<b>Numerical Aperture</b>	µm	0.275 ± 0.015	0.20 ± 0.015	0.20 ± 0.015	0.20 ± 0.015	0.20 ± 0.015	0.20 ± 0.015
<b>Core Diameter</b>	µm	62.5 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5	50.0 ± 2.5
<b>Cladding Diameter</b>	µm	125 ± 1.0	125 ± 1.0	125 ± 1.0	125 ± 1.0	125 ± 1.0	125 ± 1.0
<b>Coating Diameter</b>	µm	245 ± 10	245 ± 10	245 ± 10	245 ± 10	245 ± 10	245 ± 10
<b>KDP fibre code</b>		G6	G5	M5	N5	X5	Y5

1 – serial Laser 1000BASE-SX

2 – serial Laser 1000BASE-LX

3 – Effective Modal Bandwidth per TIA/EIA-492AAAC and draft IEC 60793-2-10 for type A1 a.2, ensured by DMD performance specifications for sources meeting launch conditions specified in 10Gbit Ethernet (IEEE 802.3ae), OIF OC-192/STM-64 VSR-4-04, and 10 Gbit Fibre Channel (10GFC).

## Single mode fiber

Fibre type		9/125 µm OS2 G.652D – ZWP	9/125 µm OS2 G.657.A1 – ZWP	9/125 µm OS2 G.657.B3	9/125 µm G.655C&D	9/125 µm G.655C &E, G.656
<b>Attenuation – Loose Tube Cables</b>						
@ 1 310 nm (typical / maximum)	dB/km	0.31 / 0.35	0.31 / 0.35	0.31 / 0.35	– / 0.36	0.45
@ 1 550 nm (typical / maximum)		0.20 / 0.24	0.20 / 0.24	0.20 / 0.24	– / 0.30	0.30
@ 1 625 nm (typical / maximum)		0.21 / 0.26	0.21 / 0.26	0.21 / 0.26	– / 0.27	0.27
<b>Attenuation – Tight Buffer Cables</b>						
@ 1 310 nm (typical / maximum)	dB/km	0.40 / 0.50	0.40 / 0.50	0.35 / 0.40	0.40 / 0.50	0.40 / 0.48
@ 1 550 nm (typical / maximum)		0.30 / 0.40	0.30 / 0.40	0.25 / 0.30	0.28 / 0.32	0.28 / 0.32
<b>Mode Field Diameter</b>						
@ 1 310 nm	µm	9.2 ± 0.4	8.9 ± 0.4	8.4 – 9.2	–	–
@ 1 550 nm		10.4 ± 0.5	10.8 ± 0.5	9.2 – 10.4	8.4 ± 0.4	8.6 ± 0.4
<b>Chromatic Dispersion</b>						
@ 1 285–1 330 nm		≤ 3.5	–	–	–	–
@ 1 550 nm		≤ 18	–	–	–	–
@ 1 530–1 565 nm	ps/(nm.km)	–	–	–	2.6 – 6.0	5.5 – 8.9
@ 1 565–1 625 nm		–	–	–	4.0 – 8.9	6.9 – 11.4
@ 1 460–1 625 nm		–	–	–	-1.0 – 8.9	2.0 – 11.4
<b>Cable Cut-Off Wavelength (λ<sub>cc</sub>)</b>	nm	≤ 1 260	–	≤ 1 260	–	–
<b>Zero Dispersion Wavelength (λ<sub>0</sub>)</b>	nm	1 302 – 1 322	1 302 – 1 322	1 250 – 1 324	–	–
<b>Fiber PMD Individual fiber</b>	ps/√km	0.1	0.1	0.2	0.1	0.1
<b>Cladding Diameter</b>	µm	125 ± 0.7	125 ± 0.7	125 ± 0.7	125 ± 0.7	125 ± 0.7
<b>Coating Diameter</b>	µm	245 ± 10	240 ± 5	245 ± 10	245 ± 5	245 ± 5
<b>KDP fibre code</b>		E9	E8	D9	B9	R9

ZWP – Zero Water Peak

Attenuation values are valid for fibers in the cable

# Code table

## Tight buffer cables

Position	1	Character	2	Character	3	Character	4	Character
	0	Fibre in tight SP	0	Buffer only	A	PA buffer	0	PE jacket
	1	Simplex cable	1	∅ simplex 1.8 mm	B	–	1	LSZH jacket
	2	Duplex cable	2	∅ simplex 2.0 mm	C	–	2	LSZH jacket + FRP members in jacket
	3	Heavy-duplex cable	3	∅ simplex 3.0 mm	D	–	3	PE jacket + FRP members in jacket
	4	Break-out cable	4	∅ simplex 2.4 mm	E	–	4	LSZH / SWA / LSZH
	5	Distribution cable	5	–	F	LSZH Free-tight buffer	5	LSZH / SWA / PE
	6	Multi-distribution cable	6	∅ simplex 1.6 mm	G	–	6	PVC jacket – inner / universal cable
	7	Drop cable	7	∅ simplex 1.7 mm	H	–	7	PUR jacket – inner / outdoor
	8	Break-out cable without central strenght member	8	∅ simplex 2.8 mm	–	–	8	LSZH / glass yarn / LSZH
	9	Quadplex cable	9	∅ simplex 2.9 mm	–	–	9	PUR jacket outdoor only
			A	Distribution cable – Aramid	S	LSZH Free-strip (semi-tight) buffer	A	–
			E	Distribution cable – E-glass	T	LSZH Tight buffer	B	Buffer
			S	Distribution cable – CST	–	–	–	–
			V	Distribution cable – waterblocking Aramid	–	–	–	–
			U	Subunits with fibers	X	LSZH Shielded buffer	–	–
			Y	–	Y	–	Y	–
			Z	–	Z	–	Z	–
	Z	Custom designs			0	Fibre without buffer		

## Loose tube cables

Position	1	Character	2	Character	3	Character	4	Character
	A	CLT 2.5 mm	0	–	0	–	0	PE outer jacket, dry core
	B	CLT 3.0 mm	1	FIG.8 + CST one jacket	1	–	1	PE outer jacket, filled core
	C	MLT 6 × 1.8 mm [6 × 12] – 72	2	FIG.8 + CST two jackets	2	Messenger 2.0 mm	2	LSZH outer jacket, dry core
	D	MLT 6 × 2.3 mm [6 × 24] – 144	3	4 × 12	3	Messenger 3.0 mm	3	LSZH outer jacket, filled core
	E	MLT 5 × 2.5 mm [5 × 12] – 60	4	6 × 12	4	Messenger 4.5 mm	4	PA outer jacket, dry core
	F	MLT 6 × 2.5 mm [6 × 12] – 72	5	8 × 12	5	–	5	PA outer jacket, filled core
	G	MLT 8 × 2.5 mm [8 × 12] – 96	6	12 × 12	6	Messenger 1.6 mm	6	PE / PA outer jacket, dry core
	H	MLT 12 × 2.5 mm [12 × 12] – 144	7	–	7	FRP messenger	7	PE / PA outer jacket, filled core
	I	MLT 18 × 2.5 mm [18 × 12] – 216	8	FIG.8	8	FRP members in core	8	LSZH / PA outer jacket, dry core
	J	MLT 12 × 3.5 mm [12 × 24] – 288	9	–	9	FeZn wires in jacket	9	LSZH / PA outer jacket, filled core
	K	MLT 8 × 2.3 mm [8 × 24] – 192	A	Aramid (WB)	A	–	A	AL + PE outer jacket, dry core
	L	MLT 4 × 2.5 mm [4 × 12] – 48	B	–	B	–	B	AL + PE outer jacket, filled core
	M	MLT 36 × 2.5 mm [36 × 12] – 432	C	CST one jacket with aramid under jacket	C	Inner PVC jacket	C	PA / PE outer jacket, dry core
	N	ADSS	D	CST two jacket with aramid under jacket	D	–	D	PA / PE outer jacket, filled core
	P	MLT 8 × 1.8 mm [8 × 12] – 96	E	E-glass (WB) – standart rodent protection	E	–	E	PA / LSZH outer jacket, dry core
	Q	MLT 8 × 1.5 mm [8 × 12] – 96	F	FRPA	F	Inner FRNC jacket	F	PA / LSZH outer jacket, filled core
	R	MLT 12 × 1.8 mm [12 × 12] – 144	G	E-glass (Glue) – standard rodent protection	G	–	G	PUR outer jacket, dry core
	S	MLT 12 × 2.3 mm [12 × 24] – 288	H	CST single jacket	H	–	H	PUR outer jacket, filled core
	T	MLT 6 × 1.5 mm [6 × 12] – 72	I	CST two jackets with E-glass yarns under jacket	I	–	I	–
	U	MLT 5 × 1.8 mm [5 × 12] – 60	J	–	J	–	J	–
	V	MLT 18 × 1.8 mm [18 × 12] – 216	K	–	K	–	K	–
	W	MLT 12 × 1.5 mm [12 × 12] – 144	L	Attenuated (lower tensile strenght and jacket)	L	Inner Al/PE (Laminated)	L	–
	X	CLT 2.0 mm	M	Micro cable	M	–	M	–
	Y	CLT 3.5 mm	N	–	N	–	N	–
	Z	Custom designs	P	(jacket – aramid – jacket)	P	Inner PE jacket	P	PVC outer jacket, dry core
			Q	(jacket – E-glass – jacket)	Q	–	Q	PVC outer jacket, filled core
	β	FRNC bundle without gel	R	Improved rodent protection (WB E-glass)	R	–	R	–
	#	FRNC bundle with gel	S	Self-supporting nonmetallic strength member	S	–	S	–
			T	Self-supporting dielectric member – two jackets	T	–	T	–
			U	–	U	–	U	–
			V	–	V	–	V	–
			W	SWA two jackets – without strenght members	W	–	W	–
			X	SWA two jackets – aramid on core	X	– 3 kN	X	–
			Y	SWA two jackets – E-glass on core	Y	– 6 kN	Y	–
			Z	–	Z	– 10 kN	Z	–

## Fibre and buffer colour code

### Fibres in loose tube

1<sup>st</sup> to 12<sup>th</sup>: red, green, blue, yellow, white, grey, brown, violet, turquoise, black, orange, pink 13<sup>th</sup> to 24<sup>th</sup>: red, green, blue, yellow, white, grey, brown, violet, turquoise, natural, orange, pink – with black rings (according to IEC 60304)

### Tight buffers

1<sup>st</sup> to 12<sup>th</sup>: red, green, blue, yellow, white, grey, brown, violet, turquoise, black, orange, pink 13<sup>th</sup> to 24<sup>th</sup>: red, green, blue, yellow, white, grey, brown, violet, turquoise, black\*, orange, pink – with black rings (according to IEC 60304) \*white ring

### Loose tube buffers

1<sup>st</sup>: red, 2<sup>nd</sup>: green, rest of tubes: white

Other fibre and buffer colour sequences available on request.

## Rodent protection

Cable constructions containing e-glass yarns (e.g. as peripheral strength members) or cables with PA outer jacket are considered as cables with improved rodent protection. Nevertheless, only armour (e.g. SWA, CST, FRPA) provides cable with full rodent protection.

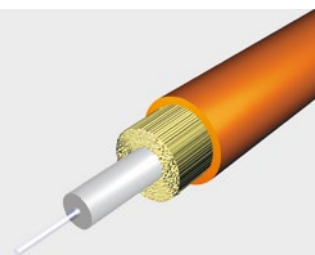
All cable parameters in this catalogue are for information only. All rights reserved.

# J-V(ZN)H

## Simplex cable

### Specification

12T1/12S1; 14T1/14S1; 18T1/18S1  
16T1/16S1; 17T1/17S1; 11T1/11S1



### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)

### Make up

One Singlemode or multimode optical fibre in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

#### LSZH sheath

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other jacket colours available on request

#### Packing on reels

### Application

- » workstation connecting cables
- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

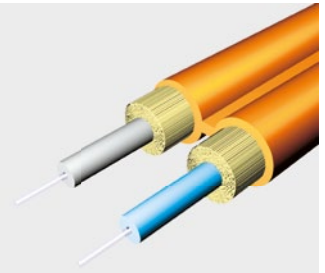
Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Simplex cable D (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/2 Nm)	Standard put-up length (m)
16T1/16S1	1.6	3	100	1 000	3	2 100
17T1/17S1	1.7	4	100	1 000	3	2 100
11T1/11S1	1.8	4	100	400	3	2 100
12T1/12S1	2.0	4	100	400	3	2 100
14T1/14S1	2.4	7.6	100	400	3	2 100
18T1/18S1	2.8	8	100	400	3	2 100

# J-V(ZN)H

## Duplex cable



### Specification

21TI/21SI; 22TI/22SI; 24TI/24SI; 28TI/28SI

### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)

### Make up

Two singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

#### LSZH sheath

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other jacket colours available on request

**Buffer colours:** 1. natural, 2. blue; other buffer colours available on request

#### Packing on reels

### Application

- » workstation connecting cables
- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

D – cable outer diameter

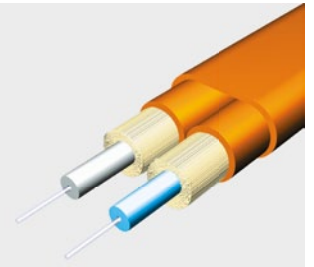
Design code	Simplex cable D (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/2 Nm)	Standard put-up length (m)
21TI/21SI	1.8	1.8 × 3.8	6	200	400	3	2 100
22TI/22SI	2.0	2.0 × 4.3	9	200	400	3	2 100
24TI/24SI	2.4	2.4 × 5.1	12	200	400	3	2 100
28TI/28SI	2.8	2.8 × 5.9	16	200	400	3	2 100

# J-V(ZN)HH

## Heavy-duplex cable

### Specification

32TI/32SI; 34TI/34SI; 38TI/38SI



### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)

### Make up

(2 Simplex cables in common LSZH outer jacket)

Two singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

**LSZH simplex subunit sheath**

**Ripcord**

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:** yellow (E9), green (G50), orange (G62.5); other colours available on request

**Buffer colours:** 1. natural, 2. blue; other buffer colours available on request

**Packing on reels**

### Application

- » workstation connecting cables
- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

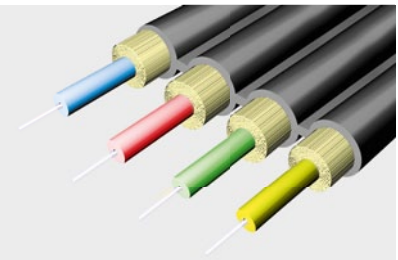
Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Simplex cable D	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
	(mm)	(mm)	(kg/km)	(N)	(N/10 cm)	(w/5 Nm)	(m)
32TI/32SI	2.0	3.0 × 5.0	20	200	1 000	3	2 100
34TI/34SI	2.4	3.6 × 6.0	28	200	1 000	3	2 100
38TI/38SI	2.8	4.2 × 7.0	37	200	1 000	3	2 100

# J-V(ZN)H

## Quadplex cable



### Specification

9AxI

### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to IEC 60332-3A

### Make up

Four singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

#### LSZH sheath

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other jacket colours available on request

**Buffer colours:** 1. blue, 2. red, 3. green, 4. yellow, other buffer colours available on request

#### Packing on reels

### Application

- » workstation connecting cables
- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-5 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

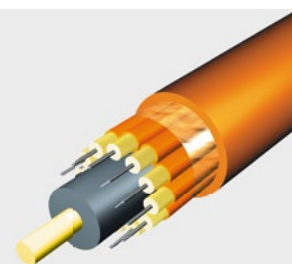
Design code	Simplex cable D	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
	(mm)	(mm)	(kg/km)	(N)	(N/10 cm)	(w/2 Nm)	(m)
9AxI	2.0	8.6	16.5	180	300	3	2 100

# J-V(ZN)HH

## Break-out cable

### Specification

42T1/42SI; 44T1/44SI



### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)

### Make up

4 to 36 simplex cables helically stranded around central member in common LSZH outer jacket

Singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

**LSZH simplex subunit sheath**

**Nonmetallic central strength member**

**Ripcord**

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:** yellow (E9), green (G50), orange (G62.5); other colours available on request

**Packing on reels**

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

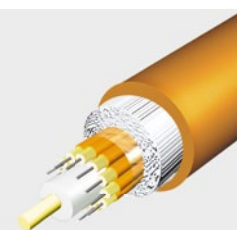
Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

D – cable outer diameter

Design code	Fibre number	Simplex cable D (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
42T1/42SI	4	2.0	7.0	48	500	2 000	3	2 100
42T1/42SI	6	2.0	8.0	63	800	2 000	3	2 100
42T1/42SI	8	2.0	9.3	85	1 500	2 000	3	2 100
42T1/42SI	12	2.0	11.8	131	1 800	2 000	3	2 100
42T1/42SI	16	2.0	11.4	119	1 800	2 000	3	2 100
42T1/42SI	18	2.0	12.0	131	2 000	2 000	3	2 100
42T1/42SI	24	2.0	14.5	179	2 500	2 000	3	2 100
42T1/42SI	36	2.0	16.3	221	3 000	2 000	3	2 100
44T1/44SI	4	2.4	8.6	67	650	2 000	3	2 100
44T1/44SI	6	2.4	9.9	89	800	2 000	3	2 100
44T1/44SI	8	2.4	11.4	118	1 600	2 000	3	2 100
44T1/44SI	12	2.4	14.6	184	1 900	2 000	3	2 100
44T1/44SI	16	2.4	14.0	167	2 000	2 000	3	2 100
44T1/44SI	18	2.4	14.9	185	2 200	2 000	3	2 100
44T1/44SI	24	2.4	17.6	250	2 800	2 000	3	2 100

# J-V(ZN)H(BN)H

## Break-out cable – improved rodent protection



### Specification

44T8/44S8; 42T8/42S8

### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)
- (BN)** – nonmetallic strength member under sheath with improved rodent protection

### Make up

4 to 24 simplex cables helically stranded around central member in common LSZH outer jacket

Singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm

**Strength elements** – aramid yarns

**LSZH simplex subunit sheath**

**Nonmetallic central strength member**

**E-glass armouring**

**Ripcord**

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:**

yellow (E9), green (G50), orange (G62.5); other colours available on request

**Packing on reels**

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

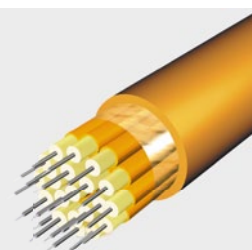
Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D* – cable outer diameter

Design code	Fibre number	Simplex cable D (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
44T8/44S8; 42T8/42S8	4	2.4/2.0	9.5/8.4	83/76	2 200/2 400	2 000	3	2 100
44T8/44S8; 42T8/42S8	6	2.4/2.0	10.8/9.4	89/95	2 900/2 800	2 000	3	2 100
44T8/44S8; 42T8/42S8	8	2.4/2.0	12.3/10.5	117/119	3 300/3 700	2 000	3	2 100
44T8/44S8; 42T8/42S8	12	2.4/2.0	15.5/13.4	220/178	4 400/4 800	2 000	3	2 100
44T8/44S8; 42T8/42S8	16	2.4/2.0	14.9/14.9	209/163	4 600/3 900	2 000	3	2 100
44T8/44S8; 42T8/42S8	18	2.4/2.0	15.8/13.5	228/180	4 800/4 800	2 000	3	2 100
44T8/44S8; 42T8/42S8	24	2.4/2.0	18.5/15.5	297/229	5 500/5 500	2 000	3	2 100

# J-V(ZN)HH

## Break-out cable



### Specification

82xI

### Cable codes

- J** – indoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to IEC 60332-3A

### Make up

4 to 48 simplex cables helically stranded around central member in common LSZH outer jacket

Singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

**LSZH simplex subunit sheath**

**Nonmetallic central strength member**

**Ripcord**

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:** yellow (E9), green (G50), orange (G62.5); other colours available on request

**Packing on reels**

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	0 °C ÷ +50 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

D – cable outer diameter

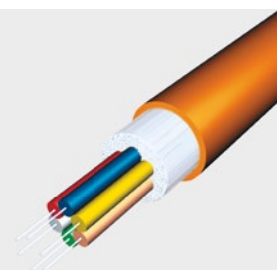
Design code	Fibre number	Simplex cable D	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
		(mm)	(mm)	(kg/km)	(N)	(N/10 cm)	(w/20 Nm)	(m)
82xI	4	2.0	6.9	49	400	3 000	3	2 100
82xI	6	2.0	8.1	67	550	3 000	3	2 100
82xI	8	2.0	9.3	87	800	3 000	3	2 100
82xI	12	2.0	10.8	114	1 100	3 000	3	2 100
82xI	16	2.0	11.9	139	1 500	3 000	3	2 100
82xI	24	2.0	14.5	192	2 000	3 000	3	2 100
82xI	48	2.0	16.8	316	3 500	3 000	3	2 100

# J/A-VQ(BN) H WBF | J/A-VQ(BN) I IY

## Distribution cable – improved rodent protection

### Specification

5Ex1/5Ex7



### Cable codes

- J/A** – indoor/outdoor cable
- V** – tightly buffered optical fibre
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- H** – LSZH jacket
- I IY** – PUR jacket

### Make up

2 to 24 singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – water-swellaible E-glass yarns (WBF)

#### Ripcord

#### Common outer LSZH sheath

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other sheath colours available on request

**Buffer colours** – see the section Fibre and buffer colour code

#### Packing on reels

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-20 °C ÷ +50 °C
Transport and store temperatures	-20 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D* – cable outer diameter

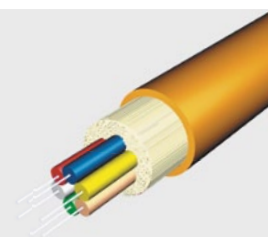
Design code	Fibre number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
5Ex1/5Ex7	2	5.0	29 / 29	850	2 000	3	2 100
5Ex1/5Ex7	4	5.5	35 / 35	1 000	2 000	3	2 100
5Ex1/5Ex7	6	6.2	42 / 42	1 200	2 000	3	2 100
5Ex1/5Ex7	8	6.5	46 / 47	1 400	2 000	3	2 100
5Ex1/5Ex7	10	6.7	51 / 51	1 600	2 000	3	2 100
5Ex1/5Ex7	12	8.3	69 / 62	2 500	2 000	3	2 100
5Ex1/5Ex7	16	8.4	78 / 71	2 700	2 000	3	2 100
5Ex1/5Ex7	24	10.4	99 / 89	2 900	2 000	3	2 100

# J-VQ(ZN)H | J/A-VQ(ZN) | IY

## Distribution cable

### Specification

5Vx1/5Vx7 (PUR)



### Cable codes

- J** – indoor cable
- J/A** – indoor/outdoor cable
- V** – tightly buffered optical fibre
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to EN 50266 (EN 60332)
- IY** – PUR jacket

### Make up

2 to 24 singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

#### Ripcord

#### Common outer LSZH sheath

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other sheath colours available on request

**Buffer colours** – see the section Fibre and buffer colour code

#### Packing on reels

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-20 °C ÷ +50 °C
Transport and store temperatures	-20 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

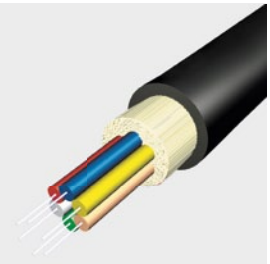
Design code	Fibre number	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
		(mm)	(kg/km)	(N)	(N/10 cm)	(w/20 Nm)	(m)
5Vx1/5Vx7	2	4.6	23 / 20	530	2 000	3	2 100
5Vx1/5Vx7	4	5.1	28 / 24	650	2 000	3	2 100
5Vx1/5Vx7	6	5.5	33 / 29	850	2 000	3	2 100
5Vx1/5Vx7	8	6.1	39 / 34	950	2 000	3	2 100
5Vx1/5Vx7	10	6.3	42 / 37	950	2 000	3	2 100
5Vx1/5Vx7	12	6.6	46 / 40	1 100	2 000	3	2 100
5Vx1/5Vx7	16	7.5	58 / 51	1 300	2 000	3	2 100
5Vx1/5Vx7	24	8.5	73 / 65	1 600	2 000	3	2 100

# J/A-VQ(ZN)IIY

## Military cable

### Specification

5VA7



### Cable codes

- J/A** – indoor/outdoor cable
- V** – tightly buffered optical fibre
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- IIY** – PUR jacket, UV stable

### Make up

2 to 12 singlemode or multimode optical fibres

**Strength elements** – aramid yarns

**Common outer black jacket**

**Sheath colours:** sheath colours available on request

**Buffer colours** – see the section Fibre and buffer colour code

**Packing on reels**

### Application

- » CCTV wiring
- » computer room cabling
- » short run office cabling
- » placement in cable ducts
- » suitable for connection redeployable systems and moving devices
- » adverse environment
- » improved chemical resistance

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +50 °C
Operation temperatures	-20 °C ÷ +50 °C
Transport and store temperatures	-40 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D* – cable outer diameter

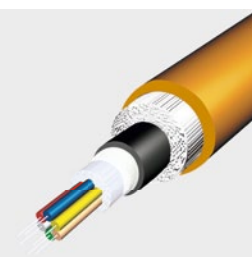
Design code	Fibre number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
5VA7	2	4.9	23	500	1 000	3	2 100
5VA7	4	5.1	26	600	1 000	3	2 100
5VA7	6	5.8	32	720	1 000	3	2 100
5VA7	8	6.2	36	940	1 000	3	2 100
5VA7	10	6.3	39	1 000	1 000	3	2 100
5VA7	12	6.4	42	1 100	1 000	3	2 100

# J/A-VQ(BN) HBH

## Distribution cable – improved rodent protection

### Specification

5Ex8



### Cable codes

- J/A** – indoor/outdoor cable
- V** – tightly buffered optical fibre
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- H** – LSZH jacket
- B** – nonmetallic strength member under sheath with rodent protection

### Make up

2 to 24 singlemode or multimode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

#### Ripcord

**Common, inner, outer LSZH sheath**

#### E-glass armouring

**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other sheath colours available on request

**Buffer colours** – see the section Fibre and buffer colour code

#### Packing on reels

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

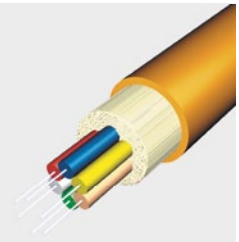
### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-20 °C ÷ +50 °C
Transport and store temperatures	-20 °C ÷ +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Fibre number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
5Ex8	2	8.2	83	2 500	2 000	3	2 100
5Ex8	4	8.8	95	2 800	2 000	3	2 100
5Ex8	6	9.4	105	3 000	2 000	3	2 100
5Ex8	8	9.8	112	3 300	2 000	3	2 100
5Ex8	10	9.9	120	3 500	2 000	3	2 100
5Ex8	12	10.5	128	3 600	2 000	3	2 100
5Ex8	16	11.2	147	3 800	2 000	3	2 100
5Ex8	24	13.5	181	4 100	2 000	3	2 100

# J/A-(ZN)H | J/A-(ZN)IIY | A-(ZN)IIY DROP cable



## Specification 7A01; 7A07; 7A09

### Cable codes

- J/A** – indoor/outdoor cable  
**A** – outdoor cable  
**(ZN)** – nonmetallic strength member under sheath  
**H** – LSZH jacket  
**IIY** – PUR jacket

### Make up

- 2 to 24 singlemode fibres G.657A  
**Strength elements** – aramid yarns  
**Common outer LSZH or PUR jacket**  
**Sheath colours:** yellow (E9), green (G50), orange (G62.5); other sheath colours available on request  
**Fibre colours** – see the section Fibre and buffer colour code

### Packing on reels

### Application

- » computer room cabling FTTx
- » short run office cabling
- » placement in cable ducts
- » self-supporting (PUR)

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-20 °C ÷ +60 °C
Transport and store temperatures	-25 °C ÷ +60 °C
Minimum bending radius	min. 5D
Cable lifetime	min. 30 years

D – cable outer diameter

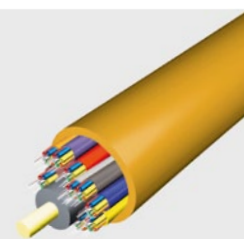
Design code	Fibre number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/15 Nm)	Standard put-up length (m)
7A01/7A07/7A09	2	3.0	10 / 8.5 / 8.5	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	4	3.0	10 / 8.5 / 8.5	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	6	3.0	10 / 8.5 / 8.5	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	8	3.4	12 / 10 / 10	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	12	3.4	12 / 10 / 10	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	16	3.7	14 / 12 / 11	500	500 / 1 000 / 1 000	3	2 100
7A01/7A07/7A09	24	4.0	16 / 14 / 13	500	500 / 1 000 / 1 000	3	2 100

# J-N(ZN)HH

## Break-out DROP cable

### Specification

4U01



### Cable codes

- J** – indoor cable
- N** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to IEC 60332-3A

### Make up

2 to 6 distribution cables around central member in common LSZH outer jacket

Singlemode optical fibres in tight (stripability up to 10 cm) or semi-tight (stripability 20 to 100 cm) LSZH buffer Ø 0.9 mm, on request stripability > 100 cm

**Strength elements** – aramid yarns

**LSZH sheath**

**Nonmetallic central strength member**

**Ripcord**

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:**  
colours available on request

**Packing on reels**

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

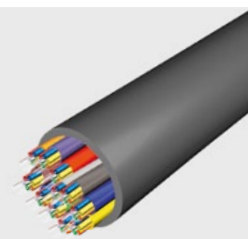
Temperature ranges for installation and assembly	-5 °C + +40 °C
Operation temperatures	0 °C + +50 °C
Transport and store temperatures	-25 °C + +60 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Fibre number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
4U01	72	10.5	105	1 500	500	3	2 100

# J-N(ZN)HH

## MikroFlex – cable



### Specification

BA02 (LSZH)

### Cable codes

- J** – indoor cable
- N** – optical fibre
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to IEC 60332-3A

### Make up

12 x 12 singlemode optical fibres in dry tight tube

**Strength elements** – aramid yarns

**2x LSZH sheath**

**Common outer LSZH jacket**

**Sheath colours:** yellow (E9); other sheath colours available on request

**Buffer colours** – see the section Fibre and buffer colour code

**Packing on reels**

### Application

- » computer room cabling
- » short run office cabling
- » placement in cable ducts
- » FTTx

### Environmental conditions

Temperature ranges for installation and assembly	5 °C + +50 °C
Operation temperatures	-5 °C + +50 °C
Transport and store temperatures	-5 °C + +50 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 let

*D* – cable outer diameter

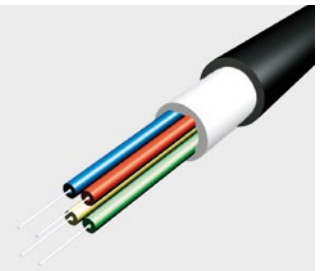
Design code	Fibre number	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
		(mm)	(kg/km)	(N)	(N/10 cm)	(w/20 Nm)	(m)
BA02	144 (12 x 12)	8.5 ± 0.5	47	1 000	100	3	2 100

# J/A-DH | A-D2Y

## Central loose tube cable – „Lace II“ – microcable

### Specification

AM02/BM02 (LSZH)  
AM00/BM00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

2 to 24 colour coded singlemode or multimode optical fibres in loose buffer tube Ø 2.1 mm (up to 12 fibres) or Ø 2.8 mm (up to 24 fibres)

#### Common outer PE sheath

**Fibre colours** - see the section Fibre and buffer colour code

**Tube colour:** white; other tube colours available on request

**Sheath colour:** black; other sheath colours on demand

#### Packing on reels

### Application

- » suitable for an air-blown installation method
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/5 Nm)	Standard put-up length (m)
<b>AM02</b>	12	2.1	3.1	9.5	70	200	3	2 100 / 4 100
<b>BM02</b>	24	3.0	4.0	16	100	200	3	2 100 / 4 100
<b>AM00</b>	12	2.1	3.1	7	70	200	3	2 100 / 4 100
<b>BM00</b>	24	3.0	3.8	13	100	200	3	2 100 / 4 100

# J/A-DQ(ZN)H WBF | A-DQ(ZN)2Y WBF

## Central loose tube cable – standard rodent protection

### Specification

AE02/BE02 (LSZH)  
AE00/BE00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

2 to 24 colour coded singlemode or multi-mode optical fibres in loose buffer tube Ø 2.1 mm (up to 12 fibres) or Ø 2.8 mm (up to 24 fibres)

**Strength elements** – water-swellaible E-glass yarns (WBF)

#### Ripcord

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### On demand:

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

### Application

- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

D – cable outer diameter

Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
AE02	12	2.3	5.4	36	1 100	2 000	3	2 100 / 4 100
BE02	24	3.0	6.4	49	1 100	2 000	3	2 100 / 4 100
AE00	12	2.3	5.4	25	1 100	2 000	3	2 100 / 4 100
BE00	24	3.0	5.8	33	1 100	2 000	3	2 100 / 4 100

# J/A-DQ(BN)H WBF | A-DQ(BN)2Y WBF

## Central loose tube cable – „Beaver II“ – improved rodent protection

### Specification

AR02/BR02 (LSZH)  
AR00/BR00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

2 to 24 colour coded singlemode or multimode optical fibres in loose buffer tube Ø 2.1 mm (up to 12 fibres) or Ø 2.8 mm (up to 24 fibres)

**Strength elements** – water-swellaable E-glass yarns (WVBF)

#### Ripcord

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### On demand:

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

### Application

- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts or on cable trays

### Environmental conditions

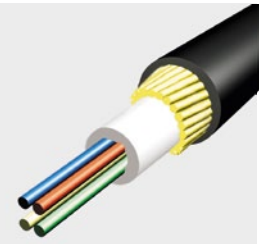
Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

D – cable outer diameter

Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
AR02	12	2.3	6.5	49	2 000	2 000	3	2 100 / 4 100
BR02	24	3.0	7.7	66	2 500	2 000	3	2 100 / 4 100
AR00	12	2.3	6.5	36	2 000	2 000	3	2 100 / 4 100
BR00	24	3.0	7.7	50	2 500	2 000	3	2 100 / 4 100

# A-DQ(BN)B2Y (FRP I,0)

## Central loose tube cable – fibre reinforced plastic rod armoured (FRPA)



### Specification

BF00 (PE)

### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- 2Y** – PE jacket
- (FRP I,0)** – FRP rod Ø 1.0 mm

### Make up

2 to 24 colour coded singlemode or multimode optical fibres in loose buffer tube

#### FRP armour

#### Ripcord under outer sheath

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### On demand:

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

On the request double sheath

### Application

- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or direct burial

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C + +40 °C
Operation temperatures	-30 °C + +70 °C
Transport and store temperatures	-40 °C + +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

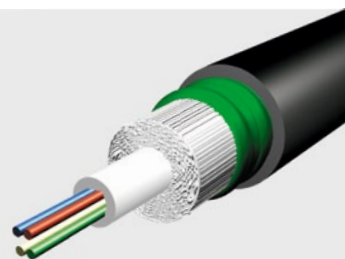
Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
BF00	24	2.8	7.7	38	2 200	2 500	3	2 100 / 4 100

# J/A-DQ(ZN)(SR)H WBF A-DQ(ZN)(SR)2Y WBF

## Central loose tube cable – corrugated steel tape armoured (CST)

### Specification

BH02 (LSZH)  
BH00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- (SR)** – corrugated steel tape armouring
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

2 to 24 colour coded singlemode or multi-mode optical fibres in loose buffer tube

**Strength elements** – water-swellaable E-glass yarns (WBF)

#### Ripcord

#### Corrugated steel tape

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

**On demand:**

1) other sheath colours

#### Packing on reels

On the request double sheath

### Application

- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or direct burial
- » full rodent protection

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/10 Nm)	Standard put-up length (m)
BH02	24	3.0	10.1	125	2 500	5 000	3	2 100 / 4 100
BH00	24	3.0	9.9	97	2 500	5 000	3	2 100 / 4 100

# J/A-DQ(ZN)2YBH (R0,63vzk)

# A-DQ(ZN)HBH (R0,63vzk)

# A-DQ(ZN)2YB2Y (R0,63vzk)

## Central loose tube cable – steel wire armoured (SWA)

### Specification

BWF2 (LSZH)  
BWP2 (LSZH)  
BWP0 (PE)



### Cable codes

**J/A** – indoor/outdoor cable  
**A** – outdoor cable  
**D** – jelly filled multifibre loose buffer tube  
**Q** – dry water blocking agent in cable core  
**(ZN)** – nonmetallic strength member under sheath  
**2Y** – PE jacket  
**H** – LSZH jacket  
**B** – armoring  
**(R0,63vzk)** – steel wire Ø 0.63 mm; galvanized

### Make up

2 to 24 colour coded singlemode or multi-mode optical fibres in loose buffer tube

**Strength elements** – water-swella-ble E-glass yarns (WBF)

**Ripcord under inner and outer sheath**

**Common inner LSZH or PE sheath**

**Steel wire armour (SWA)**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

**On demand:**

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

### Packing on reels

### Application

- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or directly buried to ground
- » full rodent protection

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

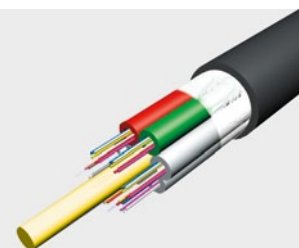
Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
BWF2	24	3.0	10.7	192	4 000	4 000	3	2 100 / 4 100
BWP2	24	3.0	10.7	181	4 000	4 000	3	2 100 / 4 100
BWP0	24	3.0	10.7	156	4 000	4 000	3	2 100 / 4 100

# J/A-DQH | A-DQ2Y | A-DF2Y

## Multi loose tube cable – Lite

### Specification

LM02; FM02; GM02; HM02; IM02 (LSZH)  
 LM00; FM00; GM00; HM00; IM00 (PE)  
 LM01; FM01; GM01; HM01; IM01 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- F** – cable core filled with gel
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

4, 6, 8, 12 or 18 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaable yarn and tape or gel

**Ripcord under outer sheath**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

**Packing on reels**

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

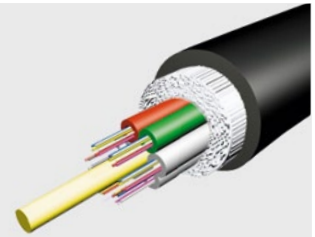
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
LM02/LM00/LM01	48	4	9.0 / 8.6 / 9.8	350 / 350 / 200	2 000	3	2 100
FM02/FM00/FM01	72	6	10.7 / 10.3 / 11.5	1 500 / 1 500 / 1 400	1 000	3	2 100
GM02/GM00/GM01	96	8	12.2 / 11.8 / 12.9	2 100 / 2 100 / 1 600	2 000	3	2 100
HM02/HM00/HM01	144	12	15.5 / 15.1 / 15.5	2 100 / 2 100 / 1 600	2 000	3	2 100
IM02/IM00/IM01	216	18	17.3 / 17.3 / 16.4	1 500	2 000	3	2 100

# J/A-DQ(ZN)H | A-DQ(ZN)2Y | A-DF(ZN)2Y WBF

## Multi loose tube cable – standard rodent protection

### Specification

LE02; FE02; GE02; HE02; IE02; ME02 (LSZH)  
 LE00; FE00; GE00; HE00; IE00; ME00 (PE)  
 LE01; FE01; GE01; HE01; IE01 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- F** – cable core filled with gel
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket

### Make up

6, 8, 12, 18 or 36 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multi-mode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

#### Waterblocking agent

#### Ripcord under inner and outer sheath

#### Common inner LSZH or PE sheath

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

#### On demand:

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

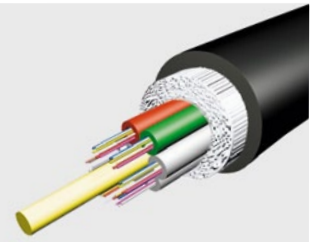
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
LE02/LE00/LE01	48	4	9.5 / 9.1 / 9.5	1 600 / 1 600 / 1 300	2 000	3	2 100
FE02/FE00/FE01	72	6	11.2 / 10.8 / 11.2	3 200 / 3 200 / 2 800	2 000	3	2 100
GE02/GE00/GE01	96	8	12.8 / 12.4 / 12.8	2 900 / 2 900 / 2 600	2 000	3	2 100
HE02/HE00/HE01	144	12	16.0 / 15.6 / 16.0	3 300 / 3 300 / 3 000	2 000	3	2 100
IE02/IE00/IE01	216	18	17.8 / 17.8 / 16.5	2 400 / 2 400 / 3 200	2 000	3	2 100
ME02/ME00	432	36	23.7 / 23.6	4 000 / 4 000	2 000 / 4 000	3	2 100

# J/A-DQ(BN)H | A-DQ(BN)2Y | A-DF(BN)2Y WBF

## Multi loose tube cable – improved rodent protection

### Specification

LR02; FR02; GR02; HR02; IR02 (LSZH)  
LR00; FR00; GR00; HR00; IR00 (PE)  
LR01; FR01(PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- F** – cable core filled with gel
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

4, 6, 8, 12 or 18 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – gel

**Ripcord under inner and outer sheath**

**Common inner LSZH or PE sheath**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

### Packing on reels

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

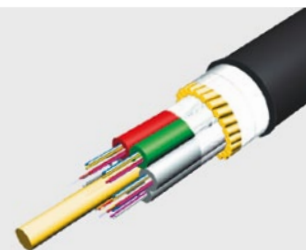
D – cable outer diameter

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
LR02/LR00/LR01	48	4	10.3 / 10.3 / 11.0	3 000 / 3 000 / 3 700	2 000	3	2 100
FR02/FR00/FR01	72	6	12.0 / 12.0 / 12.7	5 000 / 5 000 / 5 000	2 000	3	2 100
GR02/GR00	96	8	13.4 / 13.4	4 500 / 4 500	2 000	3	2 100
HR02/HR00	144	12	16.6 / 16.6	6 000 / 6 000	2 000	3	2 100
IR02/IR00	216	18	17.5 / 17.5	4 500 / 4 500	2 000	3	2 100

# A-DQ(BN)B2Y(T) (FRP I, 0)

Multi loose tube cable – fibre reinforced plastic rod armoured (FRPA) self-supporting



## Specification

LF00; FF00; GF00; (PE)

### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- B** – armoring
- 2Y** – PE jacket
- (T)** – self-supporting circular
- (FRP I,0)** – FRP rod Ø 1.0 mm

### Make up

4, 6 or 8 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaable yarn and tape

**FRP armour**

**Ripcord under outer sheath**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

**Packing on reels**

**On the request double sheath**

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or direct burial
- » aerial installation

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

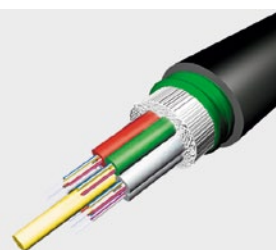
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
LF00	48	4	13.6	4 600	4 000	3	2 100
FF00	72	6	15.3	6 800	4 000	3	2 100
GF00	96	8	17.0	7 600	4 000	3	2 100

# J/A-DQ(ZN)(SR)H WBF A-DQ(ZN)(SR)2Y WBF

## Multi loose table cable – corrugated steel tape armoured

### Specification

LH02 (LSZH); LH00 (PE)  
FH02 (LSZH); FH00 (PE)  
GH02 (LSZH); GH00 (PE)  
HH02 (LSZH); HH00 (PE)  
IH02 (LSZH); IH00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable  
**A** – outdoor cable  
**D** – jelly filled multifibre loose buffer tube  
**Q** – dry water blocking agent in cable core  
**(ZN)** – nonmetallic strength member under sheath  
**(SR)** – corrugated steel tape armouring  
**2Y** – PE jacket  
**H** – LSZH jacket

### Make up

4, 6, 8, 12 or 18 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaable yarn and tape

**Ripcord under outer sheath**

**Corrugated steel tape**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

**Packing on reels**

**On the request double sheath**

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or direct burial

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C + +40 °C
Operation temperatures	-30 °C + +70 °C
Transport and store temperatures	-40 °C + +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

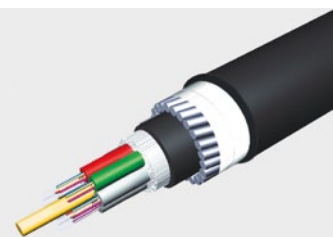
Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/10 Nm)	Standard put-up length (m)
LH02/LH00	48	4	12.5	177 / 144	2 700	6 000	3	2 100 / 4 100
FH02/FH00	72	6	13.5	225 / 181	4 700	6 000	3	2 100 / 4 100
GH02/GH00	96	8	15.5	286 / 221	5 300	6 000	3	2 100 / 4 100
HH02/HH00	144	12	18.5	364 / 313	6 000	6 000	3	2 100
IH02/IH00	216	18	18.7	357 / 324	4 300	6 000	3	2 100

# J/A-DQHBH (RI,0vzk) A-DQ2YB2Y (RI,0vzk)

## Multi loose tube cable – steel wire armoured (SWA)

### Specification

LWF2; FWF2; GWF2; HWF2; IWF2 (LSZH)  
LWP0; FWP0; GWP0; HWP0; IWP0 (PE)



### Cable codes

- J/A** – indoor/outdoor cable  
**A** – outdoor cable  
**D** – jelly filled multifibre loose buffer tube  
**Q** – dry water blocking agent in cable core  
**B** – armoring  
**2Y** – PE jacket  
**H** – LSZH jacket  
**(RI,0vzk)** – steel wire Ø 1.0 mm; galvanized

### Make up

4, 6, 8, 12 or 18 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaable yarn and tape

**Ripcord under inner and outer sheath**

**Common inner LSZH or PE sheath**

**Steel wire armour (SWA)**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

**Packing on reels**

**On the request double sheath**

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » placement in ducts, on cable trays or direct burial

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

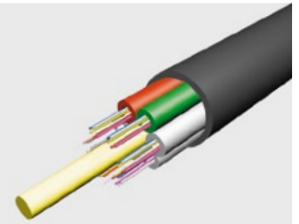
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
LWF2/LWP0	48	4	14.6	8 000	5 000	3	2 100
FWF2/FWP0	72	6	16.7	8 000	5 000	3	2 100
GWF2/GWP0	96	8	17.9	8 000	5 000	3	2 100
HWF2/HWP0	144	12	21.1	8 000	5 000	3	2 100
IWF2/IWP0	216	18	22.1	8 000	4 000	3	2 100

# A-DQ2Y | A-DQH

## Multi loose tube cable – mini cable

### Specification

UM02; CM02; PM02; RM02; VM02 (LSZH)  
UM00; CM00; PM00; RM00; VM00 (PE)



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- H** – LSZH jacket

### Make up

5, 6, 8, 12 loose tubes Ø 1.8 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swallowable yarn and tape

**Ripcord under outer sheath**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

**Packing on reels**

### Application

- » suitable for an air-blown
- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +50 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 let

D – cable outer diameter

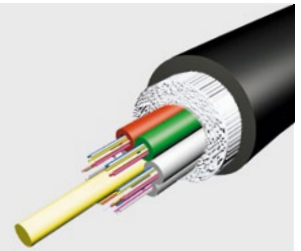
Design code	Max. fibre number	Max. loose tube number	Cable size	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length (m)
			(mm)	(N)	(N/10 cm)	(w/20 Nm)	
UM02	60	5	7.8	350	1 000	3	2 100
CM02	72	6	8.3	650	1 000	3	2 100
PM02	96	8	9.5	1 700	1 000	3	2 100
RM02	144	12	11.5	1 800	1 000	3	2 100
VM02	216	18	11.8	800	900	3	2 100
UM00	60	5	5.8	400	1 000	3	2 100
CM00	72	6	6.4	700	1 000	3	2 100
PM00	96	8	7.5	1 800	1 000	3	2 100
RM00	144	12	9.5	1 800	800	3	2 100
VM00	216	18	10.0	700	900	3	2 100

# J/A-DQ(ZN)H WBF | A-DQ(ZN)2Y WBF

## Multi loose tube cable – standard rodent protection, reduced diameter

### Specification

UE02; CE02; PE02; RE02 (LSZH)  
UE00; CE00; PE00; RE00; VE00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket

### Make up

5, 6, 8, 12 or 18 loose tubes Ø 1.8 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

#### Waterblocking agent

#### Ripcord under inner and outer sheath

#### Common inner LSZH or PE sheath

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

#### On demand:

1) other sheath colours

2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

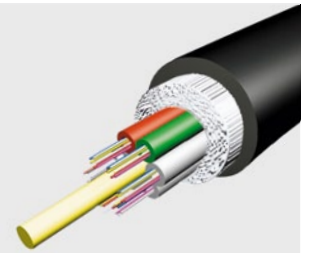
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/15 Nm)	Standard put-up length (m)
UE02/UE00	60	5	8.0 / 7.4	1 000	1 000	3	2 100
CE02/CE00	72	6	8.5 / 7.9	1 400	2 000 / 4 000	3	2 100
PE02/PE00	96	8	10.0 / 9.4	2 800	2 000 / 4 000	3	2 100
RE02/RE00	144	12	12.0 / 11.4	3 200	2 000 / 4 000	3	2 100
VE00	216	18	12.2	2 200	4 000	3	2 100

# J/A-DQ(BN)H WBF | A-DQ(BN)2Y WBF

## Multi loose tube cable – improved rodent protection, reduced diameter

### Specification

CR02; PR02; RR02 (LSZH)  
CR00; PR00; RR00; VR00 (PE)



### Cable codes

- J/A** – indoor/outdoor cable
- A** – outdoor cable
- (BN)** – nonmetallic strength member under sheath with improved rodent protection
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- H** – LSZH jacket according to IEC 60332-3A

### Make up

6, 8, 12, 18 tubes Ø 1.8 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre enforced plastic (FRP) central strength member

#### Waterblocking agent

#### Ripcord under inner and outer sheath

#### Common inner LSZH or PE sheath

#### Common outer LSZH or PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

#### On demand:

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction

#### Packing on reels

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

Note: LSZH version of the cable meets the conditions EN 50266 (EN 60332).

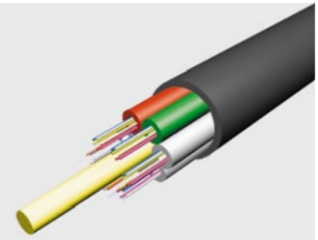
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
CR00/CR02	72	6	10.1	5 000	1 500	3	2 100
PR00/PR02	96	8	11.3	6 800	1 500	3	2 100
RR00/RR02	144	12	13.3	8 300	1 500	3	2 100
VR00	218	18	13.0	3 700	4 000	3	2 100

# A-DQ2Y | A-DQ(ZN)4Y

## Multi loose tube cable – micro cable

### Specification

TM00; QM00; WM00 (PE)  
Z245 (PA)



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- 2Y** – PE jacket
- 4Y** – PA outer jacket

### Make up

6, 8, 12 loose tubes Ø 1.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaible yarn and tape or gel

**Ripcord under outer sheath**

**Common outer LSZH or PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**On demand:**

- 1) other sheath colours
- 2) additional PA (Nylon) jacket – rodent/termite protection, improved chemical resistance, reduced surface friction
- 3) Orgalloy outer jacket (outdoor only) – improved chemical resistance and mechanical protection

**Packing on reels**

### Application

- » suitable for an air-blown
- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » drop cable
- » placement in ducts or on cable trays



### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +50 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 let

D – cable outer diameter

Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
TM00	72	6	5.7	900	1 500	3	2 100
QM00	96	8	6.6	1 000	1 500	3	2 100
WM00	144	12	8.6	900	1 500	3	2 100
Z245	144	12	7.4	200	1 500	3	2 100

# A-D2YT

## Central loose tube self supporting cable – FIG.8

### Specification

Z187/Z188



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- 2Y** – PE jacket
- T** – steel wire messenger

### Make up

2 to 24 colour coded singlemode or multi-mode optical fibres in loose buffer tube  
 Ø 4.5 mm

**Strength elements** – water-swellaible  
 E-glass yarns (WBF)

#### Ripcord

**Common outer LSZH or PE sheath**

**Steel wire messenger FeZn, cord 3.0**

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### Packing on reels

### Application

- » building interconnections
- » FTTx
- » telecommunication and data trunk
- » drop cable
- » for aerial use

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D – cable outer diameter*

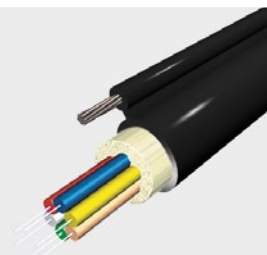
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/5 Nm)	Standard put-up length (m)
Z187	24	1	8.5 × 17.0	134	3 000	2 000	3	2 100
Z188	24	1	8.5 × 20.0	199	7 000	2 000	3	2 100

# A-DQ(ZN)2YT | J/A-DQ(ZN)HT | J/A-DQ(ZN)HT

## Central loose tube self supporting cable – FIG.8 – drop

### Specification

A862 (LSZH)  
A860 (PE)  
A872 (LSZH)



### Cable codes

- A** – outdoor cable
- J/A** – indoor/outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- 2Y** – PE jacket
- H** – LSZH jacket
- T** – steel wire messenger

### Make up

2 to 12 colour coded singlemode or multi-mode optical fibres in loose buffer tube Ø 4.5 mm

**Strength elements** – water-swellaible yarns

#### Ripcord

**Common outer LSZH or PE sheath**

**Steel wire messenger FeZn, cord I.6 (A872 FRP messenger)**

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### Packing on reels

### Application

- » building interconnections
- » FTTx
- » telecommunication and data trunk
- » drop cable
- » for aerial use

### Environmental conditions

Temperature ranges for installation and assembly	–5 °C ÷ +40 °C
Operation temperatures	–30 °C ÷ +70 °C
Transport and store temperatures	–40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

D – cable outer diameter

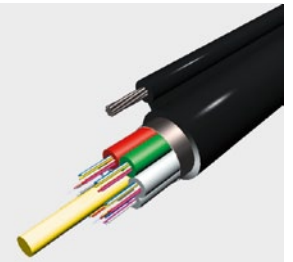
Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/5 Nm)	Standard put-up length (m)
A862	12	1	5.9 × 12.2	81	1 000	1 000	3	2 100
A860	12	1	5.1 × 10.6	45	1 000	1 000	3	2 100
A872	12	1	5.9 × 13.1	75	1 000	2 000	3	2 100

# A-DQ(L)2YT

## Multi loose tube self-supporting cable FIG. 8

### Specification

L83A; F83A; G83A; H83A; I83A



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- 2Y** – PE jacket
- (L)** – water blocking aluminium tape
- T** – steel wire messenger

### Make up

4, 6, 8, 12 or 18 loose tubes Ø 2.5 mm with up to 12 colour coded singlemode or multimode optical fibres in each stranded around fibre reinforced plastic (FRP) central strength member

**Waterblocking agent** – water-swellaable yarn and tape

**Ripcord under outer sheath**

**Logitudinally laid aluminium tape**

**Bearing member FeZn cord 3.0 mm**

**Common outer PE sheath**

**Fibre colours** – see the section Fibre and buffer colour code

**Loose tube colours** – see the section Fibre and buffer colour code

**Sheath colour:** black

**Packing on reels**

### Application

- » building interconnections
- » backbone network routes
- » telecommunication and data trunk
- » secondary distribution
- » for aerial use

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-30 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

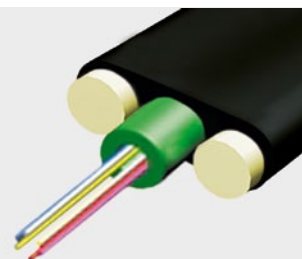
*D – cable outer diameter*

Design code	Max. fibre number	Max. loose tube number	Cable size (mm)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/20 Nm)	Standard put-up length (m)
L83A	48	4	11.4 × 21.4	5 000	2 000	3	2 000
F83A	72	6	13.1 × 23.1	5 000	2 000	3	2 000
G83A	96	8	14.6 × 24.6	5 000	2 000	3	2 000
H83A	144	12	18.5 × 28.5	5 000	2 000	3	2 000
I83A	216	18	19.4 × 29.4	5 000	2 000	3	2 000

# A-D2YT

## Loose tube flat cable – self-supporting

### Specification XS00



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- 2Y** – PE jacket
- T** – supporting element

### Make up

2 to 12 colour coded singlemode or multi-mode optical fibres in loose buffer tube  
 Ø 2.0 mm + 2 FRP elements

#### Common outer PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### Packing on reels

### Application

- » FTTx
- » telecommunication and data trunk
- » drop cable
- » for aerial use

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-40 °C ÷ +70 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 120 mm
Cable lifetime	min. 30 years

*D – cable outer diameter*

*Note: information about cable sag on request*

### Cable clamp on request

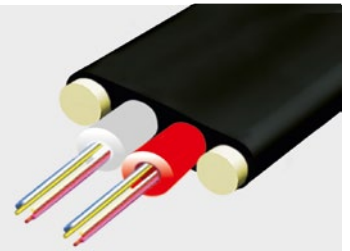


Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/30 Nm)	Standard put-up length (m)
XS00	12	2.0	7.7 × 3.8	26	1 550	4 000	3	2 100 / 4 100

# A-D(2ZN)2YT

## Loose tube flat cable – self-supporting

### Specification Z159



### Cable codes

- A** – outdoor cable
- D** – jelly filled multifibre loose buffer tube
- (2ZN)** – 2 nonmetallic strength member under sheath
- 2Y** – PE jacket
- T** – supporting element

### Make up

2 × 12 colour coded singlemode or multimode optical fibres in loose buffer tube Ø 2.0 mm + 2 FRP elements

#### Common outer PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

#### Packing on reels

### Application

- » FTTx
- » telecommunication and data trunk
- » drop cable
- » for aerial use

### Environmental conditions

Temperature ranges for installation and assembly	-5 °C + +40 °C
Operation temperatures	-40 °C + +70 °C
Transport and store temperatures	-40 °C + +70 °C
Minimum bending radius	min. 120 mm
Cable lifetime	min. 30 years

*D – cable outer diameter*

*Note: information about cable sag on request*

#### Cable clamp on request



Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/30 Nm)	Standard put-up length (m)
<b>Z159</b>	2 × 12	2.0	9.1 × 3.8	38	1 300	4 000	3	2 100 / 4 100

# A-V(ZN)H2YT

## Loose tube flat cable – self-supporting



### Specification Z138

#### Cable codes

- A** – outdoor cable
- V** – tightly buffered optical fibre
- (ZN)** – nonmetallic strength member under sheath
- 2Y** – PE jacket
- H** – LSZH jacket
- T** – supporting element

#### Make up

Singlemode or multimode optical fibres in loose buffer tube  $\varnothing$  2.0 mm + 2 FRP elements

##### Common outer PE sheath

**Fibre colours** – see the section Fibre and buffer colour code

**Tube colours:** white; other tube colours available on request

**Sheath colour:** black

##### Packing on reels

#### Application

- » FTTx
- » telecommunication and data trunk
- » drop cable
- » for aerial use

#### Environmental conditions

Temperature ranges for installation and assembly	-5 °C ÷ +40 °C
Operation temperatures	-20 °C ÷ +50 °C
Transport and store temperatures	-40 °C ÷ +70 °C
Minimum bending radius	min. 120 mm
Cable lifetime	min. 30 years

*D – cable outer diameter*

*Note: information about cable sag on request*

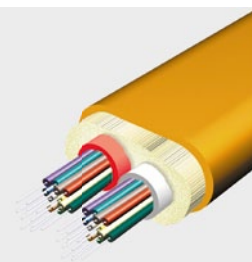
Design code	Max. fibre number	Loose tube diam. (mm)	Cable size (mm)	Net weight (kg/km)	Max. load (installation) (N)	Crush resistance (N/10 cm)	Impact resistance (w/30 Nm)	Standard put-up length (m)
Z138	1	2.0	7.7 × 3.8	29	1 550	4 000	3	2 100 / 4 100

# J/A-DQ (ZN)H

## Flat Twin Tube Cable

### Specification

Z122



### Cable codes

- J/A** – indoor/outdoor cable
- D** – jelly filled multifibre loose buffer tube
- Q** – dry water blocking agent in cable core
- (ZN)** – nonmetallic strength member under sheath
- H** – LSZH jacket according to IEC 60332-3A

### Make up

Loose tubes in common LSZH outer jacket

**Strength elements** – aramid yarns

**Common outer LSZH jacket**

**Simplex sheath and cable jacket colours:**  
yellow (E9), green (G50), orange (G62.5); other colours available on request

**Buffer colours:** 1. natural, 2. blue; other buffer colours available on request

**Packing on reels**

### Application

- » workstation connecting cables
- » computer room cabling
- » short run office cabling
- » placement in cable ducts

### Environmental conditions

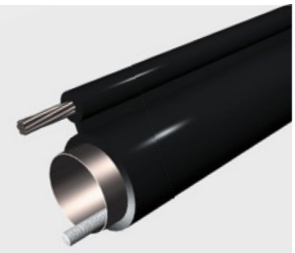
Temperature ranges for installation and assembly	-5 °C + +50 °C
Operation temperatures	-20 °C + +70 °C
Transport and store temperatures	-40 °C + +70 °C
Minimum bending radius	min. 10D
Cable lifetime	min. 30 years

*D – cable outer diameter*

Design code	Cable size	Net weight	Max. load (installation)	Crush resistance	Impact resistance	Standard put-up length
	(mm)	(kg/km)	(N)	(N/10 cm)	(w/5 Nm)	(m)
<b>Z122</b>	4.7 × 7.0	41	620	1 000	3	2 100

# FLES 8,5 | FLES 20

## Self-supporting FIG.8 duct



### Specification

8.0/98

#### Cable codes

- FL** – electrostatic shield
- E** – PE jacket
- S** – self supporting

#### Make up

**Supporting element (messenger)**

– steel cord Ø 3.15 or 4.32 mm

**Retractable element** – POP twine

**Duct** – longitudinally laid aluminum tape, PE laminated on both sides

#### Packing on reels

#### Application

- » for drawing and supporting of fibre optic cables

#### Environmental conditions

Temperature ranges for installation and assembly	–5 °C ÷ +40 °C
Operation temperatures	–30 °C ÷ +70 °C
Transport and store temperatures	–40 °C ÷ +70 °C
Minimum bending radius	min. 15D
Cable lifetime	min. 30 years

*D* – cable outer diameter

Design code	Supporting element diameter	Tensile strength	Internal diameter	External diameter	Cable maximal height
	(mm)	(N)	(mm)	(mm)	(mm)
FLES 8,5	3.15	7 000	8.5	14	23.5
FLES 20	4.32	15 000	20	26	38.5



**KABELOVNA** Děčín Podmokly, s. r. o.  
Ústecká 33, 405 33 Děčín 5  
Czech Republic  
marketing@kabelovna.cz

[www.kabelovna.cz](http://www.kabelovna.cz)