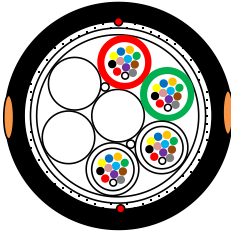
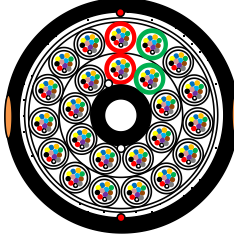
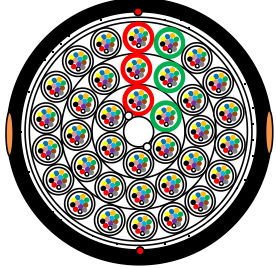


## 1. Application / Construction

CH09

Identification	A-DQ(ZN)B2Y nx12/nx24 E9 G.652D 9,0 kN		
Application	Outdoor installation		
Cross Section (not to scale)	12/24/48/72/96/144F	288/576F	432F
			
Configuration	<ul style="list-style-type: none"> <li>- Loose tube with up to 24 optical fibers, filled with thixotropic compound</li> <li>- Central strength member made of fibre reinforced plastic (FRP) or coated FRP</li> <li>- Stranding: loose tubes (and dummies), SZ stranded around central strength member</li> <li>- Longitudinal water tightness: dry, water blocking yarns and tape</li> <li>- Peripheral strength member: glass yarns</li> <li>- Outer sheath: black HDPE (Halogen free), with two diametrically opposite orange stripes (width 3~5mm), two red ripcords under the sheath</li> <li>- CPR Fca</li> </ul>		
Temperature Range	Storage and transport -30 to +70°C	Installation -10 to +50°C	Operation -30 to +60°C
Standards	IEC 60793-1, IEC 60793-2, IEC 60794-3-10		
ZTT Specification	ZTT 21-116984-3-D		

## 2. Dimension

Number of fibers		12	24	48	72	96	144	288	432	576
Loose tubes x fibers	L1	1x12	2x12	4x12	6x12	8x12	12x12	9x12	6x12	9x24
	L2	--	--	--	--	--	--	15x12	12x12	15x24
	L3	--	--	--	--	--	--	--	18x12	--
Loose tubes / Dummies		5	4	2	0	0	0	0	0	0
Loose tube Ø (±0.2)	mm	2.3							2.4	2.8
Coated FRP/FRP	mm	2.5				3.9 (3.4)	6.9 (3.8)	4.7 (3.8)	2.5	5.7 (3.8)
Outer sheath thickness	mm	1.5						1.7		
Outer diameter (±5%)	mm	12.0				13.1	15.8	19.0	22.5	22.0
Weight	kg	129				150	213	285	375	365

Sizes and values without tolerances are nominal values, the sheath thickness is not including the rip cord position.

## 3. Mechanical Properties

Max. tensile load(Installation)	9000N
Crush resistance / 10 cm	2000N
Bending radius (installation)	20 x cable-Ø
Bending radius (operation)	15 x cable-Ø

See Point 6: Test Methods

## 4. Marking

Fiber Colors 13~24 fiber has one black ring, and the 20 <sup>th</sup> fiber is natural without ring	1	2	3	4	5	6	7	8	9	10	11	12
	red	green	yellow	blue	white	violet	orange	black	grey	brown	pink	aqua
Tube Colors 13~18 <sup>th</sup> tube is white	1	2	3	4	5	6	7	8	9	10	11	12
	red	green	white	white	white	white	white	white	white	white	white	white

Outer Sheath: black, ink jet or hot foil, marking in 1 meter intervals as follows:

**ZTT OPTICAL CABLE A-DQ(ZN)B2Y <n>x<m> G.652D <batch ID> <meter marking >**

## 5. Optical Fiber

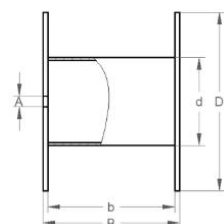
Standard	ITU-T G.652D ZTT-ALF®		
Optical	Fibre attenuation .. before cabling .. after cabling	@ 1310 nm ≤0.34 dB/km ≤0.36 dB/km	@ 1550 nm ≤0.20 dB/km ≤0.22 dB/km
	Mode field diameter (MFD)	9.0 ± 0.4 μm	10.4 ± 0.6 μm
	Zero dispersion wavelength	1300~1324 nm	
	Zero dispersion slope	≤0.092 ps/nm <sup>2</sup> ·km	
	Polarisation mode dispersion (PMD)	≤0.2 ps/√km	
	Cut-off wavelength	≤1260 nm	
	Macro bending loss .. 100 turns Ø50 mm	@1550 nm ≤0.05 dB	@1625 nm ≤0.10 dB
Geometric	Outer diameter	245 ± 10 μm	
	Cladding diameter	125 ± 1.0 μm	
	Core/clad concentricity error	≤0.6 μm	
	Cladding non-circularity	≤1.0 %	
Mechanical	Proof stress	≥0.69 Gpa	

## 6. Test Methods

Test	Conditions	Acceptance criteria
Tensile strength IEC 60794-1-2 E1	Tensile strength: see Point 3 Sample length: ≥ 50 m, Test duration: 1 min	- Fiber strain: ≤0.33%, Δα reversible - No damage
Crush resistance IEC 60794-1-2 E3	Crush: see Point 3 Test duration: 15 mins, number of tests: 3	- Δα ≤0.05dB after test - No damage
Impact IEC 60794-1-2 E4	Impact energy: 5Nm R = 300 mm, number of places/tests: 3	- Δα ≤0.05dB after test - No damage
Repeated bending IEC 60794-1-2 E6	Bending radius: 20x cable Ø 35 cycles, 100N load	- Δα ≤0.05dB after test - No damage
Torsion IEC 60794-1-2 E7	Sample length: 2 m ± 180°, 10 cycles, 100N	- Δα ≤0.05dB after test - No damage
Bend IEC 60794-1-2 E11A	Bending radius: 15x cable Ø 4 bends, 3 cycles	- Δα ≤0.05dB after test - No damage
Temperature cycling IEC 60794-1-2 F1	-30°C.. +60°C 12 hours at each temperature step, 2 cycles	- Δα≤0.05dB/km - No damage
Water penetration IEC 60794-1-2 F5	Sample length: 3 m Water column height: 1 m Test duration: 24 h	- No water leakage

All optical measurements at 1550 nm

## 7. Logistics

Cable type	Standard Length (-1% +3%)	4000 m	
A-DQ(ZN)B2Y 24/48/72	Drum type Dimensions (Weight)	Wood 145*70*75 (625 kg)	
A-DQ(ZN)B2Y 96		Wood 155*70*75 (730 kg)	
A-DQ(ZN)B2Y 144		Wood 155*80*105 (1009 kg)	
A-DQ(ZN)B2Y 288		Wood 185*90*105 (1335 kg)	
A-DQ(ZN)B2Y 432		Wood 215*100*105 (1750 kg)	
A-DQ(ZN)B2Y 576		Wood 215*100*105 (1710 kg)	

Dimensions including protection. Indicative values, actually delivered drum sizes and weights may deviate. Cable ends sealed with caps

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