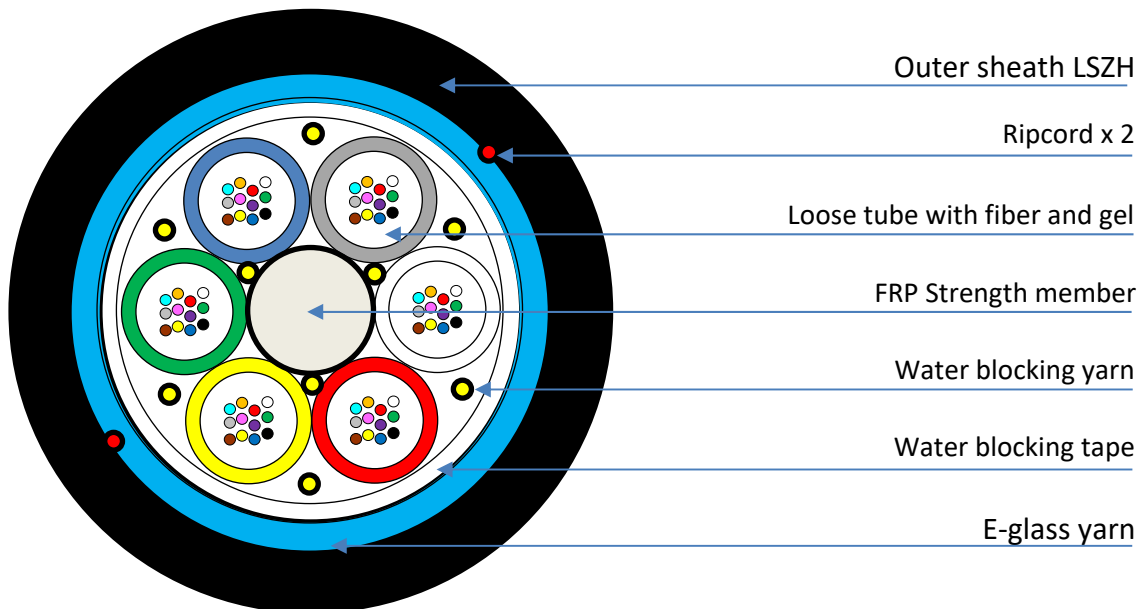




QXXI LITE, FIBER OPTICAL DUCT CABLE, LSZH

RODENT PROTECTED (E-GLASS YARN)



APPLICATION/CONSTRUCTION

Identification	QXXE LITE-R 12/24/48/96/144/192/288 G.652.D		
Application	Duct installation by the means of blowing/pulling		
Cross section (not to scale)	12/24/48/96/144 fibers	192/216/288 fibers	
			
Configuration	<ul style="list-style-type: none"> - Loose tubes with 12 optical fibers, filled with thixotropic compound. - Stranded loose tubes, SZ strand. - Central strength member made of fiber reinforced plastic (FRP), or coated FRP. - Cable strand: Dry, with water blocking yarns and tape. - E-glass yarn for rodent protection - Outer sheath: LSZH, black, two ripcords under the sheath. 		
Temperature Range	Storage and transport -20 to +70°C	Installation -20 to +60°C	Operation -40 to +70°C
Standards	IEC 60793-1, IEC 60793-2, IEC 60794-3-10		
LSZH	Yes		
CPR	Fca (EN 50575:2014+A1:2016)		

1. DIMENSIONS

Number of fibers		12	24	48	96	144	192	216	288
Loose tube x fibers	/	1x12	2x12	4x12	8x12	12x12	16x12	16x12	24x12
Loose tube/Dummies	/	1/5	2/4	4/2	8/0	12/0	6/0 10/2	6/0 12/0	9/0 15/0
Loose tube \varnothing ($\pm 0,1$)	mm	1.9	1.9	1.9	2.1	2.1	2.1	2.1	2.1
CSM (FRP)	mm	2.0			3.5 (2.6)	6.1 (2.6)	2.25		4.2 (2.6)
Outer sheath thickness	mm	Nominal 1.5							
Outer diameter ($\pm 0,2$)	mm	9.3			11.2	13.8	14.4		16.2
Ripcord	pcs.	2, red color							
Weight/km (ca.)	mm	95			135	190	195	195	250

Sizes and values without tolerances are nominal values, sheath thickness does not consider ripcord portion.

2. MECHANICAL PROPERTIES

Number of fibers	12	24	48	96	144	192	288
Max tensile load	1.5kN						
Crush resistance/100 mm	1.0kN						
Bending radius (Dynamic)	20 x OD						
Bending radius (Static)	12 x OD						

See point 6: Test Methods

3. MARKING

Fibre color code	1	2	3	4	5	6	7	8	9	10	11	12
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink
Tube color code	1	2	3	4	5	6	7	8	9	10	11	12
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink
	13	14	15	16	17	18	19	20	21	22	23	24
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink

Outer sheath marking: Black, ink jet white print marking with 1-meter intervals as follows:

FIBERWORKS QXXI-LITE <n> G.652.D <batch ID> <meter marking>

<n>: Fiber qty.

4. OPTICAL FIBER

Standard	ITU-T G.652.D		
Optical	Fiber attenuation, cabled	1310 nm: ≤ 0.35 dB/km	1550 nm: ≤ 0.21 dB/km
	Mode Field Diameter (MFD)	1310 nm: 9.1 ± 0.4 μ m	1550 nm: 0.3 ± 0.6 μ m
	Zero dispersion wavelength	1300~1324 nm	
	Zero dispersion slope	≤ 0.092 ps/nm ² · km	
	Polarization mode dispersion (PMD)	≤ 0.1 ps/√km	
	Polarization mode dispersion maximum individual fiber	$\lambda_{cc} \leq 0.2$ ps/√km	
	Cut-off wavelength	≤ 1260 nm	
	Macro bending loss, 100 turns $\varnothing 60$ mm	1550 nm: ≤ 0.05 dB	
Geometrical	Outer diameter (uncolored)	245 ± 10 μ m	
	Cladding diameter	125 ± 0.7 μ m	
	Core/clad concentricity error	≤ 12.0 μ m	
	Cladding non-circularity	≤ 1.0 %	
Mechanical	Proof stress	≥ 0.69 Gpa	

5. TEST METHODS

Test	Conditions	Acceptance criteria
Tensile Strength IEC 60794-1-21-E1	Tensile load: see Point 3 Sample length: ≥ 50 m Test duration: 1 min	- Additional attenuation: ≤ 0.05 dB after test - No damage to outer jacket nor inner element
Crush resistance IEC 60794-1-2 E3A	Crush: see Point 3 Test duration: 1 min	- Additional attenuation: ≤ 0.05 dB after test - No damage to outer jacket nor inner element
Impact IEC 60794-1-21-E4	Radius: 300 mm Impact energy: 10J Impact number: 1 Impact points: 3	- Additional attenuation: ≤ 0.1 dB after test - No damage to outer jacket nor inner elements
Repeated bending IEC 60794-1-2 E6	Bending radius: 20x cable \varnothing Load: 150N Cycles: 25	- Additional attenuation: ≤ 0.05 dB after test - No damage to outer jacket nor inner elements
Torsion IEC 60794-1-2 E7	Sample length: 1 m Angles: $\pm 180^\circ$ Cycles: 10 Load: 1500N	- Additional attenuation: ≤ 0.1 dB after test - No damage to outer jacket nor inner elements
Temperature cycling IEC 60794-1-2 F1	Sample length: ≥ 1000 m Steps: $-40^\circ\text{C} \sim +70^\circ\text{C}$ Duration: 12 hours Cycles: 2	- $\Delta\alpha \leq 0.05$ dB/km - Attenuation reversible - No damage

Water penetration IEC 60794-1-2 F5	Sample length: 3 m Duration: 24 h Water column height: 1 m	- No water leak through the open end
Filling compound flow IEC 60794-1-2-E14	Sample length: 0.2 m Duration: 24 h Temperature: 70°C	- No compound flow from the cable
Other parameters	- According to IEC 60794-1	

6. ORDERING INFORMATION

Elnr.	Product code	Product	Fiber qty	Fiber type	Category (fiber)
	K-QXIL-S-G2D-G12	G12 QXXI LITE, G.652.D	12	SM 9/125	OS2
	K-QXIL-S-G2D-G24	G24 QXXI LITE, G.652.D	24	SM 9/125	OS2
	K-QXIL-S-G2D-G48	G48 QXXI LITE, G.652.D	48	SM 9/125	OS2
	K-QXIL-S-G2D-G96	G96 QXXI LITE, G.652.D	96	SM 9/125	OS2
	K-QXIL-S-G2D-G144	G144 QXXI LITE, G.652.D	144	SM 9/125	OS2
	K-QXIL-S-G2D-G192	G192 QXXI LITE, G.652.D	192	SM 9/125	OS2
	K-QXIL-S-G2D-G216	G216 QXXI LITE, G.652.D	216	SM 9/125	OS2
	K-QXIL-S-G2D-G288	G288 QXXI LITE, G.652.D	288	SM 9/125	OS2

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