



K20 & L120 LSZH Armoured F/FTP Cat6 Cables

Applications

The cables are designed for high speed data transmissions, and are suitable for installations in cable trays or on hooks.

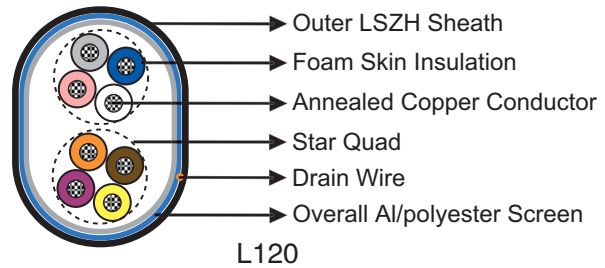
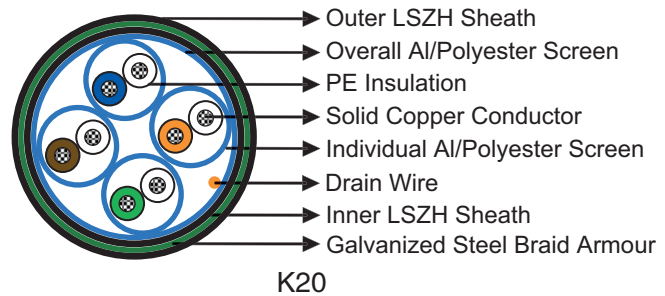
Standards

- RATP CAT6-K20 (for K20 cable)
- FRANCE TELECOM S31-10/20 & NF C 93.531-6/7 (for L120 cable)



Construction

- Conductors: Class 1 AWG23 solid copper conductor (for K20 cable); 0.6mm annealed copper conductor (for L120 cable).
- Insulation: Solid polyethylene (for K20 cable); Foam skin (cellular PE + solid PE) (for L120 cable).
- Cabling Element: Two conductors are twisted together to form a pair (for K20 cable); Four conductors are twisted together to form a quad (for L120 cable).
- Core Wrapping (for L120 cable): Non-hygroscopic plastic tape with overlapping.
- Individual Screen (for K20 cable): Alu/polyester shield on each pair.
- Overall Screen: Alu/polyester shield.
- Drain Wire: Tinned copper drain wire, 0.5mm nominal diameter.
- Inner Sheath (for K20 cable): LSZH.
- Armour (for K20 cable): Galvanized steel braid armour.
- Outer Sheath: LSZH.



Optional

Armoured L120 Cables: Tinned copper braid armoured cables can be offered upon request.

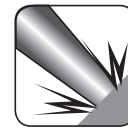
Electrical Characteristics at 20°C

Nominal Conductor Diameter	mm	0.56 (K20)	0.6 (L120)
AWG		23	23
Maximum Conductor Resistance	Ω/km	146.4	133.2
Minimum Insulation Resistance @500 V DC	MΩ/km	5000	5000
Characteristics Impedance @100MHz	Ω	100	120+15
Maximum Capacitance Unbalance			
Real/earth	pF/km	1600	300
Maximum Average Attenuation			
@1MHz	dB/100m	2.0	2.0
@4MHz	dB/100m	3.8	3.8
@10MHz	dB/100m	6.0	6.0
@16MHz	dB/100m	7.6	7.6
@25MHz	dB/100m	9.5	9.5

@31.25MHz	dB/100m	10.7	10.7
@62.5MHz	dB/100m	15.4	15.4
@100MHz	dB/100m	19.8	19.8
@250MHz	dB/100m	32.9	32.9
Minimum NEXT Pair to Pair			
@1MHz	dB	77.3	77.3
@4MHz	dB	68.3	68.3
@10MHz	dB	62.3	62.3
@16MHz	dB	59.2	59.2
@25MHz	dB	56.3	56.3
@31.25MHz	dB	54.9	54.9
@62.5MHz	dB	50.4	50.4
@100MHz	dB	47.3	47.3
@250MHz	dB	41.3	41.3
Minimum ELFEXT Pair to Pair			
@1MHz	dB	68.8	68.8
@4MHz	dB	56.8	56.8
@10MHz	dB	48.8	48.8
@16MHz	dB	44.7	44.7
@25MHz	dB	40.8	40.8
@31.25MHz	dB	38.9	38.9
@62.5MHz	dB	32.8	32.8
@100MHz	dB	28.8	28.8
@250MHz	dB	20.8	20.8

➤ Mechanical and Thermal Properties

- Minimum Bending Radius: 12×OD (static); 24×OD (dynamic)
- Temperature Range: -40°C to +60°C (during operation); -10°C +60°C (during installation)



Impact Resistant



Mineral Oil Resistant



Acid&Alkaline Resistant

➤ Dimensions and Weight

K20 cables

Cable Code	No. of pairs	Nominal Sheath Thickness mm		Nominal Overall Diameter mm	Nominal Weight kg/km
		Inner	Outer		
0.56mm conductor, 1.45mm Insulated Wire					
RD/K20-F/FTPCat6-2Y(St)H(SWB)H-PIMF-4P0.56	4	1.0	1.0	11.7	156

L120 cables

Cable Code	No. of pairs	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.6mm conductor, 1.34mm Insulated Wire				
RD/L120-F/FTPCat6-02YHH-4P0.6	4(2Q)	1.8	8.5 x 6*	60
RD/L120-F/FTPCat6-02YHH-8P0.6	8(2 x 4p)	1.8	18 x 6**	120
RD/L120-F/FTPCat6-02YHH-12P0.6	12(3 x 4p)	1.8	16	235
RD/L120-F/FTPCat6-02YHH-32P0.6	32(4 x 4Q)	1.8	19	360
RD/L120-F/FTPCat6-02YHH-64P0.6	64(8 x 4Q)	1.8	30	675
RD/L120-F/FTPCat6-02YHH-128P0.6	128(4SU x 4Q)	1.8	40	1250

SU=super unit. * For 4 pair L120 cable, 8 insulated wires form 2 quads and the cable is flat.

** For 8 pair L120 cable, two flat quads are assembled under a common LSH sheath.



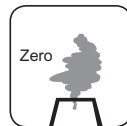
Laid in Cable Trays/on Hooks



Flame Retardant
NF C32-070-2.1(C2)
IEC 60332-1/EN 50265-2-1



Fire Retardant
NF C32-070-2.2(C1)
IEC 60332-3/EN50266



Zero Halogen
IEC 60754-1/NF C20-454
EN 50267-2-1



Low Smoke Emission
IEC 61034/NFC20-902
EN 50268/NF C32-073



Low Corrosivity
EN 50267-2-2/NF C32-074
IEC 60754-2/NF C20-453



Low Toxicity



K209B LSZH Armoured Optical Fiber Cables

Applications

The cables are designed for long distance telecommunication and using optical fibres in urban railways infrastructure. These low smoke halogen-free cables are laid on hooks, pulled through ducts or cable trays.

Standards

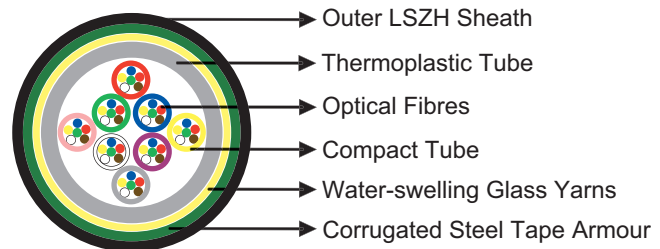
- RATP K209B or RATP K209A



Construction

- Compact Tube: 6 or 12 singlemode optical fibres G652 or multimode fibers assembled under thermoplastic "peelable" skin. Tube diameter: 1mm.

- Filling: Water-swelling yarns.
- Tube: Thermoplastic.
- Peripheral Strength Member: Water-swelling glass yarns.
- Armour: Corrugated steel tape armour 25/100.
- Sheath: LSZH.



Optional

K209A Type: For K209A type, the cables have loose tubes with 6-12 fibers, steel wire strand as central strength member, glass yarn reinforced, incorporating a corrugated steel tape armour and an outer UV stabilized LSZH jacket.

Electrical Characteristics at 20°C

Optical & Geometrical Properties for Single Mode Fibers

Maximum Attenuation		G652
@1310nm	dB/km	0.35
@1550nm	dB/km	0.22
Maximum Chromatic Dispersion		
Between 1260 and 1360nm	ps/(nm/km)	3.5
Between 1530 and 1565nm	ps/(nm/km)	19
Zero Dispersion Wavelength	nm	1310±11
Zero Dispersion Slope	ps/(nm ² .km)	0.09
Numerical Aperture		0.14
Point discontinuity	dB	0.1
PMD (individual fiber)	ps/km	0.2
Maximum Cutoff Wavelength	nm	1260
Cladding Diameter	um	125±1
Core/Cladding Concentricity Error	um	≤0.5
Cladding Non Circularity	%	≤1
Coating Non Circularity	%	≤6
Proof Test Level	Kpsi (GN/m ²)	100 (0.7)
Crush Resistance	N/cm	300
Maximum Laying Tension	N	3000

Optical & Geometrical Properties for Multimode Fibers

		50/125	62.5/125
Maximum Attenuation			
@850nm	dB/km	≤2.5	≤3.0
@1300nm	dB/km	≤0.7	≤0.8
Maximum Chromatic Dispersion			
@850nm	MHz*km	≥500	≥200
@1300nm	MHz*km	≥800	≥500
Zero Dispersion Wavelength	nm	1310	1310
Numerical Aperture	-	0.20±0.015	0.275±0.015
Core Diameter	um	50±3	62.5±3
Cladding Diameter	um	125±2	125±2
Core/Cladding Concentricity Error(Offset)	um	≤1.5	≤1.5
Coating-Clad Concentricity Error(Offset)	um	≤8	≤8
Core Non-Circularity	%	≤6	≤6
Cladding Non-Circularity	%	≤2	≤2
Coating Diameter	um	245±10	245±10
Proof-Test Level	Kpsi (GN/m ²)	100 (0.7)	100 (0.7)

➤ Mechanical and Thermal Properties

- Bending Radius: 20×OD
- Temperature Range: -40°C to +60°C (during operation); -10°C +60°C (during installation)

➤ Dimensions and Weight

K209A

Cable Code	No. of fibres	Distribution	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
RO/K209A-ML-C-9-TnxFn-SR-(STA)H	1-36	6 fibre per tubes	1.8	12	190
RO/K209A-ML-C-9-TnxFn-SR-(STA)H	42-72	6/12 fibre per tubes	1.8	13.5	230

Tn: Number of tubes; Fn: Number of fibers in a tube

K209B

Cable Code	No. of fibres	No of Tubes x No of Fibers/Tube	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
Singlemode Fibres From 6 to 36 OF – G652					
RO/K209B-ML-C-9-2x6-F-(STA)H	12	2 tubes of 6 OF	1.8	13	112
RO/K209B-ML-C-9-4x6-F-(STA)H	24	4 tubes of 6 OF	1.8	13	112
RO/K209B-ML-C-9-6x6-F-(STA)H	36	6 tubes of 6 OF	1.8	13	112
Singlemode Fibres From 48 to 72 OF – G652					
RO/K209B-ML-C-9-8x6-F-(STA)H	48	8 tubes of 6 OF	2.5	15.5	230
RO/K209B-ML-C-9-6x12-F-(STA)H	72	6 tubes of 12 OF	2.8	15.5	230
Multimode Fibres From 6 to 36 OF – 50/125					
RO/K209B-ML-C-9-1x6-F-(STA)H	6	1 tubes of 6 OF	1.8	13	112
RO/K209B-ML-C-9-2x6-F-(STA)H	12	2 tubes of 6 OF	1.8	13	112



Impact Resistant



Mineral Oil Resistant



Acid&Alkaline Resistant



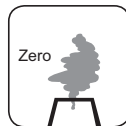
Laid in Cable Trays/on Hooks



Flame Retardant
NF C32-070-2.1(C2)
IEC 60332-1/EN 50265-2-1



Fire Retardant
NF C32-070-2.2(C1)
IEC 60332-3/EN50266



Zero Halogen
IEC 60754-1/NF C20-454
EN 50267-2-1



Low Smoke Emission
IEC 61034/NFC20-902
EN 50268/NF C32-073



Low Corrosivity
EN 50267-2-2/NF C32-074
IEC 60754-2/NF C20-453



Low Toxicity



K26 LSZH 50/75Ω Coaxial Cables

Applications

The 50Ω cables are HF transmission coaxial cables for GSM antennas, and the 75Ω cables are HF transmission coaxial cables for cameras (type KX6), and video surveillance (type 11 RTC). The Halogen-free cables are suitable for laid on hooks, and pulled through walls or through technical ducts.



Standards

- RATP K26
- Fire Performance: NF C 32070.2.2

Construction

- Inner Conductors:

50Ω cables:

Flexible Type (F)- solid copper coated aluminium (for 1/4" , 3/8" & 1/2" F conductor); red copper tube (for 7/8" and 1'1/4 F conductor); corrugated red copper tube (for 1'5/8 F conductor).

Super Flexible Type (SF) - solid copper coated aluminium (for 3/8" & 1/2" SFconductor); helical corrugated copper tube (for 7/8" SF conductor); copper wire (for 1/4" SFconductor).

Extra Flexible (XF) – copper wire (for 1/4" XF conductor); solid copper coated aluminium (for 3/8" XF conductor).

75Ω cables: solid red copper (for type 11 RTC) or red copper tube (for type KX6).

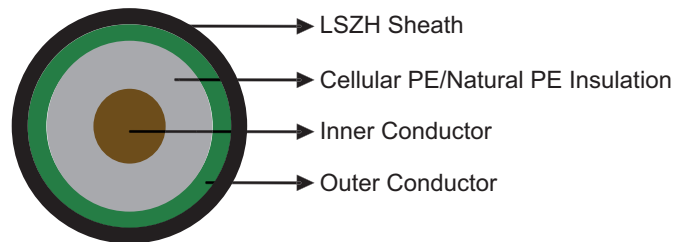
- Dielectric: Cellular PE or natural PE (only for KX6 type).

- Outer Conductor:

50Ω cables: corrugated copper tube.

75Ω cables: copper braid.

- Outer sheath: LSZH.



Electrical Characteristics at 20°C

50 Ω Cables

Type of Cable	inch	1/4"F	3/8"F	1/2"F	7/8"F	1'1/4F	1'5/8F
Impedance	Ω	50	50	50	50	50	50
Attenuation							
@10MHz	dB/100m	1.25	1.46	0.65	0.34	0.25	0.2
@150MHz	dB/100m	4.99	4.22	2.61	1.45	1.02	0.85
@200MHz	dB/100m	5.8	4.90	3.04	1.69	1.19	1.00
@450MHz	dB/100m	8.8	7.51	4.66	2.61	1.86	1.57
@900MHz	dB/100m	12.8	11.1	6.78	3.81	2.75	2.34
@1000MHz	dB/100m	13.5	11.6	7.18	4.04	2.93	2.49

@1500MHz	dB/100m	17.0	14.4	8.99	5.08	3.72	3.17
@1700MHz	dB/100m	18.3	15.5	9.64	5.45	4.01	3.42
Average Power Rating							
@10MHz	KW	5.79	7.23	13	28.0	41	57
@150MHz	KW	1.45	1.81	3.2	7.0	11	13
@200MHz	KW	1.25	1.56	2.75	6.0	9.0	11
@450MHz	KW	0.818	1.02	1.8	3.88	5.5	6.9
@900MHz	KW	0.566	0.70	1.25	2.65	3.83	4.49
@1000MHz	KW	0.533	0.663	1.18	2.50	3.60	4.20
@1500MHz	KW	0.426	0.53	0.947	1.99	2.82	3.22
@1700MHz	KW	0.398	0.494	0.884	1.85	2.61	2.96
Velocity of Propagation	%	85	88	88	88	88	88

Type of Cable	inch	1/4"SF	3/8"SF	1/2"SF	7/8"SF	1/4"XF	3/8"XF
Impedance	Ω	50	50	50	50	50	50
Attenuation							
@10MHz	dB/100m	1.71	1.3	0.83	0.39	2.31	1.098
@150MHz	dB/100m	6.89	4.89	3.87	1.59	7.44	4.38
@200MHz	dB/100m	8.01	5.59	4.53	1.85	8.54	5.098
@450MHz	dB/100m	12.31	8.49	7.09	2.85	14.3	7.83
@900MHz	dB/100m	17.92	12.66	10.45	4.15	20.5	11.4
@1000MHz	dB/100m	18.98	13.5	11.09	4.4	21.83	12.1
@1500MHz	dB/100m	23.78	17.43	13.98	5.52	27.13	15.1
@1700MHz	dB/100m	25.51	18.91	15.03	5.92	29.5	16.2
Average Power Rating							
@10MHz	KW	2.8	6.0	8.4	21.5	3.8	7.02
@150MHz	KW	0.7	1.52	2.1	5.4	0.9	1.76
@200MHz	KW	0.6	1.31	1.81	4.6	0.8	1.51
@450MHz	KW	0.39	0.86	1.18	3.0	0.51	0.99
@900MHz	KW	0.272	0.593	0.815	2.07	0.37	0.68
@1000MHz	KW	0.257	0.56	0.77	1.95	0.34	0.64
@1500MHz	KW	0.206	0.449	0.616	1.55	0.26	0.51
@1700MHz	KW	0.192	0.42	0.575	1.45	0.24	0.48
Velocity of Propagation	%	83	81	82	88	84	85

75 Ω Cables

Type of Cable	inch	11 RTC	KX6
Impedance	Ω	75	75
@50MHz	dB/100m	2.5	8.13
@100MHz	dB/100m	3.6	11.73
@150MHz	dB/100m	4.6	14.53
@200MHz	dB/100m	5.4	16.92
@500MHz	dB/100m	8.5	27.0
@800MHz	dB/100m	10.5	35.1
@1000MHz	dB/100m	12.2	40.02
Velocity of Propagation	%	87	66

➤ Mechanical and Thermal Properties

- Minimum Bending Radius: 7.5×OD
- Temperature Range: 50Ω cables: -40°C to +85°C (during operation); -20°C to +60°C (during installation);
75Ω cables: -20°C to +85°C (during operation); -10°C to +60°C (during installation).



Dimensions and Weight

50 Ω Cables

Cable Code	Nominal Inner Conductor Diameter mm	Nominal Outer Conductor Diameter mm	Nominal Overall Diameter mm	Nominal Weight kg/km
1/4" F Cable Type				
RS/K26-F-HCAAYZ-50-6(1/4")	2.5	7.6	9.5	145
3/8" F Cable Type				
RS/K26-F-HCAAYZ-50-8(3/8")	3.3	9.5	11.5	204
1/2" F Cable Type				
RS/K26-F-HCAAYZ-50-12(1/2")	4.8	13.7	16.0	248
7/8" F Cable Type				
RS/K26-F-HCTAYZ-50-22(7/8")	9.0	24.8	27.75	575
1 1/4" F Cable Type				
RS/K26-F-HCTAYZ-50-32(1 1/4")	13.0	35.7	39.5	1133
1 5/8" F Cable Type				
RS/K26-F-HHTAYZ-50-42(1 5/8")	17.3	46.2	50.0	1631
1/4" SF Cable Type				
RS/K26-HRYZ-50-5(1/4" SF)	1.9	6.4	7.95	99
3/8" SF Cable Type				
RS/K26-HRCAYZ-50-7(3/8" SF)	2.8	9.6	11.15	159
1/2" SF Cable Type				
RS/K26-HRCAYZ-50-9(1/2" SF)	3.6	12.1	13.65	201
7/8" SF Cable Type				
RS/K26-HRCTYZ-50-22(7/8" SF)	9.4	25.0	27.5	550
1/4" XF Cable Type				
RS/K26-HRYZ-50-5(1/4" XF)	5.75	5.6	6.85	69
3/8" XF Cable Type				
RS/K26-HRCAYZ-50-7(3/8" XF)	2.76	8.0	10.1	111

*F = flexible, SF = super flexible, XF = extraflexible

75 Ω Cables

Cable Code	Nominal Inner Conductor Diameter mm	Nominal Outer Conductor Diameter mm	Nominal Overall Diameter mm	Nominal Weight kg/km
11 RTC Cable Type				
RS/K26-11RTC-BC80-H	1.7	7.85	10.3	115
KX6 Cable Type				
RS/K26-KX6-BC80-H	0.6	4.85	7.2	66



Impact Resistant



Mineral Oil Resistant



Acid & Alkaline Resistant



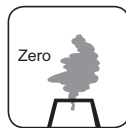
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Low Smoke Emission
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EN 50268/NF C32-073



Low Corrosivity
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