

# LSZH Fire Resistant Cables

0.6/1kV 2-Core ~ 5-Core

Mica Tape, XLPE Insulated, Unarmoured & Armoured, LSZH Sheathed Cable

Description: CU/MT/XLPE/LSZH-AT-UV or CU/MT/XLPE/LSZH/SWA/LSZH-AT-UV

Model Code: MXL-AT-UV or MXLSL-AT-UV



Application :	This cable is designed for areas where the integrity of the electrical circuit is critical in maintaining power supply. Applications include emergency lightings, control and power circuits, power stations, fire alarm systems, underground tunnels, sewage treatment plants, and high-rise buildings.
Voltage rating :	0.6/1kV
Construction :	Plain annealed copper (IEC 60228 Class 2), mica tape fire barrier, XLPE compound insulated, unarmoured or galvanized steel wires armoured, anti-termite and UV resistant LSZH compound sheathed cable
Insulation colour :	2-Core: Brown, Blue; 3-Core: Brown, Black, Grey; Brown, Blue, Green/Yellow; 4-Core: Brown, Black, Grey, Blue; Brown, Black, Grey, Green/Yellow; 5-Core: Brown, Black, Grey, Blue, Green/Yellow; (Other colour upon request)
Sheath colour :	Orange (Other colour upon request)
Specification :	IEC 60502-1, SS 299, BS 6387, IEC 60332, IEC 60332-1-2, IEC 60332-3, IEC 60754, IEC 61034-2
Operating temperature :	90°C

### 2-CORE [2C]

(Brown, Blue) (1-phase and neutral)

Conductor	Insulation	Unarmoured Cable			Armoured Cable		
		Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	Thickness (mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	<b>07024065</b>	12.2	150	<b>07024054</b>	16.4	450
2.5	0.7	<b>08024065</b>	12.6	193	<b>08024054</b>	17.3	511
4	0.7	<b>09024065</b>	13.8	250	<b>09024054</b>	18.4	595
6	0.7	<b>10024065</b>	15.0	326	<b>10024054</b>	19.5	809
10	0.7	<b>11024065</b>	17.5	411	<b>11024054</b>	22.1	940
16	0.7	<b>12024065</b>	19.5	550	<b>12024054</b>	24.3	1100
25 (cs)	0.9	<b>13024065</b>	22.5	792	<b>13024054</b>	28.0	1634
35 (cs)	0.9	<b>14024065</b>	26.0	1043	<b>14024054</b>	31.5	2000
50 (cs)	1.0	<b>15024065</b>	29.0	1337	<b>15024054</b>	34.0	2450
70 (cs)	1.1	<b>16024065</b>	32.3	1828	<b>16024054</b>	39.0	3200
95 (cs)	1.1	<b>17024065</b>	36.0	2419	<b>17024054</b>	43.5	4149

**Current rating and voltage drop**

For Unarmoured Cable, please refer to Table 14 & 15 (Page 60)  
For Armoured Cable, please refer to Table 16 & 17 (Page 61)

(cs) : Circular Compact Stranded Conductor

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Description: CU/MT/XLPE/LSZH-AT-UV or CU/MT/XLPE/LSZH/SWA/LSZH-AT-UV

Model Code: MXL-AT-UV or MXLSL-AT-UV

3-CORE [3C] (Brown, Black, Grey) (3-phase, three wire)							
Conductor	Insulation	Unarmoured Cable			Armoured Cable		
Nominal Area	Thickness	Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	07034623	12.3	170	07034049	17.1	420
2.5	0.7	08034623	13.8	200	08034049	18.0	500
4	0.7	09034623	15.2	300	09034049	18.9	600
6	0.7	10034623	16.8	380	10034049	20.1	883
10	0.7	11034623	18.6	550	11034049	23.1	1086
16	0.7	12034623	21.0	760	12034049	25.2	1370
25 (cs)	0.9	13034623	24.0	1068	13034049	29.2	1900
35 (cs)	0.9	14034623	27.4	1420	14034049	33.2	2458
50 (cs)	1.0	15034623	30.5	1838	15034049	36.8	3006
70 (cs)	1.1	16034623	34.5	2536	16034049	42.0	4206
95 (cs)	1.1	17034623	39.0	3401	17034049	46.1	5400
120 (cs)	1.2	18034623	42.5	4203	18034049	49.4	6450
150 (cs)	1.4	19034623	46.5	5100	19034049	55.0	8200
185 (cs)	1.6	20034623	52.0	6357	20034049	60.0	9800
240 (cs)	1.7	21034623	58.6	8226	21034049	68.0	12300
300 (cs)	1.8	22034623	64.5	10212	22034049	74.2	14800
400 (cs)	2.0	23034623	73.0	13000	23034049	83.0	17600

3-CORE [3G] (Brown, Blue, Green/Yellow) (1-phase and earth)							
Conductor	Insulation	Unarmoured Cable			Armoured Cable		
Nominal Area	Thickness	Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	07034164	12.3	170	07034019	17.1	420
2.5	0.7	08034164	13.8	200	08034019	18.0	500
4	0.7	09034164	15.2	300	09034019	18.9	600
6	0.7	10034164	16.8	380	10034019	20.1	883
10	0.7	11034164	18.6	550	11034019	23.1	1086
16	0.7	12034164	21.0	760	12034019	25.2	1370
25 (cs)	0.9	13034164	24.0	1068	13034019	29.2	1900
35 (cs)	0.9	14034164	27.4	1420	14034019	33.2	2458
50 (cs)	1.0	15034164	30.5	1838	15034019	36.8	3006
70 (cs)	1.1	16034164	34.5	2536	16034019	42.0	4206
95 (cs)	1.1	17034164	39.0	3401	17034019	46.1	5400
120 (cs)	1.2	18034164	42.5	4203	18034019	49.4	6450
150 (cs)	1.4	19034164	46.5	5100	19034019	55.0	8200
185 (cs)	1.6	20034164	52.0	6357	20034019	60.0	9800
240 (cs)	1.7	21034164	58.6	8226	21034019	68.0	12300
300 (cs)	1.8	22034164	64.5	10212	22034019	74.2	14800
400 (cs)	2.0	23034164	73.0	13000	23034019	83.0	17600

**Current rating and voltage drop**

For Unarmoured Cable, please refer to Table 14 & 15 (Page 60)  
For Armoured Cable, please refer to Table 16 & 17 (Page 61)

(cs) : Circular Compact Stranded Conductor

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0.6/1KV 2-Core ~ 5-Core

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Description: CU/MT/XLPE/LSZH-AT-UV or CU/MT/XLPE/LSZH/SWA/LSZH-AT-UV

Model Code: MXL-AT-UV or MXLSL-AT-UV

4-CORE [4C]							
(Brown, Black, Grey, Blue) (3-phase and neutral)							
Conductor	Insulation	Unarmoured Cable			Armoured Cable		
Nominal Area	Thickness	Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	07044008	14.3	190	07044165	18.0	475
2.5	0.7	08044008	15.2	248	08044165	18.9	570
4	0.7	09044008	16.5	335	09044165	20.1	690
6	0.7	10044008	18.0	440	10044165	22.5	940
10	0.7	11044008	20.6	670	11044165	24.5	1267
16	0.7	12044008	23.0	933	12044165	28.1	1776
25 (cs)	0.9	13044008	26.7	1364	13044165	31.6	2400
35 (cs)	0.9	14044008	30.4	1822	14044165	36.1	2973
50 (cs)	1.0	15044008	34.1	2386	15044165	40.6	4027
70 (cs)	1.1	16044008	38.5	3324	16044165	46.0	5300
95 (cs)	1.1	17044008	43.0	4435	17044165	51.3	6910
120 (cs)	1.2	18044008	46.5	5492	18044165	55.3	8500
150 (cs)	1.4	19044008	51.5	6691	19044165	60.2	9683
185 (cs)	1.6	20044008	57.5	8341	20044165	66.4	11764
240 (cs)	1.7	21044008	65.0	10798	21044165	74.0	14610
300 (cs)	1.8	22044008	71.9	13411	22044165	82.0	17598
400 (cs)	2.0	23044008	81.0	17000	23044165	92.0	25500

4-CORE [4G]							
(Brown, Black, Grey, Green/Yellow) (3-phase and earth)							
Conductor	Insulation	Unarmoured Cable			Armoured Cable		
Nominal Area	Thickness	Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	07044029	14.3	190	07044020	18.0	475
2.5	0.7	08044029	15.2	248	08044020	18.9	570
4	0.7	09044029	16.5	335	09044020	20.1	690
6	0.7	10044029	18.0	440	10044020	22.5	940
10	0.7	11044029	20.6	670	11044020	24.5	1267
16	0.7	12044029	23.0	933	12044020	28.1	1776
25 (cs)	0.9	13044029	26.7	1364	13044020	31.6	2400
35 (cs)	0.9	14044029	30.4	1822	14044020	36.1	2973
50 (cs)	1.0	15044029	34.1	2386	15044020	40.6	4027
70 (cs)	1.1	16044029	38.5	3324	16044020	46.0	5300
95 (cs)	1.1	17044029	43.0	4435	17044020	51.3	6910
120 (cs)	1.2	18044029	46.5	5492	18044020	55.3	8500
150 (cs)	1.4	19044029	51.5	6691	19044020	60.2	9683
185 (cs)	1.6	20044029	57.5	8341	20044020	66.4	11764
240 (cs)	1.7	21044029	65.0	10798	21044020	74.0	14610
300 (cs)	1.8	22044029	71.9	13411	22044020	82.0	17598
400 (cs)	2.0	23044029	81.0	17000	23044020	92.0	25500

**Current rating and voltage drop**

For Unarmoured Cable, please refer to Table 14 & 15 (Page 60)

For Armoured Cable, please refer to Table 16 & 17 (Page 61)

(cs) : Circular Compact Stranded Conductor

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Model Code: MXL-AT-UV or MXLSL-AT-UV

## 5-CORE [5G]

(Brown, Black, Grey, Blue, Green/Yellow) (3-phase, neutral and earth)

Conductor	Insulation	Unarmoured Cable			Armoured Cable		
		Part No.	Approx. Overall Diam.	Approx. Weight	Part No.	Approx. Overall Diam.	Approx. Weight
(mm <sup>2</sup> )	(mm)		(mm)	(kg/km)		(mm)	(kg/km)
1.5	0.7	<b>07054810</b>	15.2	273	<b>07054163</b>	19.2	588
2.5	0.7	<b>08054810</b>	16.4	330	<b>08054163</b>	20.6	674
4	0.7	<b>09054810</b>	17.8	434	<b>09054163</b>	22.9	928
6	0.7	<b>10054810</b>	19.5	547	<b>10054163</b>	24.6	1083
10	0.7	<b>11054810</b>	22.0	780	<b>11054163</b>	27.3	1679
16	0.7	<b>12054810</b>	24.8	1105	<b>12054163</b>	30.6	2096
25 (cs)	0.9	<b>13054810</b>	29.0	1625	<b>13054163</b>	34.8	2765
35 (cs)	0.9	<b>14054810</b>	33.8	2270	<b>14054163</b>	40.0	3415
50 (cs)	1.0	<b>15054810</b>	38.0	2876	<b>15054163</b>	45.0	4239
70 (cs)	1.1	<b>16054810</b>	43.0	3967	<b>16054163</b>	50.4	5920
95 (cs)	1.1	<b>17054810</b>	48.5	5355	<b>17054163</b>	57.2	8053
120 (cs)	1.2	<b>18054810</b>	52.6	6750	<b>18054163</b>	61.4	9582
150 (cs)	1.4	<b>19054810</b>	57.8	8220	<b>19054163</b>	67.2	11363
185 (cs)	1.6	<b>20054810</b>	64.5	10250	<b>20054163</b>	73.5	13725

### Current rating and voltage drop

For Unarmoured Cable, please refer to Table 14 & 15 (Page 60)

For Armoured Cable, please refer to Table 16 & 17 (Page 61)

(cs) : Circular Compact Stranded Conductor

# Current Rating and Voltage Drop

XLPE (or LSZH) Insulated Cables  
Multi-Core, Unarmoured



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Multi-Core Cables with XLPE (or LSZH) Insulation, PVC (or LSZH) Outersheath 300/500V or 0.6/1kV

**Table 14 : Current-Carrying Capacities (Amp)**  
**[CU/XLPE/PVC, CU/XLPE/LSZH or CU/MT/XLPE/LSZH Cables]**

Conductor Operating Temperature : 90°C  
Ambient Temperature : 30°C

IEC 60502-1

Conductor Cross-sectional Area	Reference Method 4 (enclosed in an conduit insulated wall etc)	Reference Method 3 (enclosed in conduit on a wall or ceiling, or in trunking)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray), or Reference Method 13 (in free air)	
	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.
1	2	3	4	5	6	7	8
mm <sup>2</sup>	A	A	A	A	A	A	A
1.5	16.5	22	19.5	24	22	26	23
2.5	22	30	26	33	30	36	32
4	30	40	35	45	40	49	42
6	38	51	44	58	52	63	54
10	51	69	60	80	71	86	75
16	68	91	80	107	96	115	100
25	89	119	105	138	119	149	127
35	109	146	128	171	147	185	158
50	130	175	154	209	179	225	192
70	164	221	194	269	229	289	246
95	197	265	233	328	278	352	298
120	227	305	268	382	322	410	346
150	259	334	300	441	371	473	399
185	295	384	340	506	424	542	456
240	346	459	398	599	500	641	538
300	396	532	455	693	576	741	621
400	472	625	536	803	667	865	741

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 25 (Page 66)

**Table 15 : Voltage Drop (Per Amp Per Meter)**  
**[CU/XLPE/PVC, CU/XLPE/LSZH or CU/MT/XLPE/LSZH Cables]**

Conductor Operating Temperature : 90°C

IEC 60502-1

Conductor Cross-sectional Area	2-core cable, d.c.	2-core cable, 1-phase a.c.			3-core or 4-core cables, 3-phase a.c.		
	2	r	x	z	r	x	z
1	3	4	5	6	7	8	9
mm <sup>2</sup>	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	31	31	27	27	27
2.5	19	19	19	19	16	16	16
4	12	12	12	12	10	10	10
6	7.9	7.9	7.9	7.9	6.8	6.8	6.8
10	4.7	4.7	4.7	4.7	4.0	4.0	4.0
16	2.9	2.9	2.9	2.9	2.5	2.5	2.5
25	1.85	1.85	0.140	1.90	1.60	0.140	1.65
35	1.35	1.35	0.155	1.35	1.15	0.135	1.15
50	0.98	0.99	0.155	1.00	0.86	0.135	0.87
70	0.67	0.67	0.150	0.69	0.59	0.130	0.60
95	0.49	0.50	0.150	0.52	0.43	0.130	0.45
120	0.39	0.40	0.145	0.42	0.34	0.130	0.37
150	0.31	0.32	0.145	0.35	0.28	0.125	0.30
185	0.25	0.26	0.145	0.29	0.22	0.125	0.26
240	0.195	0.200	0.140	0.24	0.175	0.125	0.21
300	0.155	0.160	0.140	0.21	0.140	0.120	0.185
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165

Note : r = resistive component; x = reactive component; z = impedance value

# Current Rating and Voltage Drop

XLPE (or LSZH) Insulated Cables  
Multi-Core, Armoured



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Multi-Core Cables with XLPE (or LSZH) Insulation, Armoured, PVC or LSZH Outersheath 0.6/1kV

**Table 16 : Current-Carrying Capacities (Amp)**  
[CU/XLPE/PVC/SWA/PVC, CU/XLPE/LSZH/SWA/LSZH, CU/MT/XLPE/LSZH/SWA/LSZH Cables]

Conductor Operating Temperature : 90°C  
Ambient Temperature : 30°C  
Ground Temperature : 15°C

Depth of Laying : 0.5m

BS 6724  
IEC 60502-1  
Soil Thermal Resistivity : 1.2 k•m/W

Conductor Cross-sectional Area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable tray) or Reference Method 13 (in free air)		In single-way ducts		Laid direct in ground	
	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.	one 2-core cable, 1-phase a.c. or d.c.	one 3-core or 4-core cable, 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm <sup>2</sup>	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48
6	62	53	66	56	-	50	-	60
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590
400	787	673	847	728	660	560	790	670

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 25 (Page 66)  
For rating factors of ground temperature other than 15°C, please refer to Table 26 (Page 66)

**Table 17 : Voltage Drop (Per Amp Per Meter)**  
[CU/XLPE/PVC/SWA/PVC, CU/XLPE/LSZH/SWA/LSZH, CU/MT/XLPE/LSZH/SWA/LSZH Cables]

Conductor Operating Temperature : 90°C

BS 6724  
IEC 60502-1

Conductor Cross-sectional Area	2-core cable, d.c.	2-core cables, 1-phase a.c.			3-core or 4-core cables, 3-phase a.c.			2-core cables, 1-phase a.c.	3-core or 4-core cables, 3-phase a.c.
								In ducts or in ground	In ducts or in ground
1	2	3			4			5	6
mm <sup>2</sup>	mV/A/m	mV/A/m			mV/A/m			mV/A/m	mV/A/m
1.5	31.0	31.0			27.0			31.0	25.0
2.5	19.0	19.0			16.0			19.0	15.0
4	12.0	12.0			10.0			12.0	9.7
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.850	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165	0.190	0.180

Note : r = resistive component; x = reactive component; z = impedance value

**Table 25 : Correction Factor for Ambient Air Temperature Other Than 30°C to be Applied to the Current-Carrying Capacities for Cables in Free Air**

Ambient Temperature (°C)	Insulation				
	PVC (70°C)	XLPE (90°C)	HT-PVC (90°C)	Rubber (85°C)	Rubber (60°C)
10	1.22	1.15	-	-	-
15	1.17	1.12	-	-	-
20	1.12	1.08	-	-	-
25	1.06	1.04	1.03	1.02	-
30	1.00	1.00	1.00	1.00	1.00
35	0.94	0.96	0.97	0.95	0.91
40	0.87	0.91	0.94	0.90	0.82
45	0.79	0.87	0.91	0.85	0.71
50	0.71	0.82	0.87	0.80	0.58
55	0.61	0.76	0.84	0.74	0.41
60	0.50	0.71	0.80	0.67	-
65	0.35	0.65	0.76	0.60	-
70	-	0.58	0.71	0.52	-
75	-	0.50	0.61	0.43	-
80	-	0.41	0.50	0.30	-
85	-	0.29	0.35	-	-

**Table 26 : Correction Factor for Ambient Ground Temperature Other Than 15°C to be Applied to the Current-Carrying Capacities for Cables in Ducts or in Ground**

Ground Temperature (°C)	Insulation	
	PVC (70°C)	XLPE (90°C)
10	1.04	1.03
15	1.00	1.00
20	0.95	0.97
25	0.90	0.93
30	0.85	0.89
35	0.80	0.86
40	0.74	0.82
45	0.67	0.77
50	0.60	0.73
55	-	0.68
60	-	0.63
65	-	0.58