

Single-Core LSF 6491B

90°C 300/500 and 450/750 V



Application

LSF insulated only cable for fixed wiring purposes. Used in trunking or conduit, or may be surface mounted when used for earthing. Especially for use in areas where fire would create dense smoke and toxic fumes causing a major threat to life and equipment.

Specifications

- In accordance with BS EN 50525-3-41 and Cenelec harmonised codes

H07Z-U (Solid conductors)

H07Z-R (Stranded conductors)

- **Conductors:** Solid Class 1 or Stranded Class 2 copper conductors to BS EN 60228

- **Insulation:** Low smoke zero halogen thermosetting insulation Type EI.5 to BS EN 50363-5, displaying following characteristics:

Oxygen Index: 30% minimum

HCL emission @ 800°C: 0.5% maximum

- Flame retardant to BS EN 60332-2-2 (up to and incl. 1.0mm²) and BS EN 60332-1-2 (above 1.0mm²)

- Normal colours available. (see 6491X page 1:2)

- **Temperature Rating:** 90°C maximum conductor operating temperature

- **Voltage Rating:** Up to and including 1.0mm² 300/500 V 1.5mm² and above - 450/750 V

Single Core LSF 6491B

90°C 300/500 & 450/750V

Anixter Number	Cenelec Code	Nominal Conductor Area mm ²	Conductor Class	Insulation Thickness mm	Maximum O/D mm	Approx Weight kg/km	Min Bending Radius (fixed bend) mm
A3BR-0015	H07Z-U1	1.5	1	0.7	3.3	20	10
A3BT-0015	H07Z-R1	1.5	2	0.7	3.4	22	11
A3BR-0025	H07Z-U1	2.5	1	0.8	4.0	31	12
A3BT-0025	H07Z-R1	2.5	2	0.8	4.1	33	13
A3BT-0040	H07Z-R1	4	2	0.8	4.7	49	15
A3BT-0060	H07Z-R1	6	2	0.8	5.4	69	17
A3BT-0100	H07Z-R1	10	2	1.0	7.0	116	21
A3BT-0160	H07Z-R1	16	2	1.0	8.0	175	24
A3BT-0250	H07Z-R1	25	2	1.2	10.1	273	30
A3BT-0350	H07Z-R1	35	2	1.2	11.3	367	50
A3BT-0500	H07Z-R1	50	2	1.4	13.2	495	60
A3BT-0700	H07Z-R1	70	2	1.4	15.1	699	60
A3BT-0950	H07Z-R1	95	2	1.6	17.6	968	70
A3BT-1200	H07Z-R1	120	2	1.6	19.4	1164	80
A3BT-1500	H07Z-R1	150	2	1.8	21.6	1413	90
A3BT-1850	H07Z-R1	185	2	2.0	24.1	1828	100
A3BT-2400	H07Z-R1	240	2	2.2	27.5	2320	160
A3BT-3000	H07Z-R1	300	2	2.4	30.6	2988	180
A3BT-4000	H07Z-R1	400	2	2.6	34.3	3800	210
A3BT-5000	H07Z-R1	500	2	2.8	38.2	4750	230
A3BT-6300	H07Z-R1	630	2	2.8	42.5	6050	250

All dimensions are nominal unless otherwise stated.

For further technical information see page 1:58.

For conductor short-circuit ratings refer to page 19:28 for XLPE insulated cable.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

Technical Information

- Single core LSF
- Single core XLPE/PVC, XLPE/LSF (6181) Types 600/1000V

CURRENT - CARRYING CAPACITY (Amperes):

Conductor Cross Sectional Area	Reference Method A (enclosed in conduit in thermally insulating wall etc)		Reference Method B (enclosed in conduit on a wall or in trunking etc)		Reference Method C ("clipped direct")	
	2 Cables, Single Phase a.c. or d.c.	3 or 4 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c.	3 or 4 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c. Flat and Touching	3 or 4 Cables Three Phase a.c. Flat and Touching or Trefoil
1	2	3	4	5	6	7
mm ²	A	A	A	A	A	A
1	14	13	17	15	19	17.5
1.5	19	17	23	20	25	23
2.5	26	23	31	28	34	31
4	35	31	42	37	46	41
6	45	40	54	48	59	54
10	61	54	75	66	81	74
16	81	73	100	88	109	99
25	106	95	133	117	143	130
35	131	117	164	144	176	161
50	158	141	198	175	228	209
70	200	179	253	222	293	268
95	241	216	306	269	355	326
120	278	249	354	312	413	379
150	318	285	393	342	476	436
185	362	324	449	384	545	500
240	424	380	528	450	644	590
300	486	435	603	514	743	681
400	-	-	683	584	868	793
500	-	-	783	666	990	904
630	-	-	900	764	1130	1033
800	-	-	-	-	1288	1179
1000	-	-	-	-	1443	1323

Technical Information

For ambient air temperatures other than 30°C, the following rating factors should be applied:

Ambient air temp °C	25	30	35	40	45	50	55	60	65	70	75	80	85
Rating factor	1.04	1.0	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	0.29

Reference Method F (on a perforated cable tray horizontal or vertical)		Reference Method G (Free air)		
		Horizontal Flat Spaced	Vertical Flat Spaced	Trefoil
2 Cables, Single Phase a.c. or d.c. Flat and Touching	3 or 4 Cables Three Phase a.c. Flat and Touching	2 Cables, Single Phase a.c. or d.c. or 3 Cables Three Phase a.c.	2 Cables, Single Phase a.c. or d.c. or 3 Cables Three Phase a.c.	3 Cables Trefoil Three Phase a.c.
8	9	10	11	12
A	A	A	A	A
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
161	141	182	161	135
200	176	226	201	169
242	216	275	246	207
310	279	353	318	268
377	342	430	389	328
437	400	500	454	383
504	464	577	527	444
575	533	661	605	510
679	634	781	719	607
783	736	902	833	703
940	868	1085	1008	823
1083	998	1253	1169	946
1254	1151	1454	1362	1088
1358	1275	1581	1485	1214
1520	1436	1775	1671	1349

Ratings shown in Column 12, also apply to cables in trefoil formation on a perforated cable tray, Reference Method F.

Technical Information

- Single core LSF
- Single core XLPE/PVC, XLPE/LSF (6181) Types 600/1000V

Continued. . .

VOLTAGE DROP (per Ampere per metre):

2 Cables - Single Phase a.c.

Conductor Cross Sectional Area	2 cables d.c.	Reference Methods A & B (enclosed in conduit etc in or on a wall)			Reference Methods C, F & G (clipped direct or on trays, touching)			Reference Method C, F & G (spaced*)			
		1	2	3	4	5	6	7	8	9	10
mm ²	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
1	46	46			46			46			
1.5	31	31			31			31			
2.5	19	19			19			19			
4	12	12			12			12			
6	7.9	7.9			7.9			7.9			
10	4.7	4.7			4.7			4.7			
16	2.9	2.9			2.9			2.9			
		r	x	z	r	x	z	r	x	z	
25	1.85	1.85	0.31	1.90	1.85	0.19	1.85	1.85	0.28	1.85	
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35	
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00	
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.49	0.26	0.56	
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.195	0.25	0.31	
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.155	0.25	0.29	
400	0.120	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.24	0.27	
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	
630	0.072	0.10	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	
800	0.056		-		0.072	0.150	0.170	0.064	0.24	0.25	
1000	0.045		-		0.063	0.150	0.165	0.054	0.24	0.24	

*Spaced by one cable diameter

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

3 or 4 Cables - Three Phase a.c.											
Reference Methods A & B (enclosed in conduit etc in or on wall)			Reference Methods C, F & G (in trefoil)			Reference Methods C, F & G (flat touching)			Reference Methods C, F & G (flat spaced*)		
6			7			8			9		
mV			mV			mV			mV		
40			40			40			40		
27			27			27			27		
16			16			16			16		
10			10			10			10		
6.8			6.8			6.8			6.8		
4			4			4			4		
2.5			2.5			2.5			2.5		
r	x	z	r	x	z	r	x	z	r	x	z
1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.19	1.60	1.60	0.27	1.65
1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.18	1.15	1.15	0.26	1.20
0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.18	0.87	0.86	0.26	0.89
0.60	0.24	0.65	0.59	0.150	0.61	0.59	0.175	0.62	0.59	0.25	0.65
0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.170	0.46	0.43	0.25	0.49
0.35	0.23	0.42	0.34	0.140	0.37	0.34	0.165	0.38	0.34	0.24	0.42
0.29	0.23	0.37	0.28	0.140	0.31	0.28	0.165	0.32	0.28	0.24	0.37
0.23	0.23	0.32	0.22	0.140	0.26	0.22	0.165	0.28	0.22	0.24	0.33
0.185	0.22	0.29	0.17	0.140	0.22	0.17	0.165	0.24	0.17	0.24	0.29
0.15	0.22	0.27	0.14	0.140	0.195	0.135	0.160	0.21	0.135	0.24	0.27
0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.160	0.195	0.11	0.24	0.26
0.10	0.22	0.24	0.09	0.135	0.16	0.088	0.160	0.180	0.085	0.24	0.25
0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170	0.068	0.23	0.24
	-		0.062	0.130	0.145	0.059	0.155	0.165	0.055	0.23	0.24
	-		0.055	0.130	0.140	0.050	0.155	0.165	0.047	0.23	0.24

For further guidance refer to the BS7671 (IEE Wiring Regulations - latest edition).

Conductor Short-Circuit Ratings

XLPE Insulated Cables

Short-Circuit Ratings

Conductor Size mm ²	0.2s duration kA	1.0s duration kA	3.0s duration kA
1.5	0.479	0.214	0.123
2.5	0.799	0.357	0.206
4.0	1.27	0.572	0.330
6.0	1.91	0.858	0.495
10	3.19	1.43	0.825
16	5.11	2.28	1.32
25	7.99	3.57	2.06
35	11.1	5.0	2.88
50	15.9	7.15	4.12
70	22.3	10.0	5.77
95	30.3	13.5	7.84
120	38.3	17.1	9.9
150	47.9	21.4	12.3
185	59.1	26.4	15.2
240	76.7	34.3	19.8
300	95.9	42.9	24.7
400	127	57.2	33.0
500	159	71.5	41.2
630	201	90.0	52.0

N.B: The above ratings assume an adiabatic temperature rise and are based on a conductor temperature of 90°C at start of short-circuit and 250°C at end of shortcircuit.