

## MEDIUM VOLTAGE CABLES

### Physical & electrical characteristics

Aluminium 1.9/3.3kV – Three core light duty screened unarmoured										
Product code: 3CALX3LD										
Nominal conductor area mm <sup>2</sup>	25	35	50	70	95	120	150	185	240	300
Nominal conductor diameter mm	6.1	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6
Nominal insulation thickness mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Approx cable diameter mm	35.9	38.4	40.7	44.6	48.6	51.8	54.9	58.8	63.9	69.5
Approx mass kg/100m	110	130	150	180	215	250	290	335	410	490
Max pulling tension on conductors kN	3.8	5.3	7.5	11	14	18	23	25	25	25
Max pulling tension on stocking grip kN	3.8	5.2	5.8	7.0	8.3	9.4	11	12	14	17
Min bending radius* during installation mm	650	690	730	800	880	930	990	1060	1150	1250
Min bending radius* set in position mm	430	460	490	540	580	620	660	710	770	830
Max conductor resistance, dc @ 20°C Ohm/km	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	1.54	1.11	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.130
Inductance mH/km	0.381	0.363	0.349	0.321	0.307	0.298	0.290	0.279	0.270	0.262
Inductive reactance, @ 50Hz Ohm/km	0.120	0.114	0.110	0.101	0.0964	0.0935	0.0910	0.0875	0.0849	0.0824
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	4.84+ j0.0722	3.60+ j0.0668	3.37+ j0.0626	3.18+ j0.0542	3.05+ j0.0499	2.78+ j0.0472	2.55+ j0.0449	2.35+ j0.0416	2.18+ j0.0391	1.92+ j0.0368
Capacitance, phase to earth µF/km	0.317	0.354	0.390	0.449	0.509	0.556	0.604	0.665	0.740	0.827
Min insulation resistance @ 20°C MOhm.km	8,300	7,300	6,600	5,700	5,000	4,600	4,200	3,800	3,400	3,000
Electric stress at conductor screen kV/mm	1.19	1.16	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.03
Charging current @ rated voltage & 50 Hz A/phase/km	0.189	0.212	0.233	0.268	0.304	0.332	0.360	0.397	0.442	0.494
Short circuit rating	Phase conductor kA, 1 sec	2.4	3.3	4.7	6.6	9.0	11.3	14.2	17.5	22.7
	Metallic screen kA, 1 sec	2.3	3.0	3.0	3.0	3.0	3.3	3.5	3.8	4.6
Continuous current rating	In ground, direct buried A	110	125	150	185	225	255	285	320	420
	In ground, in singleway ducts A	90	110	130	160	185	215	245	270	365
	In free air, unenclosed & spaced from wall A	105	125	145	180	215	255	290	335	460

The cables described in this technical manual are designed to be used for the supply of electrical energy in fixed applications up to the rated voltages at a nominal power frequency between 49Hz and 61Hz. All values in this catalogue are for XLPE cables only. \*Increased radius required for HDPE and nylon incorporating designs.