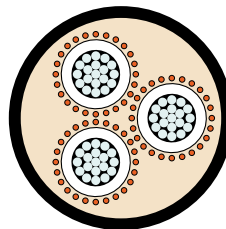


**MEDIUM VOLTAGE CABLES**

**Aluminium 19/33 kV – Three core light duty screened unarmoured**



**Application**

Electricity distribution or sub-transmission networks cable typically used as primary supply to Commercial, Industrial and urban residential networks. Suitable for low fault level or fast fault clearing cable systems.

**Approvals**

Approved by all major power Utilities and industrial customers in Australia.

**Behaviour in flame and fire:**

PVC or LSOH outer sheath exceeds the requirements of IEC 60332-1.

**Temperature range**

Minimum installation temperature: 0 °C  
 Maximum operating temperature: +90 °C  
 Minimum operating temperature: -25 °C

**Minimum bending radius**

Installed cables: 12D (PVC only)  
 15D (HDPE)  
 During installation: 18D (PVC only)  
 25D (HDPE)

**Resistance to**

Chemical exposure: Accidental  
 Mechanical impact: Light (PVC only)  
 Heavy (HDPE)  
 Water exposure: XLPE – Spray  
 EPR – Immersion/Temporary coverage  
 Solar radiation and weather exposure: Suitable for direct exposure.

**Cable design**

Conductor:  
 Circular compacted aluminium  
 Conductor screen:  
 Extruded semi-conductive compound, bonded to the insulation and applied in the same operations as the insulation.  
 Insulation:  
 Cross Linked Polyethylene (XLPE) – standard  
 Ethylene Propylene Rubber (EPR) – alternative  
 Insulation screen:  
 Extruded, semi-conductive compound  
 Metallic screen:  
 Plain annealed copper wire: nominal 3kA for 1 second.  
 See table next page.  
 Sheath:  
 Black 5V-90 polyvinyl chloride (PVC) – standard  
 Orange 5V-90 PVC inner plus black high density polyethylene (HDPE) outer – alternative  
 Low smoke zero halogen (LSOH) – alternative

**Installation conditions**

In free air  
 In duct  
 In trench  
 In ground with protection

All sizes and values without tolerances are reference values. Specifications are for product as supplied by Prysmian Group; any modification or alteration afterwards of product may give different result. The information contained within this document must not be copied, reprinted or reproduced in any form, either wholly or in part, without the written consent of Prysmian Group. The information is believed to be correct at the time of issue. Prysmian Group reserves the right to amend this specification without prior notice. This specification is not contractually valid unless specifically authorised by Prysmian Group.



## MEDIUM VOLTAGE CABLES

### Physical & Electrical Characteristics

Aluminium 19/33 kV – Three core light duty screened unarmoured									
Product code: 3CALX33LD									
Nominal conductor area mm <sup>2</sup>	50	70	95	120	150	185	240	300	
Nominal conductor diameter mm	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6	
Nominal insulation thickness mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Approx cable diameter mm	68.4	72.4	76.3	79.4	82.5	86.5	91.5	97.6	
Approx mass kg/100m	350	400	445	490	535	600	690	795	
Max pulling tension on conductors kN	7.5	11	14	18	23	25	25	25	
Max pulling tension on stocking grip kN	7.5	11	14	18	23	25	25	25	
Min bending radius* during installation mm	1230	1300	1370	1430	1490	1560	1650	1760	
Min bending radius* set in position mm	820	870	920	950	990	1040	1100	1170	
Max conductor resistance, dc @ 20°C Ohm/km	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	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.130	
Inductance mH/km	0.457	0.422	0.401	0.387	0.375	0.359	0.345	0.332	
Inductive reactance, @ 50Hz Ohm/km	0.144	0.133	0.126	0.121	0.118	0.113	0.108	0.104	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.57+ j0.0981	2.27+ j0.0871	2.05+ j0.0805	1.89+ j0.0762	1.77+ j0.0724	1.66+ j0.0674	1.49+ j0.0632	1.41+ j0.0593	
Capacitance, phase to earth µF/km	0.139	0.155	0.171	0.183	0.196	0.211	0.231	0.255	
Min insulation resistance @ 20°C MOhm.km	18,000	16,000	15,000	14,000	13,000	12,000	11,000	9,900	
Electric stress at conductor screen kV/mm	4.08	3.85	3.67	3.56	3.46	3.36	3.26	3.16	
Charging current @ rated voltage & 50 Hz A/phase/km	0.831	0.927	1.02	1.09	1.17	1.26	1.38	1.52	
Short circuit rating	Phase conductor kA, 1 sec	4.7	6.6	9.0	11.3	14.2	17.5	22.7	28.3
	Metallic screen kA, 1 sec	4.3	4.6	4.8	5.1	5.3	5.6	6.1	6.3
Continuous current rating	In ground, direct buried A	150	180	220	250	280	315	377	426
	In ground, in singleway ducts A	130	160	190	225	250	275	313	353
	In free air, unenclosed & spaced from wall A	155	190	230	270	300	340	424	484

The cables described 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 are for XLPE cables only. \*Increased radius required for HDPE and nylon incorporating designs.