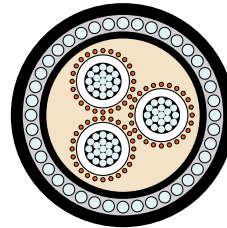


**MEDIUM VOLTAGE CABLES**
**Aluminium 12.7/22 kV – Three core light duty screened armoured**

**Application**

Electricity distribution network 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: Heavy (Armoured)  
 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.

**Armouring:**

Galvanised steel wires

**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

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 12.7/22 kV – Three core light duty screened armoured										
Product code: 3CALX22LDA										
Nominal conductor area mm <sup>2</sup>	35	50	70	95	120	150	185			
Nominal conductor diameter mm	7.1	8.1	9.8	11.5	12.9	14.2	16.0			
Nominal insulation thickness mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5			
Approx cable diameter mm	63.8	66.4	70.2	74.3	79.3	82.4	86.8			
Approx mass kg/100m	535	570	630	700	855	920	1010			
Max pulling tension on conductors kN	5.3	7.5	11	14	18	23	25			
Max pulling tension on stocking grip kN	5.3	7.5	11	14	18	23	25			
Max pulling tension on armour wires kN	17	18	20	23	25	25	25			
Min bending radius* during installation mm	1150	1190	1260	1340	1430	1480	1560			
Min bending radius* set in position mm	770	800	840	890	950	990	1040			
Max conductor resistance, dc @ 20°C Ohm/km	0.868	0.641	0.443	0.320	0.253	0.206	0.164			
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	1.11	0.822	0.568	0.411	0.325	0.265	0.211			
Inductance mH/km	0.437	0.419	0.386	0.367	0.354	0.343	0.329			
Inductive reactance, @ 50Hz Ohm/km	0.137	0.132	0.121	0.115	0.111	0.108	0.103			
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	3.21+ j0.0911	2.98+ j0.0856	2.63+ j0.0754	2.37+ j0.0695	2.18+ j0.0657	2.03+ j0.0624	1.89+ j0.0579			
Capacitance, phase to earth µF/km	0.165	0.179	0.201	0.223	0.241	0.259	0.281			
Min insulation resistance @ 20°C MOhm.km	16,000	14,000	13,000	11,000	10,000	9,700	8,900			
Electric stress at conductor screen kV/mm	3.63	3.50	3.33	3.21	3.13	3.06	2.99			
Charging current @ rated voltage & 50 Hz A/phase/km	0.659	0.712	0.802	0.891	0.962	1.03	1.12			
Short circuit rating	Phase conductor kA, 1 sec	3.3	4.7	6.6	9.0	11.3	14.2	17.5		
	Metallic screen kA, 1 sec	3.5	3.5	3.8	4.0	4.3	4.6	4.8		
Continuous current rating	In ground, direct buried A	125	145	190	235	255	285	320		
	In ground, in singleway ducts A	110	130	160	190	220	245	275		
	In free air, unenclosed & spaced from wall A	125	145	190	230	265	300	345		

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.