



Eland Product Group: B4X

APPLICATION

Medium voltage power cables with additional waterblocking properties for distribution networks and generation units, suitable for external installation including in direct in ground and in buried cable ducts. UV Resistant.

CHARACTERISTICS

Voltage Rating U_o/U (Um)

8.7/15 (17.5)KV

12/20 (24)kV

18/30 (36)kV

Test Voltage

35kV AC 50Hz (5 mins)

42kV AC 50Hz (5 mins)

63kV AC 50Hz (5 mins)

Temperature Rating

-20°C to +60°C

Permissible Conductor Operating Temperature: +90°C

Permissible Short Circuit Temperature up to 5 sec: 250°C

Minimum Bending Radius

15 x overall diameter

CONSTRUCTION

Conductor

Class 2 Stranded Aluminium

Conductor Screen

Semi-conductive material

Insulation

XLPE (Cross-Linked Polyethylene)

Insulation Screen

Semi-conductive material (bonded)

Longitudinal Waterblocking

Semi-conductive swellable tape

Screen

Copper wires and copper tape

Longitudinal Waterblocking

Swellable Tapes

Radial Waterblocking

Al/PET (Aluminium/Polyester) Tape tightly bonded to sheath

Outer Sheath

MDPE (Medium Density Polyethylene)

Sheath Colour

● Red ● Black

STANDARDS

IEC 60502-2, IEC 60228,

Generally to HD620 10B

UV Resistant to: ISO 4892-3

Abrasion and Tear Resistant to: EN 60229-4.1

Impact rated to: AG2 EN 60364-5.51

THE CABLE LAB®

AN ISO/IEC 17025 AND IECCE CBTB ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.



SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: www.elandcables.com/company/about-us/esg-sustainability



REGULATORY COMPLIANCE

This cable meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.





DIMENSIONS 8.7/15 (17.5)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL DIAMETER OF CONDUCTOR mm	INSULATION mm		METALLIC SCREEN mm		NOMINAL OUTER DIAMETER OF CABLE mm	NOMINAL WEIGHT kg/km	MAXIMUM PULLING FORCE kN	MINIMUM BENDING RADIUS m
				Nominal thickness	Nominal diameter over	Nominal cross section mm ²	Nominal diameter over mm				
B4X15KV01050	1	50	8.25	4.5	18.5	16	22.6	28.1	720	1.5	0.42
B4X15KV01095	1	95	11.3	4.5	21.5	35	25.6	31.2	1100	2.85	0.47
B4X15KV01150	1	150	14.2	4.5	24.4	50	28.5	34.1	1440	4.5	0.51
B4X15KV01240	1	240	17.9	4.5	28.1	50	32.2	37.8	1780	7.2	0.57
B4X15KV01400	1	400	22.9	4.5	33.1	50	37.2	42.8	2300	12	0.64
B4X15KV01630	1	630	29.3	4.5	40.3	50	44.6	50.3	3190	18.9	0.75

ELECTRICAL CHARACTERISTICS

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm ²	MAXIMUM CONDUCTOR DC RESISTANCE AT 20 °C ohm/km	MAXIMUM CONDUCTOR AC RESISTANCE AT 90 °C ohm/km	MAXIMUM METALLIC SCREEN DC RESISTANCE AT 20 °C ohm/km	MAXIMUM METALLIC SCREEN AC RESISTANCE AT 80 °C ohm/km	ELECTRICAL FIELD STRESS kV/mm		RESISTANCE ohm/km	CAPACITANCE μF/km	CAPACITANCE REACTANCE ohm/km	CHARGING CURRENT ohm/km	REACTANCE ohm/km
					Conductor	Insulation					
50/16	0.641	0.822	1.12	1.38	2.72	1.37	2.20	0.19	17.2	0.51	0.076
95/35	0.320	0.411	0.51	0.63	2.53	1.45	1.04	0.23	13.9	0.63	0.064
150/50	0.206	0.265	0.36	0.44	2.42	1.51	0.71	0.27	11.8	0.74	0.057
240/50	0.125	0.161	0.36	0.44	2.32	1.56	0.60	0.32	9.9	0.88	0.050
400/50	0.0778	0.102	0.36	0.44	2.24	1.61	0.54	0.39	8.1	1.07	0.044
630/50	0.0469	0.0634	0.36	0.44	2.14	1.65	0.51	0.49	6.5	1.33	0.041

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm ²	INDUCTANCE L mH/km			INDUCTANCE REACTANCE XL ohm/mm			IMPEDANCE ohm/km		
	0°0°2	000°3	000°4	0°0°2	000°3	000°4	0°0°2	000°3	000°4
50/16	0.43	0.73	0.62	0.136	0.229	0.194	0.833	0.853	0.845
95/35	0.39	0.67	0.58	0.123	0.212	0.181	0.429	0.462	0.449
150/50	0.36	0.63	0.55	0.114	0.199	0.172	0.288	0.331	0.316
240/50	0.34	0.59	0.52	0.106	0.187	0.164	0.193	0.247	0.230
400/50	0.31	0.55	0.50	0.099	0.174	0.157	0.142	0.201	0.187
630/50	0.30	0.52	0.48	0.093	0.163	0.151	0.113	0.174	0.164

2 - Cables in trefoil formation, the distance between cables De

3 - Cables in flat formation (in the ground), the distance between cables De + 70 mm

4 - Cables in flat formation (in the air), the distance between cables 2 x De

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CURRENT RATING FOR SINGLE-CORE CABLES-AMPERES 8.7/15 (17.5)KV

NOMINAL CROSS SECTIONAL AREA mm ²	MAXIMUM SHORT CIRCUIT CAPACITY CONDUCTOR kA/sec	MAXIMUM SHORT CIRCUIT CAPACITY SCREEN kA/sec	FLAT FORMATION		TREFOIL FORMATION		FLAT FORMATION		TREFOIL FORMATION	
			CONFIGURATIONS							
			SPP,CB	BOTH-ENDS	SPP,CB	BOTH-ENDS	SPP,CB	BOTH-ENDS	SPP,CB	BOTH-ENDS
			CABLES IN EARTH				CABLES IN AIR			
50/16	4.7	3.7	228	227	214	214	235	234	198	198
95/35	9.0	7.1	337	329	315	314	357	349	299	298
150/50	14.2	9.8	433	412	406	402	469	449	393	389
240/50	22.7	9.8	574	527	536	527	639	594	533	525
400/50	37.8	9.8	751	658	700	683	865	774	717	702
630/50	59.5	9.8	990	818	917	884	1184	1003	976	944

SPB - Single Point Bonding; CB - Cross-bonding Both-ends; BE - Both-ends bonding

Laying conditions at trefoil formation are as below:

-Soil thermal resistivity: 1 /2.5 k m/W

-Burial depth: 0.7m

-Ground temperature: 20°C | Ambient temperature: 30°C

DIMENSIONS 12/20 (24)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²		NOMINAL CONDUCTOR DIAMETER mm	NUMBER WIRES CONDUCTOR mm	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS mm	MINIMUM INSULATION THICKNESS mm	NOMINAL DIAMETER OVER INSULATION mm
		Conductor	Screen			INNER mm	OUTER mm			
B4X20KV01050	1	50	16	8.20	7 x 2.90	0.50	0.40	5.50	4.85	20.4
B4X20KV01095	1	95	16	11.4	19 x 2.55	0.50	0.40	5.50	4.85	23.6
B4X20KV01150	1	150	25	14.4	19 x 3.16	0.50	0.40	5.50	4.85	26.6
B4X20KV01240	1	240	25	18.2	37 x 2.90	0.50	0.40	5.50	4.85	30.9
B4X20KV01400	1	400	35	23.0	61 x 2.90	0.50	0.40	5.50	4.85	35.7
B4X20KV01630	1	630	35	30.2	61 x 3.65	0.50	0.40	5.50	4.85	42.9

NOMINAL CROSS SECTIONAL AREA mm ²	NUMBER WIRES SCREEN mm	DIAMETER TAPE SCREEN mm	NOMINAL SHEATH THICKNESS mm	MINIMUM SHEATH THICKNESS mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM SIDEWALL PRESSURE N/cm ²	MAXIMUM PULLING TENSION N
50	44 x 0.66	1x0.1x10	1.80	1.24	27	750	284	1500
95	44 x 0.66	1x0.1x10	1.90	1.32	31	1000	448	2850
150	71 x 0.66	1x0.1x10	2.00	1.40	34	1300	620	4500
240	71 x 0.66	1x0.1x10	2.10	1.48	38	1700	854	7200
400	60 x 0.85	1x0.1x15	2.30	1.64	44	2500	1194	12000
630	60 x 0.85	1x0.1x15	2.50	1.80	51	3250	1552	18900



ELECTRICAL CHARACTERISTICS 12/20 (24)KV

NOMINAL CROSS SECTIONAL AREA mm ²	CONDUCTOR DC RESISTANCE AT 20°C ohms/km	CONDUCTOR DC RESISTANCE AT 75°C ohms/km	CONDUCTOR AC RESISTANCE BY MAX TEMP ohms/km	CURRENT CARRYING CAPACITY (A)		REACTANCE ohms/km	CHARGING ADMITTANCE A/km	CAPACITANCE uF/km	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC kA	CONDUCTOR LOSSES IN THE GROUND kW/km
				In Ground 20°C	In Air 30°C						
50	0.641	1.32	0.825	195	217	0.19	0.40	0.15	4.70	3.2	31.4
95	0.32	0.662	0.412	282	328	0.18	0.36	0.19	8.93	3.2	32.8
150	0.203	0.426	0.268	353	425	0.17	0.33	0.22	14.10	5.0	33.4
240	0.125	0.258	0.160	457	573	0.16	0.31	0.27	22.56	5.0	34.0
400	0.0778	0.161	0.103	566	740	0.16	0.29	0.32	37.60	7.1	33.0
630	0.0469	0.0972	0.0640	701	882	0.15	0.27	0.40	59.22	7.1	47.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)

Derating factor (air): 1 (Flat formation - touching)

DIMENSIONS 18/30 (36)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²		NOMINAL CONDUCTOR DIAMETER mm	NUMBER WIRES CONDUCTOR mm	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS mm	MINIMUM INSULATION THICKNESS mm	NOMINAL DIAMETER OVER INSULATION mm
		Conductor	Screen			INNER mm	OUTER mm			
B4X30KV01050	1	50	16	8.20	7 x 2.90	0.50	0.40	8.00	7.10	25.2
B4X30KV01095	1	95	16	11.4	19 x 2.55	0.50	0.40	8.00	7.10	28.4
B4X30KV01150	1	150	25	14.4	19 x 3.16	0.50	0.40	8.00	7.10	31.4
B4X30KV01240	1	240	25	18.2	37 x 2.90	0.50	0.40	8.00	7.10	35.7
B4X30KV01400	1	400	35	23.0	61 x 2.90	0.50	0.40	8.00	7.10	40.5
B4X30KV01630	1	630	35	30.2	61 x 3.65	0.50	0.40	8.00	7.10	47.7

NOMINAL CROSS SECTIONAL AREA mm ²	NUMBER WIRES SCREEN mm	DIAMETER TAPE SCREEN mm	NOMINAL SHEATH THICKNESS mm	MINIMUM SHEATH THICKNESS mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM SIDEWALL PRESSURE N/cm ²	MAXIMUM PULLING TENSION N
50	44 x 0.66	1x0.1x10	2.00	1.40	32	1000	249	1500
95	44 x 0.66	1x0.1x10	2.10	1.48	36	1300	401	2850
150	71 x 0.66	1x0.1x10	2.20	1.56	39	1600	562	4500
240	71 x 0.66	1x0.1x10	2.30	1.64	43	2000	784	7200
400	60 x 0.85	1x0.1x15	2.50	1.80	49	2750	1111	12000
630	60 x 0.85	1x0.1x15	2.70	1.96	56	3750	1462	18900

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ELECTRICAL CHARACTERISTICS 18/30 (36)KV

NOMINAL CROSS SECTIONAL AREA mm ²	CONDUCTOR DC RESISTANCE AT 20°C ohms/km	CONDUCTOR DC RESISTANCE AT 75°C ohms/km	CONDUCTOR AC RESISTANCE BY MAX TEMP ohms/km	CURRENT CARRYING CAPACITY (A)		REACTANCE ohms/km	CHARGING ADMITTANCE A/km	CAPACITANCE uF/km	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC kA	CONDUCTOR LOSSES IN THE GROUND kW/km
				In Ground 20°C	In Air 30°C						
50	0.641	1.32	0.825	196	217	0.20	0.44	0.12	4.70	3.2	31.7
95	0.32	0.662	0.412	284	328	0.19	0.39	0.14	8.93	3.2	33.2
150	0.203	0.426	0.268	355	425	0.18	0.36	0.17	14.10	5.0	33.8
240	0.125	0.258	0.160	461	572	0.17	0.34	0.20	22.56	5.0	34.6
400	0.0778	0.161	0.103	572	737	0.16	0.32	0.24	37.60	7.1	33.7
630	0.0469	0.0972	0.0640	701	882	0.16	0.29	0.29	59.22	7.1	47.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)

Derating factor (air): 1 (Flat formation - touching)

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