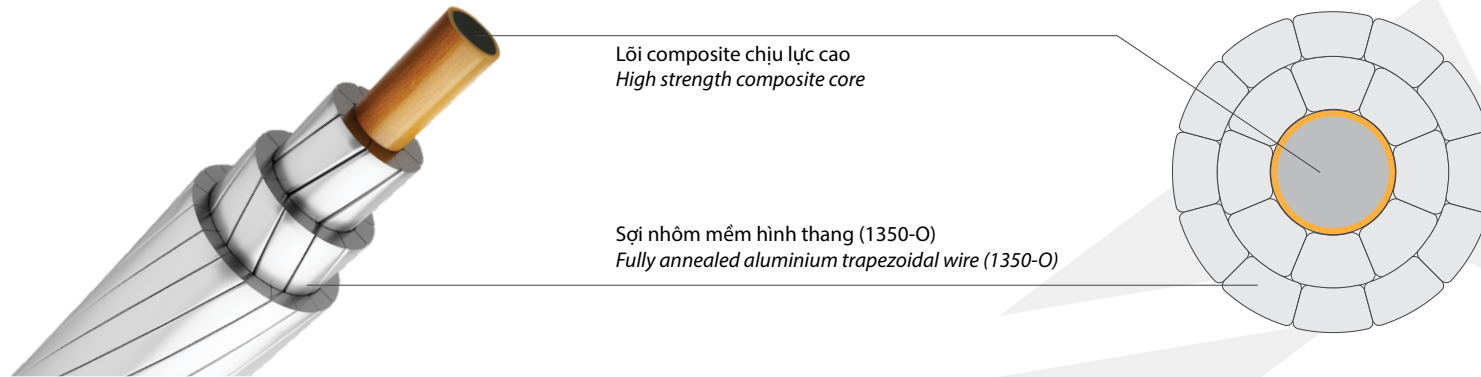


DÂY NHÔM LỖI COMPOSITE (ACCC[®])

ALUMINUM CONDUCTOR COMPOSITE CORE ACCC[®]



Lõi composite chịu lực cao
High strength composite core

Sợi nhôm mềm hình thang (1350-O)
Fully annealed aluminium trapezoidal wire (1350-O)

❏ CẤU TRÚC

Trung tâm là lõi composite tổng hợp từ sợi cacbon và sợi thủy tinh, bên ngoài là các lớp sợi nhôm mềm hình thang ủ mềm (1350-O).

❏ ĐẶC TÍNH

Nhiệt độ vận hành liên tục cho phép lên đến 180°C. Trong điều kiện khẩn cấp có thể vận hành lên đến 200°C (10.000 giờ)

❏ ƯU ĐIỂM

- ACCC[®] Tải dòng điện gấp 2 lần so với dây dẫn truyền thống (ACSR). Phần lõi nhẹ hơn cho phép tăng phần nhôm thêm 28% mà vẫn giữ được trọng lượng như dây truyền thống.
- Trong điều kiện tải cân bằng có thể làm giảm tổn thất trên đường dây từ 25 đến 40% so với dây dẫn có cùng đường kính và trọng lượng.
- Chịu lực tốt hơn, khả năng tự giảm sóc và chịu mỏi cao cho phép tăng chiều dài khoảng trụ, giảm số lượng cột tháp sử dụng.
- Lõi composite nhẹ hơn so với lõi thép (chỉ khoảng 24% so với lõi thép)
- Độ võng thấp hơn do hệ số giãn nhiệt của lõi composite nhỏ (chỉ 14% so với lõi thép)

❏ ỨNG DỤNG

ACCC[®] dùng cho đường dây tải điện trên không.

❏ CONSTRUCTION

The center is a carbon fiber and glass fiber composite core, the outer layer is fully annealed aluminum and trapezoidal in shape (1350-O)

❏ CHARACTERISTICS

Allow Continuously operation temperature up to 180°C. Maximum emergency temperature of 200°C (10.000 hours)

❏ ADVANTAGES

- ACCC[®] Carry twice the current of a conventional conductor (ACSR). Lighter core allows the use of 28% more aluminum without a weight penalty.
- Balance load conditions reduces line losses by 25 to 40% compared to conductors of the same diameter and weight.
- Greater strength, effective self-damping and superior fatigue resistance allows increased spans between fewer or shorter structures.
- Composite Core is lighter than steel core (only 24% compared with steel core)
- Lighter sag caused by small coefficient of Linear Expansion of composite core (only 14% compared with steel core)

❏ APPLICATION

ACCC[®] used for overhead power transmission lines.

TIÊU CHUẨN/ STANDARD

- **ASTM 987/B987M-17:** Standard Specification for Carbon Fiber Thermoset Polymer Matrix Composite Core (CFC) for use in Overhead Electrical Conductors)
- **ASTM B 857:** Standard Specification for Shaped Wire Compact Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Supported (ACSS/TW)
- **BS EN 50540:** Conductors for overhead lines – Aluminum Conductors Steel supported (ACSS)
- **IEC 62219:** Overhead electrical conductors Formed wire, concentric lay, stranded conductors
- **ASTM B609/B609M:** Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- **IEC 61395:** Overhead electrical conductors – Creep test procedures for stranded conductors
- **ASTM B193:** Standard Test Method for Resistivity of Electrical Conductor Materials
- **IEEE 738:** Standard for Calculating the Current-Temperature of Bare Overhead Conductors

• ACCC® - ASTM SIZE

ACCC®	Đặc tính cơ Mechanical Specifications												Đặc tính điện Electrical Specifications						
	Phần nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phần nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây ASTM ASTM size	mm²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10⁻⁶ (1/°C)	x10⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
OCEANSIDE	194.2	2	16	17.27	5.97	588	535.6	70.3	59.6	1.61	18.1	112.3	61.5	0.1441	0.1765	0.2375	558	938	987
LINNET	218.1	2	16	18.29	5.97	654	601.3	71.6	59.6	1.61	18.6	112.3	60.8	0.1277	0.1564	0.2104	602	1014	1067
ORIOLE	222.3	2	16	18.82	7.11	687	613.0	97.5	85.0	1.61	17.2	112.3	63.1	0.1255	0.1535	0.2065	612	1033	1087
WACO	230.1	2	16	19.56	7.75	723	634.7	113.9	101.0	1.61	16.7	112.3	64.1	0.1212	0.1488	0.2009	628	1060	1115
LAREDO	268.4	2	16	20.50	7.11	814	740.1	99.7	85.0	1.61	18.0	112.3	61.8	0.1038	0.1276	0.1720	687	1162	1223
IRVING	308.8	2	20	22.40	8.76	965	851.8	146.3	129.0	1.61	16.7	112.3	64.3	0.0903	0.1111	0.1498	753	1280	1348
HAWK	309.7	2	16	21.79	7.11	928	853.8	102.3	85.0	1.61	18.5	112.3	60.9	0.0900	0.1094	0.1452	753	1289	1358
DOVE	361.5	2	20	23.55	7.75	1085	996.5	121.0	101.0	1.61	18.5	112.3	60.9	0.0771	0.0947	0.1273	826	1410	1486
AMARILLO	397.6	2	20	25.14	9.53	1230	1096.7	173.9	151.7	1.61	17.4	112.3	65.2	0.0702	0.0870	0.1174	877	1499	1579
GROSBEAK	416.2	2	20	25.15	8.13	1244	1147.0	133.9	110.8	1.61	18.7	112.3	60.6	0.0672	0.0829	0.1116	898	1537	1620
LUBBOCK	458	2	20	26.42	8.76	1375	1261.7	154.4	129.0	1.61	18.3	112.3	61.4	0.0608	0.0752	0.1011	956	1640	1729
GALVESTON	512.4	2	22	27.69	8.76	1525	1412.0	157.5	129.0	1.61	18.7	112.3	60.7	0.0544	0.0674	0.0905	1022	1760	1856
DRAKE	519.7	2	22	28.14	9.53	1566	1432.6	180.6	151.7	1.61	18.3	112.3	61.2	0.0536	0.0662	0.0888	1036	1786	1884

• ACCC® - ASTM SIZE

ACCC®	Đặc tính cơ Mechanical Specifications													Đặc tính điện Electrical Specifications					
	Phân nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phân nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây ASTM ASTM size	mm ²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10 ⁻⁶ (1/°C)	x10 ⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
CURLEW	523.4	2	22	28.96	10.54	1618	1455.3	215.3	185.9	1.61	17.5	112.3	62.5	0.0535	0.0664	0.0888	1042	1802	1901
PLANO	536.8	3	36	28.63	8.76	1596	1483.4	158.8	129.0	1.61	18.9	112.3	60.4	0.0522	0.0649	0.0870	1050	1813	1913
CORPUS CHRISTI	558.9	3	36	29.11	8.76	1656	1543.0	160.1	129.0	1.61	19.0	112.3	60.2	0.0501	0.0625	0.0836	1076	1860	1962
ARLINGTON	583.2	3	36	29.90	9.53	1746	1612.9	184.2	151.7	1.61	18.7	112.3	60.5	0.0480	0.0599	0.0802	1106	1915	2021
CARDINAL	619.1	3	36	30.43	8.76	1823	1709.6	163.7	129.0	1.61	19.4	112.3	59.7	0.0452	0.0563	0.0751	1146	1990	2101
FORT WORTH	658.9	3	36	31.50	9.53	1953	1819.7	188.6	151.7	1.61	19.1	112.3	59.9	0.0425	0.0533	0.0711	1189	2067	2183
EL PASO	684	3	36	31.80	8.76	2001	1888.2	167.3	129.0	1.61	19.7	112.3	59.2	0.0409	0.0515	0.0686	1212	2111	2230
BEAUMONT	723.9	3	36	32.87	9.53	2137	2004.2	192.2	151.7	1.61	19.4	112.3	59.4	0.0387	0.0488	0.0649	1257	2193	2317
SAN ANTONIO	747.3	3	36	33.40	9.78	2208	2068.2	201.9	160.1	1.61	19.4	112.3	59.5	0.0375	0.0458	0.0608	1302	2278	2408
BITTERN	801.4	3	36	34.16	8.76	2330	2217.0	173.9	129.0	1.61	20.1	112.3	58.5	0.0352	0.0444	0.0589	1331	2333	2466
DALLAS	909.5	3	46	36.88	9.78	2668	2528.0	211.3	160.1	1.61	19.9	112.3	58.6	0.0309	0.0398	0.0521	1435	2541	2689
HOUSTON	976.6	3	46	38.25	10.54	2877	2713.9	240.6	185.9	1.61	19.7	112.3	59.0	0.0285	0.0370	0.0482	1502	2675	2833
LAPWING	987.5	4	54	38.20	9.78	2884	2743.7	215.3	160.1	1.61	20.1	112.3	58.3	0.0285	0.0370	0.0485	1502	2665	2821
FALCON	1036.2	4	56	39.24	10.54	3042	2879.1	244.2	185.9	1.61	19.9	112.3	58.7	0.0271	0.0350	0.0459	1555	2761	2923
CHUKAR	1135.8	4	56	40.74	10.03	3304	3155.9	233.1	169.5	1.61	20.3	112.3	58.0	0.0247	0.0324	0.0423	1633	2913	3085
BLUEBIRD	1388.7	4	68	44.75	10.54	4021	3858.1	263.7	185.9	1.61	20.6	112.3	57.7	0.0203	0.0278	0.0356	1808	3274	3474

1. ACCC® is produced using 1350-O (fully annealed) aluminum.
2. Strength at ambient temperature. Based on 96% of the 1350-O minimum tensile strength (8500 psi/58.6 Mpa) and 100% of the composite core minimum tensile strength (310 ksi/2137 Mpa).
3. Maximum operating temperature of ACCC® is 180°C and a maximum emergency temperature of 200°C (10000 hours over the life of the conductor).
4. Ampacity values based on 60 Hz, zero elevation, 90° sun altitude, 25°C ambient temperature, 0.5 Solar Absorbivity, 0.5 Emissivity, 2 ft/sec (0.61 m/sec) wind and 96 Watt/ft² (1033 W/m²), at corresponding surface temperatures. Coefficient of thermal resistance is 0.00404 for ASTM sizes.

• ACCC® - IEC SIZE

ACCC®	Đặc tính cơ Mechanical Specifications													Đặc tính điện Electrical Specifications					
	Phần nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phần nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây IEC International Size	mm ²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10 ⁻⁶ (1/°C)	x10 ⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
SILVASSA	122.7	2	16	14.35	5.97	392	339.9	66.5	59.6	1.61	16.5	112.3	68.1	0.2286	0.2795	0.3761	423	705	741
HELSINKI	150.6	2	16	15.65	5.97	469	417.0	68.1	59.6	1.61	17.4	112.3	66.5	0.1862	0.2277	0.3064	479	802	843
JAIPUR	155.7	2	16	16.51	7.75	522	434.0	109.8	101.0	1.61	15.1	112.3	70.6	0.1801	0.2202	0.2964	494	829	871
ZADAR	177.4	2	16	17.09	7.11	564	490.0	95.0	85.0	1.61	16.6	112.3	67.9	0.1576	0.1928	0.2594	533	895	942
ROVINJ	187.8	2	16	17.09	5.97	575	522.4	70.2	59.6	1.61	18.3	112.3	65.0	0.1487	0.1819	0.2447	548	922	969
COPENHAGEN	219.9	2	16	18.29	5.97	659	607.0	72.0	59.6	1.61	18.8	112.3	64.1	0.1272	0.1557	0.2094	603	1017	1070
REYKJAVIK	223.1	2	16	18.82	7.11	692	617.7	97.5	85.0	1.61	17.5	112.3	66.2	0.1256	0.1537	0.2067	612	1032	1087
GDANSK	248.8	2	16	19.20	5.97	741	688.7	73.6	59.6	1.61	19.2	112.3	63.5	0.1126	0.1379	0.1854	649	1097	1155
MONTE CARLO	228.5	2	28	20.78	10.54	798	634.8	198.8	185.9	1.61	13.9	112.3	73.0	0.1230	0.1504	0.2024	634	1076	1133
GLASGOW	236.7	2	16	19.53	7.75	743	654.8	114.3	101.0	1.61	17.1	112.3	67.0	0.1184	0.1449	0.1949	636	1076	1132
CASABLANCA	273.6	2	16	20.50	7.11	832	758.0	100.4	85.0	1.61	18.3	112.3	64.9	0.1024	0.1255	0.1686	692	1174	1236
OSLO	313.8	2	20	22.40	8.76	981	867.7	146.7	129.0	1.61	17.1	112.3	67.4	0.0893	0.1095	0.1471	759	1292	1361
LISBON	315.5	2	16	21.79	7.11	946	871.9	102.7	85.0	1.61	18.8	112.3	64.1	0.0887	0.1088	0.1461	755	1285	1353
AMSTERDAM	367.4	2	20	23.55	7.75	1104	1015.3	121.7	101.0	1.61	18.8	112.3	64.2	0.0762	0.0936	0.1256	831	1419	1496
CORDOBA	399.4	2	20	24.41	7.75	1191	1102.5	123.5	101.0	1.61	19.0	112.3	62.7	0.0700	0.0864	0.1158	873	1495	1576
25 MM	383.2	2	20	24.99	10.54	1222	1059.0	207.3	185.9	1.61	16.5	112.3	68.1	0.0730	0.0896	0.1203	863	1478	1558
LEIPZIG	406.4	2	20	25.15	9.53	1258	1125.1	174.6	151.7	1.61	17.6	112.3	66.1	0.0690	0.0848	0.1138	888	1522	1605
BRUSSELS	421.4	2	20	25.15	8.13	1264	1166.7	134.5	110.8	1.61	18.9	112.3	64.0	0.0666	0.0820	0.1099	903	1549	1633
STOCKHOLM 3L	453.7	3	36	26.39	8.76	1368	1254.8	154.5	129.0	1.61	18.5	112.3	64.8	0.0617	0.0760	0.1019	950	1634	1723
STOCKHOLM 2L	463.3	2	22	26.39	8.76	1395	1281.6	155.1	129.0	1.61	18.6	112.3	64.7	0.0605	0.0746	0.0999	959	1650	1740
WARSAW	507.5	3	36	27.71	8.76	1519	1406.3	157.6	129.0	1.61	18.9	112.3	64.2	0.0553	0.0683	0.0914	1015	1751	1848
DUBLIN	524.5	2	22	28.14	9.53	1584	1451.2	181.2	151.7	1.61	18.6	112.3	64.5	0.0534	0.0660	0.0883	1037	1791	1889
KOLKATA	543.5	3	34	28.63	9.53	1644	1510.9	182.3	151.7	1.61	18.7	112.3	64.3	0.0517	0.0639	0.0855	1059	1829	1931
MAHAKAM	544.9	3	36	29.01	10.54	1669	1506.0	216.5	185.9	1.61	18.0	112.3	65.5	0.0514	0.0638	0.0852	1063	1840	1942
HAMBURG	546.4	3	36	28.63	8.76	1627	1513.8	159.7	129.0	1.61	19.2	112.3	63.8	0.0514	0.0636	0.0850	1061	1834	1936

• ACCC® - IEC SIZE

ACCC®	Đặc tính cơ Mechanical Specifications												Đặc tính điện Electrical Specifications						
	Phần nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phần nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây IEC International Size	mm ²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10 ⁻⁶ (1/°C)	x10 ⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
MILAN	567.7	3	36	29.11	8.76	1686	1572.6	160.9	129.0	1.61	19.3	112.3	63.6	0.0494	0.0612	0.0818	1086	1880	1985
ROME	592.5	3	36	29.90	9.53	1775	1641.9	185.0	151.7	1.61	19.0	112.3	63.8	0.0474	0.0588	0.0785	1117	1936	2044
VIENNA	629.2	3	36	30.43	8.76	1852	1739.2	164.4	129.0	1.61	19.6	112.3	63.1	0.0445	0.0554	0.0738	1156	2008	2120
BUDAPEST	668.3	3	36	31.50	9.53	1984	1851.5	189.3	151.7	1.61	19.4	112.3	63.2	0.0420	0.0523	0.0697	1200	2089	2206
MUMBAI	685.4	3	36	31.78	9.53	2036	1902.6	190.3	151.7	1.61	19.4	112.3	63.1	0.0410	0.0511	0.0681	1217	2119	2239
PRAGUE	690.7	3	36	31.78	8.76	2030	1917.2	167.9	129.0	1.61	19.9	112.3	62.7	0.0407	0.0508	0.0676	1220	2126	2246
DHAKA	723.9	3	36	32.87	9.53	2137	2004.2	192.4	151.7	1.61	19.4	112.3	59.4	0.0387	0.0488	0.0649	1257	2193	2317
MUNICH	733.2	3	36	32.84	9.53	2171	2037.9	192.9	151.7	1.61	19.6	112.3	62.8	0.0384	0.0480	0.0638	1266	2211	2337
WARWICK	749.5	3	36	33.40	10.54	2242	2078.6	228.1	185.9	1.61	19.1	112.3	63.7	0.0375	0.0469	0.0624	1287	2248	2375
LONDON	759	3	36	33.40	9.78	2245	2104.9	202.8	160.1	1.61	19.6	112.3	62.9	0.0370	0.0464	0.0616	1294	2264	2393
PARIS	813.7	3	36	34.16	8.76	2366	2252.8	174.8	129.0	1.61	20.3	112.3	62.0	0.0345	0.0435	0.0576	1344	2358	2493
BORDEAUX	880.9	3	36	35.76	10.54	2601	2438.0	235.5	185.9	1.61	19.6	112.3	62.9	0.0318	0.0402	0.0532	1416	2489	2632
ANTWERP	944.9	3	46	36.86	9.78	2757	2616.5	213.3	160.1	1.61	20.2	112.3	62.0	0.0297	0.0378	0.0498	1471	2598	2749
BERIN	1006.5	3	46	38.20	10.54	2948	2784.9	242.5	185.9	1.61	20.0	112.3	62.3	0.0278	0.0356	0.0467	1532	2714	2873
MADRID	1013.1	4	54	38.20	9.78	2944	2804.3	217.1	160.1	1.61	20.4	112.3	61.8	0.0276	0.0354	0.0464	1535	2722	2881
ATHENS	1409.7	4	68	44.75	10.54	4064	3901.4	265.2	185.9	1.61	20.7	112.3	61.2	0.0199	0.0267	0.0343	1844	3336	3539

1. ACCC® is produced using 1350-O (fully annealed) aluminum.
2. Strength at ambient temperature. Based on 96% of the 1350-O minimum tensile strength (8500 psi/58.6 Mpa) and 100% of the composite core minimum tensile strength (310 ksi/2137 Mpa).
3. Maximum operating temperature of ACCC® is 180°C and a maximum emergency temperature of 200°C (10000 hours over the life of the conductor).
4. Ampacity values based on 50 Hz, zero elevation, 90° sun altitude, 25°C ambient temperature, 0.5 Solar Absorbivity, 0.5 Emissivity, 2 ft/sec (0.61 m/sec) wind and 96 Watt/ft² (1033 W/m²), at corresponding surface temperatures. Coefficient of thermal resistance is 0.00403 for International sizes.

• ACCC® ULS - ASTM SIZE

ACCC® ULS	Đặc tính cơ Mechanical Specifications												Đặc tính điện Electrical Specifications						
	Phần nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phần nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây ASTM ASTM size	mm²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10⁻⁶ (1/°C)	x10⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
ULS IRVING	308.8	2	20	22.40	8.76	960	852	173.4	156.1	0.75	15.4	146	69.3	0.0903	0.1111	0.1498	753	1280	1348
ULS AMARILLO	397.6	2	20	25.14	9.53	1225	1097	205.5	183.3	0.75	16.0	146	70.3	0.0702	0.0870	0.1174	877	1499	1579
ULS LUBBOCK	458	2	20	26.42	8.76	1370	1262	181.5	156.1	0.75	17.2	146	64.9	0.0608	0.0752	0.1011	956	1640	1729
ULS GALVESTON	512.4	2	22	27.69	8.76	1520	1412	184.6	156.1	0.75	17.7	146	63.9	0.0544	0.0674	0.0905	1022	1760	1856
ULS DRAKE	519.7	2	22	28.14	9.53	1561	1433	212.2	183.3	0.75	17.0	146	65.3	0.0536	0.0662	0.0888	1036	1786	1884
ULS CURLEW	523.4	2	22	28.96	10.54	1612	1455	254.5	225.1	0.75	16.1	146	67.4	0.0535	0.0664	0.0888	1042	1802	1901
ULS PLANO	536.8	3	36	28.63	8.76	1591	1483	185.9	156.1	0.75	17.9	146	63.5	0.0522	0.0649	0.0870	1050	1813	1913
ULS CORPUS CHRISTI	558.9	3	36	29.11	8.76	1651	1543	187.2	156.1	0.75	18.0	146	63.2	0.0501	0.0625	0.0836	1076	1860	1962
ULS ARLINGTON	583.2	3	36	29.90	9.53	1741	1613	215.8	183.3	0.75	17.5	146	64.3	0.0480	0.0599	0.0802	1106	1915	2021
ULS CARDINAL	619.1	3	36	30.43	8.76	1818	1710	190.8	156.1	0.75	18.4	146	62.4	0.0452	0.0563	0.0751	1146	1990	2101
ULS FORT WORTH	658.9	3	36	31.50	9.53	1948	1820	220.2	183.3	0.75	18.0	146	63.2	0.0425	0.0533	0.0711	1189	2067	2183
ULS EL PASO	684	3	36	31.80	8.76	1996	1888	194.4	156.1	0.75	18.8	146	61.7	0.0409	0.0515	0.0686	1212	2111	2230
ULS BEAUMONT	723.9	3	36	32.87	9.53	2133	2004	223.8	183.3	0.75	18.4	146	62.5	0.0387	0.0488	0.0649	1257	2193	2317
ULS SAN ANTONIO	747.3	3	36	33.40	9.78	2203	2068	235.3	193.5	0.75	18.3	146	62.6	0.0375	0.0458	0.0608	1302	2278	2408
ULS BITTERN	801.4	3	36	34.16	8.76	2325	2217	201.0	156.1	0.75	19.3	146	60.7	0.0352	0.0444	0.0589	1331	2333	2466
ULS DALLAS	909.5	3	46	36.88	9.78	2663	2528	244.7	193.5	0.75	19.0	146	61.3	0.0309	0.0398	0.0521	1435	2541	2689
ULS HOUSTON	976.6	3	46	38.25	10.54	2871	2714	279.8	225.1	0.75	18.7	146	61.8	0.0285	0.0370	0.0482	1502	2675	2833
ULS LAPWING	987.5	4	54	38.20	9.78	2879	2744	248.7	193.5	0.75	19.2	146	60.7	0.0285	0.0370	0.0485	1502	2665	2821
ULS CHUKAR	1135.8	4	56	40.74	10.03	3298	3156	268.7	205.1	0.75	19.5	146	60.3	0.0247	0.0324	0.0423	1633	2913	3085
ULS FALCON	1036.2	4	56	39.24	10.54	3036	2879	283.4	225.1	0.75	18.9	146	61.4	0.0271	0.0350	0.0459	1555	2761	2923
ULS BLUEBIRD	1388.7	4	68	44.75	10.54	4015	3858	302.9	225.1	0.75	19.8	146	59.7	0.0203	0.0282	0.0370	1794	3213	3405

1. Ampacity values based on 60 Hz, zero elevation, 90° sun altitude, 25°C ambient temperature, 0.5 Solar Absorbivity, 0.5 Emissivity, 2 ft/sec (0.61 m/sec) wind and 96 Watt/ft² (1033 W/m²), at corresponding surface temperatures. Coefficient of thermal resistance is 0.00404 for ASTM size.
2. ULS Conductors have a composite core that exhibits a higher tensile strength and modulus, used for long span crossing and heavy ice loads.

• ACCC® ULS - IEC SIZE

ACCC® ULS	Đặc tính cơ Mechanical Specifications													Đặc tính điện Electrical Specifications					
	Phần nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phần nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây IEC International Size	mm ²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10 ⁻⁶ (1/°C)	x10 ⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
ULS MONTE CARLO	228.5	2	28	20.78	10.54	792	635	238.0	225.1	0.75	12.1	146	82.5	0.1230	0.1504	0.2024	634	1076	1133
ULS OSLO	313.8	2	20	22.40	8.76	976	868	173.8	156.1	0.75	15.7	146	72.3	0.0893	0.1095	0.1471	759	1292	1361
ULS 25 MM	383.2	2	20	24.99	10.54	1216	1059	246.7	225.1	0.75	14.9	146	74.5	0.0730	0.0896	0.1203	863	1478	1558
ULS LEIPZIG	406.4	2	20	25.15	9.53	1253	1125	206.2	183.3	0.75	16.2	146	71.2	0.0690	0.0848	0.1138	888	1522	1605
ULS STOCKHOLM 3L	453.7	3	36	26.39	8.76	1363	1255	181.6	156.1	0.75	17.4	146	68.4	0.0617	0.0760	0.1019	950	1634	1723
ULS STOCKHOLM 2L	463.3	2	22	26.39	8.76	1390	1282	182.2	156.1	0.75	17.5	146	68.2	0.0605	0.0746	0.0999	959	1650	1740
ULS WARSAW	507.5	3	36	27.71	8.76	1514	1406	184.7	156.1	0.75	17.9	146	67.4	0.0553	0.0683	0.0914	1015	1751	1848
ULS DUBLIN	524.5	2	22	28.14	9.53	1580	1451	212.8	183.3	0.75	17.3	146	68.6	0.0534	0.0660	0.0883	1037	1791	1889
ULS KOLKATA	543.5	3	34	28.63	9.53	1639	1511	213.9	183.3	0.75	17.5	146	68.3	0.0517	0.0639	0.0855	1059	1829	1931
ULS MAHAKAM	544.9	3	36	29.01	10.54	1663	1506	255.7	225.1	0.75	16.6	146	70.3	0.0514	0.0638	0.0852	1063	1840	1942
ULS HAMBURG	546.4	3	36	28.63	8.76	1622	1514	186.8	156.1	0.75	18.2	146	66.8	0.0514	0.0636	0.0850	1061	1834	1936
ULS MILAN	567.7	3	36	29.11	8.76	1681	1573	188.0	156.1	0.75	18.3	146	66.5	0.0494	0.0612	0.0818	1086	1880	1985
ULS ROME	592.5	3	36	29.90	9.53	1770	1642	216.6	183.3	0.75	17.8	146	67.5	0.0474	0.0588	0.0785	1117	1936	2044
ULS VIENNA	629.2	3	36	30.43	8.76	1847	1739	191.5	156.1	0.75	18.7	146	65.8	0.0445	0.0554	0.0738	1156	2008	2120
ULS BUDAPEST	668.3	3	36	31.50	9.53	1980	1852	220.9	183.3	0.75	18.3	146	66.6	0.0420	0.0523	0.0697	1200	2089	2206
ULS MUMBAI	685.4	3	36	31.78	9.53	2031	1903	221.9	183.3	0.75	18.4	146	66.4	0.0410	0.0511	0.0681	1217	2119	2239
ULS PRAGUE	690.7	3	36	31.78	8.76	2025	1917	195.0	156.1	0.75	19.0	146	65.1	0.0407	0.0508	0.0676	1220	2126	2246
ULS DHAKA	723.9	3	36	32.87	9.53	2133	2004	224.0	183.3	0.75	18.4	146	62.5	0.0387	0.0488	0.0649	1257	2193	2317
ULS MUNICH	733.2	3	36	32.84	9.53	2166	2038	224.5	183.3	0.75	18.6	146	65.9	0.0384	0.0480	0.0638	1266	2211	2337
ULS WARWICK	749.5	3	36	33.40	10.54	2236	2079	267.3	225.1	0.75	18.0	146	67.3	0.0375	0.0469	0.0624	1287	2248	2375
ULS LONDON	759	3	36	33.40	9.78	2240	2105	236.2	193.5	0.75	18.6	146	65.9	0.0370	0.0464	0.0616	1294	2264	2393
ULS PARIS	813.7	3	36	34.16	8.76	2361	2253	201.9	156.1	0.75	19.5	146	64.1	0.0345	0.0435	0.0576	1344	2358	2493
ULS BORDEAUX	880.9	3	36	35.76	10.54	2595	2438	274.7	225.1	0.75	18.6	146	66.0	0.0318	0.0402	0.0532	1416	2489	2632

• ACCC® ULS - IEC SIZE

ACCC® ULS	Đặc tính cơ Mechanical Specifications										Đặc tính điện Electrical Specifications								
	Phân nhôm Aluminium			Đường kính Diameter		Khối lượng Weight		Lực kéo đứt Rated Strength		Hệ số giãn nhiệt Coef. of Linear Expansion		Modun đàn hồi Final Modulus of Elasticity		Điện trở Nominal resistance			Dòng định mức AC AC current rating		
	Tiết diện Nominal cross-section area	Số lớp Layers	Số sợi Number of wires	Dây dẫn Cond.	Lõi Core	Tổng Total	Phân nhôm AL.	Dây dẫn Cond.	Lõi Core	Above Thermal Knee point	Below Thermal Knee point	Above Thermal Knee point	Below Thermal Knee point	DC 20°C	AC 75°C	AC 180°C	75°C	180°C	200°C
Cỡ dây IEC International Size	mm²	#	#	mm	mm	kg/km	kg/km	kN	kN	x10⁻⁶ (1/°C)	x10⁻⁶ (1/°C)	GPa	GPa	Ω/km	Ω/km	Ω/km	A	A	A
ULS ANTWERP	944.9	3	46	36.86	9.78	2752	2617	246.7	193.5	0.75	19.3	146	64.5	0.0297	0.0378	0.0498	1471	2598	2749
ULS BERLIN	1006.5	3	46	38.20	10.54	2942	2785	281.7	225.1	0.75	19.0	146	65.1	0.0278	0.0356	0.0467	1532	2714	2873
ULS MADRID	1013.1	4	54	38.20	9.78	2940	2804	250.5	193.5	0.75	19.5	146	64.1	0.0276	0.0354	0.0464	1535	2722	2881
ULS ATHENS	1409.7	4	68	44.75	10.54	4059	3901	304.4	225.1	0.75	20	146	63.2	0.0199	0.0267	0.0343	1844	3336	3539

1. Ampacity values based on 50 Hz, zero elevation, 90° sun altitude, 25°C ambient temperature, 0.5 Solar Absorbivity, 0.5 Emissivity, 2 ft/sec (0.61 m/sec) wind and 96 Watt/ft² (1033 W/m²), at corresponding surface temperatures. Coefficient of thermal resistance is 0.00403 for International size.
2. ULS Conductors have a composite core that exhibits a higher tensile strength and modulus, used for long span crossing and heavy ice loads.