

400/230 kV XLPE Cable

Single-core XLPE High Voltage Cable with Aluminium laminated sheath

Cable layout

- *Copper* conductor, stranded, cross-sections of 1000 sqmm and above segmented, optionally with longitudinal water barrier
- Inner semiconductive layer, firmly bonded to the XLPE insulation
- XLPE main insulation, cross-linked
- Outer semiconductive layer, firmly bonded to the XLPE insulation
- *Copper* wire screen with semi-conductive swelling tapes as longitudinal water barrier
- *Aluminium* laminated sheath
- HDPE oversheath, halogen-free, as mechanical protection, optionally: with semi-conductive and/or flame-retardant layer

Production process

The inner semiconductive layer, the XLPE main insulation and the outer semiconductive layer are extruded in a single operation.

Special features of metallic sheath

- *Copper* wire screen as short-circuit current carrying component
- *Aluminium* foil, overlapped, 0,25 mm thick, as radial diffusion barrier
- Low weight, low cost, internationally proven design

Applicable standards

IEC 62067 (2001)
ANSI / ICEA S-108-720-2004

XDRCU-ALT 400/230 kV



Technical data

Copper conductor cross-section		Outer diameter approx. mm	Cable weight approx. kg/m	Capacitance µF/km	Impedance (90°C, 50 Hz) Ω/km	Surge impedance Ω	Min. bending radius mm	Max. pulling force kN
mm ²	kcmil							
500	1000	113	16	0.12	0.23	56	2300	30
630	1250	114	17	0.13	0.22	53	2300	38
800	1600	115	18	0.15	0.20	48	2300	48
1000	2000	118	21	0.17	0.19	45	2400	60
1200	2400	122	24	0.19	0.19	43	2450	72
1400	2750	123	25	0.20	0.18	41	2450	84
1600	3200	128	28	0.20	0.18	40	2600	96
2000	4000	135	33	0.21	0.17	39	2700	120
2500	5000	136	38	0.26	0.17	35	2700	150

Ampacity

Load Factor		Buried in soil ∴ 0.7	Buried in soil ∴ 1.0	Buried in soil ∴∴ 0.7	Buried in soil ∴∴ 1.0	In free air ∴ -	In free air ∴∴ -
mm ²	kcmil	A	A	A	A	A	A
500	1000	853	723	912	788	924	1006
630	1250	972	819	1049	900	1068	1173
800	1600	1098	917	1199	1020	1228	1367
1000	2000	1298	1076	1416	1195	1478	1647
1200	2400	1402	1158	1534	1290	1612	1804
1400	2750	1509	1241	1665	1394	1755	1980
1600	3200	1600	1315	1767	1477	1869	2112
2000	4000	1760	1440	1956	1628	2078	2376
2500	5000	1931	1565	2190	1804	2347	2739

Calculation basis:

Conductor temperature 90°C, soil temperature 25°C, laying depth 1200 mm, 50 Hz; phase distance flat 30 cm, air temperature 35°

Earthing method: Single-end bonding or Cross-bonding

Values apply for cables with rated voltages from 380 kV to 400 kV acc. to IEC 62067