

## **35kV CU 133% EPR (EAM) LCT LLDPE**

Single Conductor, 420 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

### **CONSTRUCTION:**

- Conductor:** Moisture blocked class B compressed stranded soft drawn bare copper per ASTM B3 and ASTM B8 (Conductor moisture block optional and tinned copper per ASTM B33 optional)
- Conductor Shield:** Conventional Semi-conducting cross-linked copolymer; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
- Insulation:** 420 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Tape Shield:** 10 mils Longitudinally Corrugated Copper Tape Shield
- Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

### **APPLICATIONS AND FEATURES:**

Southwire's 35kV cables are suited for use in wet and dry areas, conduits, ducts, direct burial, sunlight, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Jacket types available that can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

### **SPECIFICATIONS:**

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- IECA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)
- Rural Utility Standard RUS 1728F-U1 or 1728.204 (Electric standards and specifications for materials and construction)
- UL 1072 Listed as MV 90 When Specified

### **SAMPLE PRINT LEGEND:**

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] CU 35000 VOLTS EPR INSULATION 420 MILS -- (NESC) --  
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET

**Table 1 – Weights and Measurements**

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
4/0 (19)	0.512	1.390	420	1.470	110	1.790	1904	21.5	1692
250 (37)	0.558	1.444	420	1.524	110	1.844	2085	22.1	2000
350 (37)	0.661	1.547	420	1.627	110	1.947	2506	23.4	2800
500 (37)	0.789	1.675	420	1.755	110	2.075	3107	24.9	4000
750 (61)	0.968	1.864	420	1.944	110	2.264	4092	27.2	6000
1000 (61)	1.117	2.013	420	2.093	110	2.413	5025	29.0	8000

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

**Table 2 – Electrical and Engineering Data**

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance	Positive Sequence Impedance	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C	Allowable Ampacity Directly Buried 90°C
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
4/0 (19)	0.051	0.065	0.048	0.050	0.417	72.5	0.293 + j0.115	0.067 + j0.051	5550	300	360
250 (37)	0.043	0.056	0.045	0.049	0.444	77.2	0.278 + j0.109	0.058 + j0.050	5732		
350 (37)	0.031	0.041	0.040	0.047	0.494	85.9	0.252 + j0.099	0.043 + j0.047	6081	400	470
500 (37)	0.022	0.030	0.036	0.044	0.556	96.6	0.229 + j0.088	0.032 + j0.044	6514	485	560
750 (61)	0.014	0.023	0.031	0.041	0.646	112.3	0.206 + j0.075	0.025 + j0.042	7154	595	670
1000 (61)	0.011	0.019	0.028	0.039	0.717	124.6	0.191 + j0.067	0.021 + j0.040	7659	675	745

\*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

\*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

\*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center.

**Table 3 – Weights and Measurements (Metric)**

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
4/0 (19)	13.00	35.31	10.67	37.34	2.79	45.47	2833	546.10	7529
250 (37)	14.17	36.68	10.67	38.71	2.79	46.84	3103	561.34	8900
350 (37)	16.79	39.29	10.67	41.33	2.79	49.45	3729	594.36	12460
500 (37)	20.04	42.55	10.67	44.58	2.79	52.71	4624	632.46	17800
750 (61)	24.59	47.35	10.67	49.38	2.79	57.51	6090	690.88	26700
1000 (61)	28.37	51.13	10.67	53.16	2.79	61.29	7478	736.60	35600

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor

TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

**Table 4 – Electrical and Engineering Data (Metric)**

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance*	Positive Sequence Impedance*	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C	Allowable Ampacity Directly Buried 90°C
AWG/ Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
4/0 (19)	0.1673	0.21	0.0146	0.1640	1.368	237.8609	0.293 + j0.115	0.067 + j0.051	5550	300	360
250 (37)	0.1411	0.18	0.0137	0.1608	1.457	253.2808	0.278 + j0.109	0.058 + j0.050	5732		
350 (37)	0.1017	0.13	0.0122	0.1542	1.621	281.8241	0.252 + j0.099	0.043 + j0.047	6081	400	470
500 (37)	0.0722	0.10	0.0110	0.1444	1.824	316.9291	0.229 + j0.088	0.032 + j0.044	6514	485	560
750 (61)	0.0459	0.08	0.0094	0.1345	2.119	368.4383	0.206 + j0.075	0.025 + j0.042	7154	595	670
1000 (61)	0.0361	0.06	0.0085	0.1280	2.352	408.7927	0.191 + j0.067	0.021 + j0.040	7659	675	745

\*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

\*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

\*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center.