

3/C CU 15kV 220 NLEPR 133% CPE MV-105

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Chlorinated Polyethylene (CPE) Jacket



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Poly glass tape
9. **Overall Jacket:** Thermoplastic Chlorinated Polyethylene (CPE)

APPLICATIONS AND FEATURES:

Southwire's 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, 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. Rated at -35°C for cold bend. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. Rated for 1000 lbs./FT maximum sidewall pressure.

SPECIFICATIONS:

- ASTM B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

SAMPLE PRINT LEGEND:

{SQFTG_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C XXX AWG CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS GW 1 X X AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}



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Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
643380	2	0.283	0.760	0.820	1 x 6	110	2.062	2275	1593	14.4
584041	1/0	0.362	0.839	0.899	1 x 4	110	2.233	2884	2534	15.6
646904	2/0	0.405	0.882	0.942	1 x 3	110		3253	3194	16.3
584042	3/0	0.456	0.933	0.993	1 x 3	110	2.436	3749	4027	17.1
560251	4/0	0.512	0.989	1.049	1 x 3	110	2.557	4309	5078	17.9
563785	350	0.661	1.147	1.207	1 x 2	110	2.898	6081	8400	20.3
561232	500	0.789	1.275	1.335	1 x 1	135	3.225	8058	12000	22.6
TBA	750	0.968	1.463	1.523	1 x 0	135	3.631	11036	18000	25.4

All dimensions are nominal and subject to normal manufacturing tolerances

∅ Cable marked with this symbol is a standard stock item

¹ Comply with ICEA S-93-639 Appendix C for jacket thickness determination

Table 2 – Electrical and Engineering Data

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Shield Short Circuit Current 6 Cycles	Allowable Ampacity In Duct 90/105°C [†]	Allowable Ampacity In Air 90/105°C [‡]
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.162	0.203	0.053	0.047	0.577 + j0.419	0.203 + j0.047	2700	150/160	165/185
1/0	0.102	0.128	0.045	0.043	0.499 + j0.383	0.128 + j0.043	2957	195/210	215/240
2/0	0.081	0.101	0.042	0.042	0.471 + j0.366	0.102 + j0.042	3097	220/235	245/275
3/0	0.064	0.081	0.039	0.040	0.446 + j0.346	0.081 + j0.040	3263	250/270	285/315
4/0	0.051	0.064	0.036	0.039	0.426 + j0.327	0.065 + j0.039	3445	285/305	325/360
350	0.031	0.039	0.030	0.036	0.386 + j0.279	0.040 + j0.036	3959	375/400	435/490
500	0.022	0.028	0.026	0.034	0.362 + j0.247	0.028 + j0.034	4376	450/485	535/600
750	0.014	0.020	0.022	0.032	0.335 + j0.209	0.020 + j0.032	4987	545/585	670/745

* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

[†] Ampacities are based on TABLE 310.60(C)(79) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

[‡] Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

