

3/C CU 15kV 220 NLEPR 133% PVC MV-105. Silicone Free

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA. Silicone Free



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Filler:** Wax paper filler
- Binder:** Poly glass tape
- Overall Jacket:** Polyvinyl Chloride (PVC)

APPLICATIONS AND FEATURES:

Southwire's 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, aerially supported by a messenger 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
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 1072 Medium-Voltage Power Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- CSA C22.2 No.230 Tray Cables - Rated TC-ER
- CSA C22.2 No. 2556 / UL 2556 Cable Test Methods
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV



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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 3 AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL -- CSA XXX AWG CU 5.59mm (220 mils) NL-EPR 15KV 133% INS LEVEL 25%TS SR TC-ER 90{D}C FT4 -40{D}C LTGG {NESC}

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
956490	2	0.283	0.760	0.820	1 x 6	110	2.062	2246	1593	14.4
958298	1	0.322	0.799	0.859	1 x 4	110	2.147	2545	2009	15.0
958306	1/0	0.362	0.839	0.899	1 x 4	110	2.233	2852	2534	15.6
558254	2/0	0.405	0.882	0.942	1 x 4	110	2.326	3220	3194	16.3
956284	4/0	0.512	0.989	1.049	1 x 3	110	2.557	4272	5078	17.9
558288	250	0.558	1.044	1.104	1 x 3	110	2.676	4777	6000	18.7
958322	350	0.661	1.147	1.207	1 x 2	110	2.898	6039	8400	20.3
653583	500	0.789	1.275	1.335	3 x 1	135	3.152	8341	12000	22.1
578614	500	0.789	1.275	1.335	1 x 4/0	135	3.203	8360	12000	22.4
958330◇	500	0.789	1.275	1.335	1 x 1	135	3.225	8001	12000	22.6
653562^	750	0.968	1.463	1.523	1 x 0	135	3.631	10971	18000	25.4
558312	750	0.968	1.463	1.523	1 x 0	135	3.631	10971	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

^ 750kcmil Stock#: 653562 has a RED outer jacket

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	0.129	0.161	0.049	0.045	0.535 + j0.401	0.162 + j0.045	2827	170/185	185/210
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
4/0	0.051	0.064	0.036	0.039	0.426 + j0.327	0.065 + j0.039	3445	285/305	325/360
250	0.043	0.054	0.034	0.038	0.411 + j0.309	0.055 + j0.038	3624	310/335	360/400
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
500	0.022	0.028	0.026	0.034	0.362 + j0.247	0.028 + j0.034	4376	450/485	535/600
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
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 ohms-meter

† Ampacities are based on TABLE 310.60(C)(79) Detail 1. of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(71) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

