

# 1/C CU 15kV 220 NLEPR (Lead-Free EAM) 133% SIMpull® PVC MV-105

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



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 optional per ASTM B33
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) / No-Lead Ethylene Alkene Copolymer (EAM) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- 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 when installed with a grounding conductor in close proximity that conforms to NEC section 311.36 and 250.4(A)(5), 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. ST1 (low smoke) Rated for sizes 1/0 and larger. PVC jacket is made with SIM technology and has a coefficient of friction COF of 0.2. Cable can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemicals, oils and acids and are flame retardant.

## 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
- ASTM B496 Compact Round Concentric-lay-standard copper
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- CSA C22.2 No.230 Tray Cables - Rated TC-ER (1/0 AWG and Larger)
- 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
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable



Southwire

**CABLETECH  
SUPPORT™**

Services

- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

## SAMPLE PRINT LEGEND:

{SQFTG\_DUAL} SOUTHWIRE SIMpull{R} POWER CABLE MASTER-DESIGN {UL} XX KCMIL CU 220 MILS NL-EPR 15KV 133%  
 INS LEVEL 25%TS MV-105 FOR CT USE ST1 SUN RES (NESC) -- {CSA} XX KCMIL CU 5.59mm (220 mils) NL-EPR 15KV 133%  
 INS LEVEL 25%TS SR TC-ER 105{D}C FT4 -25{D}C LTDD -- PAT www.patentSW.com -- RoHS

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/ Kcmil	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
953638◇	2	0.283	0.760	0.820	80	1.000	639	531	12.0	3
955104	1	0.322	0.799	0.859	80	1.039	715	670	12.5	3
955989◇	1/0	0.362	0.839	0.899	80	1.079	809	845	12.9	3
955997◇	2/0	0.405	0.882	0.942	80	1.122	922	1065	13.5	3.5
956003	3/0	0.456	0.933	0.993	80	1.173	1063	1342	14.1	3.5
956011◇	4/0	0.512	0.989	1.049	80	1.229	1235	1693	14.7	3.5
956029◇	250	0.558	1.044	1.104	80	1.284	1390	2000	15.4	4
956037◇	350	0.661	1.147	1.207	80	1.387	1767	2800	16.6	4
956045◇	500	0.789	1.275	1.335	80	1.515	2314	4000	18.2	5
643755◇	600	0.866	1.361	1.421	80	1.601	2680	4800	19.2	5
956052◇	750	0.968	1.463	1.523	80	1.703	3323	6000	20.4	5
956060◇	1000	1.117	1.612	1.672	110	1.912	4183	8000	22.9	6
581886**	1250	1.250	1.767	1.827	110	2.067	5074	10000	24.8	6
567443	1500	1.370	1.930	1.990	110	2.164	5853	12000	26.2	
550811	2000	1.583	2.138	2.198	110	2.438	7682	16000	29.3	

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

\* Conduit size based on 3 phase 40% fill-factor without ground

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

\*\* Non SIMpull 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	0.051	0.573 + j0.418	0.203 + j0.051	2700	155/165	195/215
1	0.129	0.161	0.049	0.049	0.531 + j0.400	0.162 + j0.049	2827	175/185	225/250
1/0	0.102	0.128	0.045	0.047	0.496 + j0.383	0.128 + j0.047	2957	200/215	260/290
2/0	0.081	0.101	0.042	0.045	0.467 + j0.366	0.102 + j0.045	3097	230/245	300/335
3/0	0.064	0.080	0.039	0.043	0.443 + j0.346	0.081 + j0.043	3263	260/275	345/385
4/0	0.051	0.064	0.036	0.042	0.423 + j0.327	0.065 + j0.042	3445	295/315	400/445
250	0.043	0.054	0.034	0.041	0.409 + j0.309	0.055 + j0.041	3624	325/345	445/495
350	0.031	0.039	0.030	0.039	0.384 + j0.279	0.040 + j0.039	3959	390/415	550/610
500	0.022	0.028	0.026	0.037	0.361 + j0.248	0.029 + j0.037	4376	465/500	685/765
600	0.018	0.024	0.024	0.036	0.348 + j0.229	0.024 + j0.036	4655	505/544	765/855
750	0.014	0.019	0.022	0.035	0.334 + j0.210	0.020 + j0.035	4987	565/610	885/990
1000	0.011	0.015	0.020	0.034	0.315 + j0.185	0.016 + j0.034	5472	640/690	1060/1185
1250	0.009	0.013	0.019	0.033	0.298 + j0.165	0.014 + j0.033	5976	715/770	1210/1350
1500	0.007	0.011	0.017	0.032	0.286 + j0.151	0.012 + j0.032	6363	790/850	1331/1485
2000	0.005	0.010	0.016	0.032	0.263 + j0.127	0.011 + j0.032	7183	940/1010	1575/1755

\* Calculations are based on three cables triplexed / 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)(77) 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)(69) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

