

## 3/C CU 15kV 220 TRXLPE 133% PVC MV-105

Type MV-105 Three Conductor Copper, 220 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket. 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 Tree Retardant Cross Linked Polyethylene (TRXLPE) 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, 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
- 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
- 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
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661



**SAMPLE PRINT LEGEND:**

{SQFTG\_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C X AWG CU 220 MILS XLP 15KV 133% INS LEVEL 25%TS GW 1 X X AWG CU MV-105 SUN. RES. FOR DIRECT BURIAL {NESC}

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
673477	2	0.283	0.760	0.820	1 x 6	110	2.062	2246	1593	14.4
673482	1	0.322	0.799	0.859	1 x 4	110	2.147	2545	2009	15.0
673488	1/0	0.362	0.839	0.899	1 x 4	110	2.233	2852	2534	15.6
653545	2/0	0.405	0.882	0.942	1 x 4	110	2.326	3220	3194	16.3
653546	3/0	0.456	0.934	0.994	1 x 3	110	2.426	3695	4027	16.9
673496	4/0	0.512	0.989	1.049	1 x 3	110	2.557	4272	5078	17.9
653547	250	0.558	1.044	1.104	1 x 3	110	2.676	4777	6000	18.7
653548	350	0.661	1.147	1.207	1 x 2	110	2.898	6039	8400	20.3
653549	500	0.789	1.275	1.335	1 x 1	135	3.225	8001	12000	22.6
TBA	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

<sup>1</sup> 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 <sup>†</sup>	Allowable Ampacity In Air 90/105°C <sup>‡</sup>
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
3/0	0.063	0.078	0.038	0.024	0.471 + j0.366	0.102 + j0.042	2851	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
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)

