

# 1/C CU 15kV 220 NLEPR 133% LSZH MV-105 Thermoset Solonon

Type MV-105 Single Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoset SOLONON® Low Smoke Zero Halogen (XL LSZH) Jacket, Dual Rated UL/CSA



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. **Overall Jacket:** Thermoset SOLONON® Low Smoke Zero Halogen (XL LSZH)

## 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 -25°C for cold bend. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure. Thermoset Solonon® jacket (XL LSZH).

## 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 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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
- 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
- NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems

## SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 [-25°C] YEAR (NESC) [SEQUENTIAL FEET MARKS]



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**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
TBA	2	0.283	0.760	0.820	80	1.000	653	531	12.0	3
TBA	1	0.322	0.799	0.859	80	1.039	729	670	12.5	3
TBA	1/0	0.362	0.839	0.899	80	1.079	824	845	12.9	3
TBA	2/0	0.405	0.882	0.942	80	1.122	937	1065	13.5	3.5
TBA	3/0	0.456	0.933	0.993	80	1.173	1079	1342	14.1	3.5
TBA	4/0	0.512	0.989	1.049	80	1.229	1253	1693	14.7	3.5
TBA	250	0.558	1.044	1.104	80	1.284	1408	2000	15.4	4
TBA	350	0.661	1.147	1.207	80	1.387	1787	2800	16.6	4
TBA	500	0.789	1.275	1.335	80	1.515	2336	4000	18.2	5
TBA	750	0.968	1.463	1.523	80	1.703	3235	6000	20.4	5
TBA	1000	1.117	1.612	1.672	110	1.912	4220	8000	22.9	6

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

**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	0.051	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
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

\* 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

<sup>†</sup> Ampacities are based on TABLE 310.60(C)(77) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

<sup>‡</sup> Ampacities are based on TABLE 310.60(C)(69) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

