

# 1/C CU 25kV 260 NLEPR 100% SOLONON LSZH MV-105

Type MV-105 Single Conductor Copper, 260 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Solonon LSZH 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:** 260 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% 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:** Solonon Low Smoke Zero Halogen (LSZH)

## APPLICATIONS AND FEATURES:

Southwire's 25KV 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. ST1 (low smoke) Rated for sizes 1/0 and larger. 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 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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 260 MILS NL-EPR 25KV 100% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL FT4 -ST1 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	1/0	0.362	0.919	0.979	80	1.159	885	845	13.9	3.5
TBA	2/0	0.405	0.962	1.022	80	1.202	1001	1065	14.4	3.5
TBA	3/0	0.456	1.013	1.073	80	1.253	1145	1342	15.0	3.5
TBA	4/0	0.512	1.069	1.129	80	1.309	1321	1693	15.7	4
TBA	250	0.558	1.124	1.184	80	1.364	1479	2000	16.4	4
TBA	350	0.661	1.227	1.287	80	1.467	1863	2800	17.6	5
TBA	500	0.789	1.355	1.415	80	1.595	2418	4000	19.1	5
TBA	750	0.968	1.543	1.603	110	1.843	3425	6000	22.1	6
TBA	1000	1.117	1.692	1.752	110	1.992	4312	8000	23.9	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
1/0	0.102	0.128	0.050	0.048	0.491 + j0.356	0.128 + j0.048	3218	200/215	260/290
2/0	0.081	0.101	0.047	0.047	0.462 + j0.340	0.102 + j0.047	3357	230/245	300/330
3/0	0.064	0.080	0.043	0.045	0.437 + j0.322	0.081 + j0.045	3523	260/275	345/380
4/0	0.051	0.064	0.040	0.043	0.416 + j0.305	0.065 + j0.043	3706	295/315	395/445
250	0.043	0.054	0.038	0.042	0.402 + j0.289	0.055 + j0.042	3884	325/345	440/490
350	0.031	0.039	0.033	0.040	0.377 + j0.262	0.040 + j0.040	4220	390/415	545/605
500	0.022	0.028	0.029	0.038	0.353 + j0.232	0.029 + j0.038	4636	465/500	680/755
750	0.014	0.019	0.025	0.037	0.325 + j0.198	0.020 + j0.036	5248	565/610	870/970
1000	0.011	0.015	0.022	0.035	0.307 + j0.176	0.016 + j0.035	5732	640/690	1040/1160

\* 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)

