

## 3/C CU 5kV 115 NLEPR 133% Thermoplastic CPE-TP MV-105

Type MV-105 Three Conductor Copper, 115 Mills No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoplastic Chlorinated Polyethylene (CPE-TP) 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:** 115 Mills 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:** Thermoplastic Chlorinated Polyethylene (CPE-TP)

### APPLICATIONS AND FEATURES:

Southwire's 5KV 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 -40°C for cold bend 1/0 and larger. 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 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
- 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-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV



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SUPPORT™**

Services

- 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 XX AWG CU 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS GW 1 X XX AWG CU MV-105 FOR CT USE 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
552345	2	0.282	0.545	0.605	1 x 6	70	1.518	1567	1592	10.6
TBA	1	0.322	0.59	0.65	1 x 4	70	1.599	1791	2008	11.1
TBA	1/0	0.361	0.629	0.689	1 x 4	110	1.763	2196	2534	12.3
551848	2/0	0.405	0.674	0.734	1 x 4	110	1.857	2583	3194	12.9
TBA	3/0	0.456	0.724	0.784	1 x 3	110	1.968	2994	4027	13.7
561038	4/0	0.512	0.766	0.826	1 x 3	110	2.036	3496	5078	14.2
TBA	250	0.558	0.834	0.894	1 x 3	110	2.206	3987	6000	15.4
560450	350	0.661	0.917	0.977	1 x 2	110	2.388	5208	8400	16.7
561230	500	0.789	1.042	1.102	1 x 1	110	2.688	7024	12000	18.8
560449	750	0.968	1.254	1.314	1 x 1/0	135	3.16	9973	18000	22.1

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	0.204	0.0357	0.04	0.564 + j0.545	0.204 + j0.041	1749	135/145	140/154
1	0.128	0.162	0.0327	0.0385	0.527 + j0.522	0.162 + j0.039	1864	155/165	160/180
1/0	0.102	0.128	0.03	0.0371	0.496 + j0.501	0.128 + j0.037	1976	175/190	185/205
2/0	0.081	0.102	0.0277	0.0359	0.472 + j0.479	0.102 + j0.036	2102	200/220	215/240
3/0	0.064	0.081	0.0254	0.0347	0.453 + j0.455	0.081 + j0.035	2248	230/250	250/280
4/0	0.051	0.065	0.0233	0.0335	0.437 + j0.429	0.065 + j0.034	2409	265/280	285/320
250	0.043	0.056	0.0223	0.033	0.428 + j0.407	0.056 + j0.033	2564	290/315	320/355
350	0.031	0.041	0.0196	0.0315	0.409 + j0.367	0.041 + j0.032	2859	355/380	395/440
500	0.022	0.03	0.0171	0.0302	0.39 + j0.325	0.03 + j0.03	3227	430/460	485/545
750	0.014	0.023	0.015	0.029	0.368 + j0.274	0.023 + j0.029	3769	530/570	615/685

\* 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

<sup>†</sup> 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)

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



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Services