3/C CU 25kV 320 NLEPR 133% PVC MV-105

Type MV-105 Three Conductor Copper, 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) 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:** 320 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Poly glass tape
9. **Overall Jacket:** Polyvinyl Chloride (PVC)

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. 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
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 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
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 3/C [#AWG or #kcmil] CU 320 MILS NL-EPR 25KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA) FOR DIRECT BURIAL FT4 YEAR (NESC) [SEQUENTIAL FEET MARKS]

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness[1]	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
TBA	1	0.322	0.999	1.059	1 x 4	110	2.579	3255	2009	18.1
647379	1/0	0.362	1.039	1.099	1 x 4	110	2.665	3586	2534	18.7
TBA	2/0	0.405	1.082	1.142	1 x 4	110	2.758	3979	3194	19.3
TBA	3/0	0.456	1.133	1.193	1 x 3	110	2.868	4503	4027	20.1
TBA	4/0	0.512	1.189	1.249	1 x 3	135	3.039	5234	5078	21.3
TBA	250	0.558	1.244	1.304	1 x 3	135	3.158	5776	6000	22.1
TBA	350	0.661	1.347	1.407	1 x 2	135	3.380	7109	8400	23.7
679305	500	0.789	1.475	1.535	1 x 1	135	3.657	9012	12000	25.6
TBA	750	0.968	1.663	1.723	1 x 0	135	4.063	12094	18000	28.4

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
1 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†	Allowable Ampacity In Air 90/105°C‡
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
1	0.129	0.161	0.061	0.049	0.522 + j0.334	0.162 + j0.049	3478	170/185	185/210
1/0	0.102	0.128	0.057	0.048	0.485 + j0.320	0.128 + j0.048	3608	195/210	215/240
2/0	0.081	0.101	0.053	0.046	0.455 + j0.306	0.102 + j0.046	3748	220/235	245/275
3/0	0.064	0.080	0.049	0.044	0.429 + j0.291	0.081 + j0.044	3914	250/270	285/315
4/0	0.051	0.064	0.045	0.043	0.407 + j0.275	0.065 + j0.043	4096	285/305	325/360
250	0.043	0.054	0.043	0.042	0.392 + j0.261	0.055 + j0.042	4275	310/335	360/400
350	0.031	0.039	0.038	0.039	0.366 + j0.238	0.040 + j0.039	4610	375/400	435/490
500	0.022	0.028	0.034	0.037	0.342 + j0.212	0.028 + j0.037	5026	450/485	535/600
750	0.014	0.019	0.029	0.035	0.315 + j0.182	0.020 + j0.035	5638	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 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)
‡ Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)