# CU Compressed 5/8kV NLEPR Insulation 133/100% IL SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Copper, 5kV 133% /8KV 100% 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) Insulation Level, Tape Shield, SIM*pull* Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA.

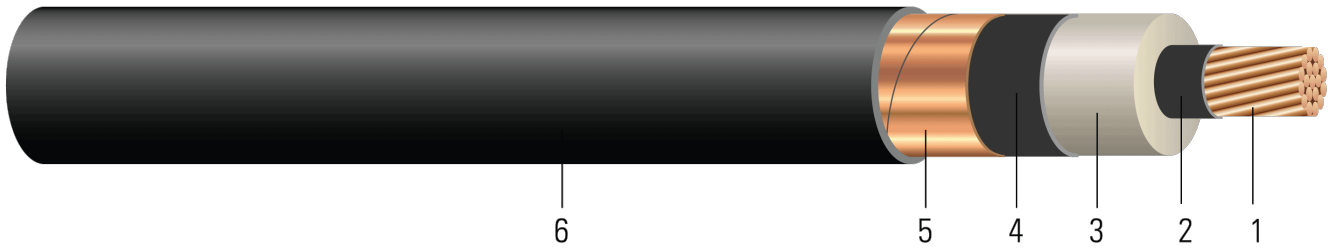



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8. Tinned copper optional per ASTM B33
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 5kV 133% /8KV 100% Insulation Level 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR)
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:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 5kV 133% /8KV 100% cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial when installed with a grounding conductor in close proximity that conforms to NEC section 311.36 and 250.4(A)(5), aerially supported by a messenger 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 and cold impact. Marked with "LTDD" CSA listed. PVC jacket is made with SIM technology and has a coefficient of friction COF of 0.2. Cable can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemicals, oils and acids and are flame retardant.

## SPECIFICATIONS:

- ASTM B3 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 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
- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)


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- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)
- 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 SIMpull{R} POWER CABLE {UL} XXX AWG CU 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV-105 FOR CT USE SUN RES {NESC} -- {CSA} XXX AWG CU X.XX mm (115 mils) NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV68.10 SR TC-ER 105{D}C FT4 -25{D}C LTDD -- PAT www.patentSW.com -- RoHS

## Table 1 – Weights and Measurements

| Stock Number | Cond. Size | Strand Count | Diameter Over Conductor | Diameter Over Insulation | Diameter Over Insulation Shield | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight | Max Pull Tension | Min Bending Radius | Conduit Size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | No. of Strands | inch | inch | inch | mil | inch | lb/1000ft | lb/1000ft | lb | inch | inch |
| 679638 | 600 | 61 | 0.866 | 1.152 | 1.212 | 80 | 1.392 | 1955 | 2437 | 4800 | 16.7 | 3.5 |

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

## 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 |
| 600 | 0.018 | 0.026 | 0.012 | 0.033 | 0.376+j0.314 | 0.027+j0.037 | 3786 | 430/460 | 537/601 |

* NEC ampacities are based on:
* For Duct: Table 310.60(C)(11) Detail 1.
* For Free Air: Table 310.60(C)(3).
* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center..
* Capacitive Reactance is between Phase-to-Shield.


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