



# CU Compressed 15kV NLEPR Insulation 133% IL Black PVC Jacket. MV 105 - UL Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA. Silicone Free



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 per ASTM B33 optional)
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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
7. **Filler:** Wax paper filler
8. **Binder:** Poly glass tape
9. **Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, 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 -35°C for cold bend when UL listed. Rated at -40°C for cold bend and cold impact and marked with "LTGG" when CSA listed or dual UL/CSA listed. 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 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 Vertical-Tray Fire Propagation and Smoke Release Test
- 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 (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® POWER CABLE {UL} 3/C XXX AWG CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS GW 1 X 3 AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL -- CSA XXX AWG CU 5.59mm (220 mils) NL-EPR 15KV 133% INS LEVEL 25%TS SR 90°C FT4 -40°C LTGG {NESC}

**Table 1 – Weights and Measurements**

| Cond. Size | Strand Count   | Diameter Over Conductor | Diameter Over Insulation | Diameter Over Insulation Shield | Ground    | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight | Max Pull Tension | Min Bending Radius |
|------------|----------------|-------------------------|--------------------------|---------------------------------|-----------|------------------|------------|---------------|----------------|------------------|--------------------|
| AWG/ Kcmil | No. of Strands | inch                    | inch                     | inch                            | No. x AWG | mil              | inch       | lb/1000ft     | lb/1000ft      | lb               | inch               |
| 500        | 37             | 0.789                   | 1.275                    | 1.335                           | 1x1       | 135              | 3.208      | 5011          | 7706           | 12000            | 22.4               |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

^ 750kcmil Stock#: 653562 has a RED outer jacket

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                                |
| 500        | 0.022                | 0.030                | 0.025                       | 0.034                      | 0.529 + j0.445          | 0.162 + j0.049              | 4167                                  | 450/485                             | 535/600                            |

\* NEC ampacities are based on:

\* For Duct: Table 310.60(C)(13) Detail 1.

\* For Free Air: Table 310.60(C)(5).

\* 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.

\* Capacitive Reactance is between Phase-to-Shield.

