

## 3/C CU 35kV 420 NLEPR 133% Thermoplastic CPE-TP MV-105 Halo-Flex™

Type MV-105 Three Conductor Copper, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoplastic Chlorinated Polyethylene (CPE-TP) Jacket, Halo-Flex™

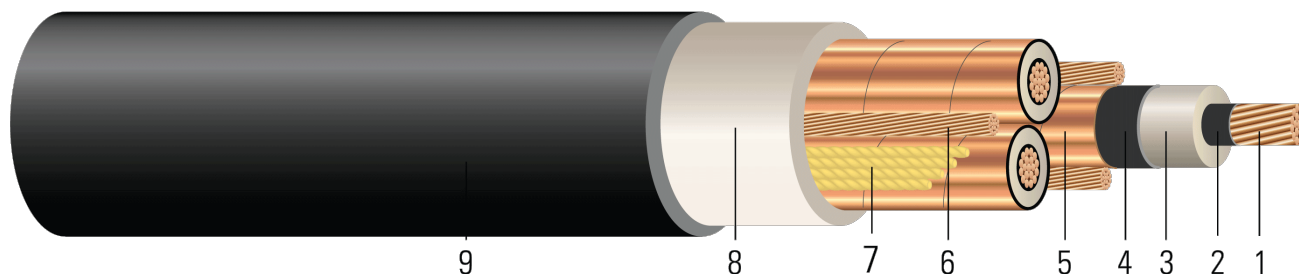


Image not to scale. See Table 1 for dimensions.

### 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:** 420 Mils 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:** Non-Hygroscopic flame retardant fillers
- Extruded Polymeric Layer:** Extruded Polymeric Barrier Layer
- Overall Jacket:** Thermoplastic Chlorinated Polyethylene (CPE-TP)

### APPLICATIONS AND FEATURES:

Southwire's 35KV 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. 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-Vertical-Tray Fire Propagation and Smoke Release Test (2 AWG and Larger)
- 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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Southwire

**CABLETECH  
SUPPORT™**

Services

- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- MSHA Approved
- MSHA flame test - P07-KA070018-1MSHA
- 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} HALO-FLEX{R} MV POWER CABLE MASTER-DESIGN {UL} 3/C XXX KCMIL CU 420 MILS NL-EPR 35KV 133% INS LEVEL 25%TS GW 3 X 6 AWG CU MV-105 FOR CT USE FT4/IEEE 1202 -40{D}C OIL RES I & II SUN RES FOR DIRECT BURIAL {NESC} -- {CSA} 3/C XXX KCMIL CU 10.67mm (420 mils) NL-EPR 35KV 133% INS LEVEL 25%TS MV68.10 SR TC-ER OIL RES FT4 -40{D}C LTGG -- ABS -- 07-KA220001-MSHA

### 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
669151	4/0	0.512	1.39	1.45	3 x 6	135	3.665	6871	5078	25.6
669160	350	0.641	1.527	1.587	3 x 6	135	3.961	8779	8400	27.7

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
4/0	0.051	0.064	0.053	0.03	0.387 + j0.236	0.065 + j0.046	4159	285/305	325/360
350	0.031	0.039	0.046	0.026	0.346 + j0.206	0.040 + j0.042	4552	375/400	435/490

\* 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 ohm-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)

