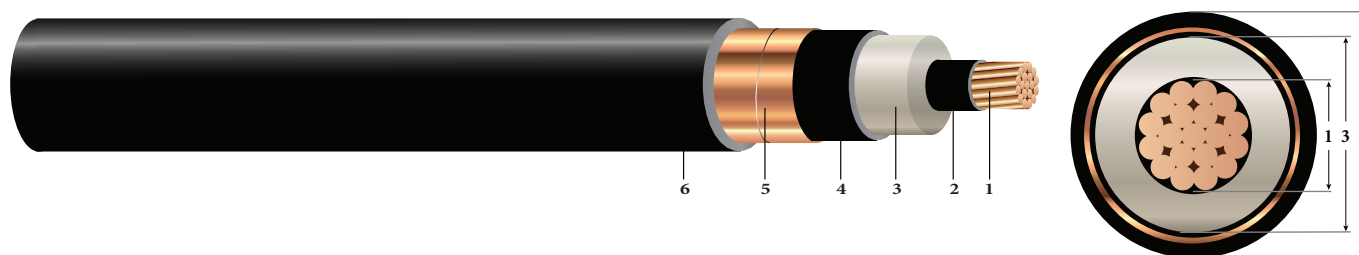


## 1/C CU 15KV 175 NL-EPR 100% TS CPE MV-105

Type MV-105 Single Conductor Copper, 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Chlorinated Polyethylene (CPE) Jacket, Dual Rated UL/CSA



Images 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:** 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level,
4. **Insulation Shield:** Stripable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Overall Jacket:** Chlorinated Polyethylene (CPE)

### APPLICATIONS AND FEATURES:

Southwire's 15KV 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. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure.

### SPECIFICATIONS:

- ASTM B3 Soft or annealed copper
- ASTM B8 Concentric-lay-standard copper
- UL 1072 - Medium Voltage Power Cables
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable & ICEA S-97-682 5-46 KV Utility
- UL 1685/FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 AWG and Larger)
- IEEE 1202 -Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 AWG and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- 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

### SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTNING BOLT] ## (UL/CSA) 1/C [#AWG or #kcmil] CU 175 MILS NL-EPR 15KV 100% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS]



**Southwire**<sup>®</sup>

Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | [www.southwire.com](http://www.southwire.com)

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SPEC 46303\_PSS DIVISION DATE: 11/06/2018 Rev:2.0.08C

**Table 1 – Weights & Measurements**

| Stock Code | Cond. Size<br>AWG | Diameter over |            |               | Jacket Thickness <sup>1</sup><br>mils | Approx. OD (6)<br>inches | Approx. Weight<br>lbs./MFT | Max Pull Tension<br>lbs. | Min Bending Radius<br>inches | Conduit Size*<br>inches |
|------------|-------------------|---------------|------------|---------------|---------------------------------------|--------------------------|----------------------------|--------------------------|------------------------------|-------------------------|
|            |                   | Cond. (1)     | Insul. (3) | Insul. Shield |                                       |                          |                            |                          |                              |                         |
|            |                   | inches        | inches     | inches        |                                       |                          |                            |                          |                              |                         |
| TBA        | 2                 | 0.283         | 0.670      | 0.730         | 65                                    | 0.880                    | 548                        | 531                      | 10.6                         | 2.5                     |
| TBA        | 1                 | 0.322         | 0.709      | 0.769         | 80                                    | 0.949                    | 648                        | 670                      | 11.4                         | 3                       |
| TBA        | 1/0               | 0.362         | 0.749      | 0.809         | 80                                    | 0.989                    | 739                        | 845                      | 11.9                         | 3                       |
| TBA        | 2/0               | 0.405         | 0.792      | 0.852         | 80                                    | 1.032                    | 850                        | 1065                     | 12.4                         | 3                       |
| TBA        | 3/0               | 0.456         | 0.843      | 0.903         | 80                                    | 1.083                    | 988                        | 1342                     | 13.0                         | 3                       |
| TBA        | 4/0               | 0.512         | 0.899      | 0.959         | 80                                    | 1.139                    | 1157                       | 1693                     | 13.7                         | 3.5                     |
| TBA        | 250               | 0.558         | 0.954      | 1.014         | 80                                    | 1.194                    | 1308                       | 2000                     | 14.3                         | 3.5                     |
| TBA        | 350               | 0.661         | 1.057      | 1.117         | 80                                    | 1.297                    | 1680                       | 2800                     | 15.6                         | 4                       |
| 586466     | 500               | 0.789         | 1.185      | 1.245         | 80                                    | 1.425                    | 2219                       | 4000                     | 17.1                         | 4                       |
| TBA        | 600               | 0.866         | 1.271      | 1.331         | 80                                    | 1.511                    | 2581                       | 4800                     | 18.1                         | 5                       |
| TBA        | 750               | 0.968         | 1.373      | 1.433         | 80                                    | 1.613                    | 3105                       | 6000                     | 19.4                         | 5                       |
| TBA        | 1000              | 1.117         | 1.522      | 1.582         | 110                                   | 1.822                    | 4072                       | 8000                     | 21.9                         | 5                       |

All dimensions are nominal and subject to normal manufacturing tolerances

\* Conduit size based on 3 phase 40% fill-factor without ground

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

**Table 2 – Electrical and Engineering Data**

| Stock Code | Cond. Size<br>AWG | Resistance |           | Reactance             |                       | Positive Sequence Impedance* | Zero Sequence Impedance* | Shield Short Circuit Current 6 Cycles<br>Amps | Allowable Ampacities 90°C/105°C |             |
|------------|-------------------|------------|-----------|-----------------------|-----------------------|------------------------------|--------------------------|---|---------------------------------|-------------|
|            |                   | DC @ 25°C  | AC @ 90°C | X <sub>C</sub> @ 60Hz | X <sub>L</sub> @ 60Hz |                              |                          |   | In Duct †                       | In Air ‡    |
|            |                   | Ω/MFT      | Ω/MFT     | MΩ*MFT                | Ω/MFT                 |                              |                          |   | Amps                            | Amps        |
| TBA        | 2                 | 0.162      | 0.203     | 0.047                 | 0.048                 | 0.203 + j0.048               | 0.574 + j0.456           | 2407  | 155 / 165                       | 195 / 215   |
| TBA        | 1                 | 0.129      | 0.161     | 0.043                 | 0.047                 | 0.162 + j0.046               | 0.533 + j0.436           | 2534  | 175 / 185                       | 225 / 250   |
| TBA        | 1/0               | 0.102      | 0.128     | 0.039                 | 0.045                 | 0.128 + j0.045               | 0.499 + j0.417           | 2664  | 200 / 215                       | 260 / 290   |
| TBA        | 2/0               | 0.081      | 0.101     | 0.036                 | 0.043                 | 0.102 + j0.043               | 0.471 + j0.397           | 2804  | 230 / 245                       | 300 / 335   |
| TBA        | 3/0               | 0.064      | 0.081     | 0.033                 | 0.042                 | 0.081 + j0.042               | 0.448 + j0.376           | 2970  | 260 / 275                       | 345 / 385   |
| TBA        | 4/0               | 0.051      | 0.064     | 0.030                 | 0.040                 | 0.065 + j0.040               | 0.429 + j0.354           | 3152  | 295 / 315                       | 400 / 445   |
| TBA        | 250               | 0.043      | 0.054     | 0.029                 | 0.039                 | 0.055 + j0.039               | 0.416 + j0.335           | 3331  | 325 / 345                       | 445 / 495   |
| TBA        | 350               | 0.031      | 0.039     | 0.025                 | 0.037                 | 0.040 + j0.037               | 0.392 + j0.302           | 3666  | 390 / 415                       | 550 / 610   |
| 586466     | 500               | 0.022      | 0.028     | 0.022                 | 0.035                 | 0.029 + j0.035               | 0.370 + j0.267           | 4083  | 465 / 500                       | 685 / 765   |
| TBA        | 600               | 0.018      | 0.024     | 0.021                 | 0.034                 | 0.024 + j0.034               | 0.357 + j0.246           | 4363  | 505 / 544                       | 765 / 855   |
| TBA        | 750               | 0.014      | 0.019     | 0.019                 | 0.033                 | 0.020 + j0.033               | 0.343 + j0.225           | 4695  | 565 / 610                       | 885 / 990   |
| TBA        | 1000              | 0.011      | 0.015     | 0.017                 | 0.033                 | 0.016 + j0.033               | 0.323 + j0.198           | 5179  | 640 / 690                       | 1060 / 1185 |

\* Calculations are based on three cables triplexed / 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)(77) 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)(69) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

