

# TYPE PHOTOVOLTAIC / USE-2 / RHH / RHW-2 - COPPER CONDUCTOR - 600V/1KV/2KV

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories Standards UL-44, UL-854, UL-1581, UL 2556, UL-4703; UL 1685 (70,000 Btu/hr) Flame Test (1/0 AWG and larger); NEMA WC70/ICEA S-95-658; NFPA 70 (NEC®) Article 690; ARRA 2009 Section 1605 "Buy American" Compliant; RoHS Compliant; MasterSpec Division 26 Sections 260519, 260523; VW-1 optional; UL Listing #E-326525



## CONSTRUCTION

### Conductors

Stranded conductors, uncoated copper per ASTM-B8 and ASTM-B787

### Insulation

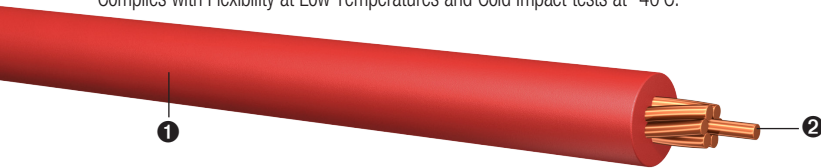
Cross-linked polyethylene (XLPE) insulation per UL-44, UL-854, UL-4703

## APPLICATIONS

Type Photovoltaic building wire is suitable for outdoor rooftop applications without conduit or raceways and for use in raceways installed underground in wet locations where condensation and moisture accumulations within the raceway do not exceed 90°C. Photovoltaic wire is rated to 90°C in dry locations. When installed in accordance with NEC Section 690.31(C)(2), PV Source and PV Output, single-conductor cable of all sizes, can be installed in outdoor Cable Trays, where applicable. Type USE-2 is permitted for 600-volt applications only. Type RHH/RHW-2 is permitted for applications up to 1000 volts..

## FEATURES

Available in 600V and 1000V/2000V. Insulation compound is rated sunlight-resistant in all sizes and colors. Photovoltaic conductors of 1/0 and larger are rated for CT use. May be used for direct burial per UL-854 and UL-4703. Complies with Flexibility at Low Temperatures and Cold Impact tests at -40°C. installed in accordance with National Electrical Code (NEC) 690.31(C)(2). Complies with Flexibility at Low Temperatures and Cold Impact tests at -40°C.



1 XLPE Insulation

2 Stranded Copper Conductor

| Size<br>(AWG or KCMIL) | No.of<br>Strands | Insulation Thickness<br>XLPE (in) |       | Outside<br>Diameter |       | Allowable<br>Ampacity<br>(Amps) <sup>1</sup> | Approximate<br>Net Weight<br>(lbs/1000 ft) | Approximate Area<br>(in <sup>2</sup> ) | Standard Packaging<br>(ft)   |
|------------------------|------------------|-----------------------------------|-------|---------------------|-------|----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------|
|                        |                  |                                   |       |                     |       |                                              |                                            |                                        |                              |
|                        | 1000V<br>2000V   | 1000V/2000V                       |       | 1000V/2000V         |       | 1000V<br>2000V                               | 1000V<br>2000V                             | 1000V/2000V                            |                              |
|                        |                  | (mm)                              | (in)  | (mm)                | (in)  |                                              |                                            |                                        |                              |
| 14                     | 19               | 1.91                              | 0.075 | 5.61                | 0.221 | 25                                           | 28                                         | 0.0384                                 | 500' 1000' 2500' Reels       |
| 12                     | 19               | 1.91                              | 0.075 | 6.10                | 0.240 | 30                                           | 38                                         | 0.0445                                 | 500' 1000' 2500' Reels       |
| 10                     | 19               | 1.91                              | 0.075 | 6.68                | 0.263 | 40                                           | 49                                         | 0.0531                                 | 500' 2500' Reels             |
| 8                      | 7                | 2.16                              | 0.085 | 8.03                | 0.316 | 55                                           | 78                                         | 0.0769                                 | 500' 1000' 2500' 5000' Reels |
| 6                      | 7                | 2.16                              | 0.085 | 8.99                | 0.354 | 75                                           | 113                                        | 0.0957                                 | 500' 1000' 2500' 5000' Reels |
| 4                      | 7                | 2.16                              | 0.085 | 10.21               | 0.402 | 95                                           | 166                                        | 0.1232                                 | 500' 1000' 2500' 5000' Reels |
| 3                      | 7                | 2.16                              | 0.085 | 10.92               | 0.430 | 115                                          | 203                                        | 0.1412                                 | 500' 1000' 2500' 5000' Reels |
| 2                      | 7                | 2.16                              | 0.085 | 11.73               | 0.462 | 130                                          | 249                                        | 0.1633                                 | 500' 1000' 2500' 5000' Reels |
| 1                      | 19               | 2.67                              | 0.105 | 13.49               | 0.531 | 145                                          | 320                                        | 0.2215                                 | 500' 1000' 2500' 5000' Reels |
| 1/0                    | 19               | 2.67                              | 0.105 | 14.48               | 0.570 | 170                                          | 389                                        | 0.2552                                 | 500' 1000' 2500' 5000' Reels |
| 2/0                    | 19               | 2.67                              | 0.105 | 15.60               | 0.614 | 195                                          | 484                                        | 0.2961                                 | 500' 1000' 2500' 5000' Reels |
| 3/0                    | 19               | 2.67                              | 0.105 | 16.87               | 0.664 | 225                                          | 599                                        | 0.3463                                 | 500' 1000' 2500' 5000' Reels |
| 4/0                    | 19               | 2.67                              | 0.105 | 18.29               | 0.720 | 260                                          | 742                                        | 0.4072                                 | 500' 1000' 2500' 5000' Reels |
| 250                    | 37               | 3.05                              | 0.120 | 19.86               | 0.782 | 290                                          | 884                                        | 0.4803                                 | 500' 1000' 2500' 4000' Reels |
| 300                    | 37               | 3.05                              | 0.120 | 21.18               | 0.834 | 320                                          | 1047                                       | 0.5463                                 | 500' 1000' 3500' Reels       |
| 350                    | 37               | 3.05                              | 0.120 | 22.38               | 0.881 | 350                                          | 1210                                       | 0.6096                                 | 500' 1000' 3000' Reels       |
| 400                    | 37               | 3.05                              | 0.120 | 23.50               | 0.925 | 380                                          | 1371                                       | 0.6720                                 | 500' 1000' 3000' Reels       |
| 500                    | 37               | 3.05                              | 0.120 | 25.55               | 1.006 | 430                                          | 1694                                       | 0.7949                                 | 500' 1000' 2500' Reels       |
| 600                    | 61               | 3.43                              | 0.135 | 29.54               | 1.163 | 475                                          | 2073                                       | 1.0623                                 | 500' 1000' 2000' Reels       |
| 750                    | 61               | 3.43                              | 0.135 | 32.21               | 1.268 | 535                                          | 2525                                       | 1.2628                                 | 500' 1000' 1500' Reels       |
| 1000                   | 61               | 3.43                              | 0.135 | 36.12               | 1.422 | 615                                          | 3322                                       | 1.5881                                 | 500' 1000' Reels             |
| 600V                   |                  |                                   |       |                     |       |                                              |                                            |                                        |                              |
| 10                     | 19               | 1.52                              | 0.060 | 5.92                | 0.233 | 40                                           | 47                                         | 0.0437                                 | 500' 2500' Reels             |

<sup>1</sup> Ampacity of conductors are based on NFPA 70 (NEC) Table 310.15(B)(16) at 90°C. See 110.14(C), 240.4(D) and 310.15(B) for other limitations where applicable.

When the neutral is considered current-carrying conductor, the ampacity of four or more current carrying conductors shall be reduced by the as specified in NEC Table 310.15(B)(3)(a).

The above data is approximate and subject to normal manufacturing tolerances.

### 600V PRINT LEGEND:

**14 AWG THROUGH 1 AWG:** ENCORE WIRE CORP (SIZE) TYPE PHOTOVOLTAIC WIRE 600V OR USE-2 600V OR RHH OR RHW OR RHW-2 600V/1000V GR2 DIR-BUR 90C WET OR DRY SUN-RES -40C XLPE (UL) DATE TIME OPERATOR QC MACHINE

**1/0 AWG THROUGH 1000 KCMIL:** ENCORE WIRE CORP (SIZE) TYPE PHOTOVOLTAIC WIRE 600V OR USE-2 600V OR RHH OR RHW OR RHW-2 600V/1000V GR2 DIR-BUR 90C WET OR DRY FOR CT USE SUN-RES -40C XLPE (UL) DATE TIME OPERATOR QC MACHINE

### 1KV/2KV PRINT LEGEND:

**14 AWG THROUGH 1 AWG:** ENCORE WIRE CORP (SIZE) TYPE PHOTOVOLTAIC WIRE 2000V OR USE-2 600V OR RHH OR RHW OR RHW-2 600V/1000V GR2 DIR-BUR 90C WET OR DRY SUN-RES -40C XLPE (UL) DATE TIME OPERATOR QC MACHINE

**1/0 AWG THROUGH 1000 KCMIL:** ENCORE WIRE CORP (SIZE) TYPE PHOTOVOLTAIC WIRE 2000V OR USE-2 600V OR RHH OR RHW OR RHW-2 600V/1000V GR2 DIR-BUR 90C WET OR DRY FOR CT USE SUN-RES -40C XLPE (UL) DATE TIME OPERATOR QC MACHINE

### Standard Conductor Colors\*

Black, White, Red, Yellow, Green  
Brown\*\*, Orange\*\*, Gray\*\*

\*Not available in striping  
\*\*Minimum runs on request.  
Contact local Sales Rep.



800.962.9473

www.encorewire.com