Photovoltaic Cables or Solar Cables, Type PV Cable UL 4703 Listed

UL Type PV (Photovoltaic) cables are used for inter-connection of solar panels as well as to the energy connection and energy conversion equipment. Before the 2010 change to UL 4703, Photovoltaic wire was generally a single conductor likely a Type UF (Underground Feeder) or Type USE-2 (Underground Service Entrance wire rated for 90℃ wet applications). However, with the growth of large scale mega-watt solar farms whose arrays are producing high voltage and amperage output to the combiner box and beyond, cables with copper or aluminum conductors up to 1000 KCML are now covered under the standard.

The new voltage ratings permitted in UL Subject 4703 can now accommodate voltages greater than 1,000 volts. By connecting the direct-current generating panels together in series, the voltage in an entire array can be increased to fairly high levels, which accounts for the higher voltages.

Priority Wire & Cable offers UL4703 Type PV cables that features 8000 series stranded aluminum alloy conductors in sizes 8AWG to 1000KCMIL with XLP insulation which is flame retardant, sunlight and moisture resistant, direct burial rated, and meets the following industry standards:

UL4703 Listed, PV Rated
UL44 Listed RHH/RHW-2
UL854 USE-2
Flame Test: VW-1
CSA Listed RPVU90 under CSA C22.2 No. 271
ASTM D-800
ASTM D-836
ASTM D-901
National Electric Code (NEC) - NFPA 70
Canadian Electric Code (CEC)

The cables are rated 600V and 1KV/2KV and are available in black, white and green; other colors available upon request.

The 8000 series aluminum alloy conductor is specifically designed to operate safely in photovoltaic applications and has been used in a wide variety of building wire products such as SEU, SER, THHN and XHHW for decades. Aluminum conductors are generally less sensitive to variations in commodity prices, which can sometimes results in significant savings on a projects total cost.

Some common nomenclature for the cables within the systems include:

String Cable: generally the cable that inter-connects the panels and runs to the combiner boxes. Usually the smaller gauges of wire such as 10, 8 and maybe 6.

Feeder Cable: generally the cable from the combiner box to the conversion box or convertor. Usually the larger cables from 8 AWG to 1000 KCML.

Data Cables: various types which might include tray cable, category 5, 5e or 6 or fiber optic cable for carrying signals throughout the system.

Medium Voltage: cables running from the convertor to the grid in voltages ranging from 15KV to 35KV with a range of neutrals depending on local codes or utility standards.

For an explanation of a typical wiring system within a commercial solar farm see a video at https://www.youtube.com/watch?v=aLQvDhhjHI0

Priority Wire & Cable offers its PV Cable in standard put-ups, long-length bulk reels or cut to length and can also parallel or triplex the wire specifically for jobs. Pulling heads can be installed so it is easy for the contractor to get to work as soon as the cable arrives. With an inventory of several million feet of cable in a variety of sizes and colors, Priority is your go to supplier for quick turn-around or long term jobs and is available from your favorite Electrical or Wire and Cable distributor.

**Standards change over time so always consult the NEC for current or applicable standards.*