



# Doncaster Cables

The Electricians Cable of Choice



Specially developed to meet the requirements of DC installations on photovoltaic systems



<b>Conductor:</b>	Tinned Annealed Copper Class 5 Flexible
<b>Insulation:</b>	Double insulated cross-linked and fulfilling the requirements of BS EN 50618 Annex B.
<b>Bedding:</b>	CarbonTek®
<b>Steel Wire Armour:</b>	Galvanised steel wire armour (where applicable)
<b>Sheathing:</b>	SolarTek®

This cable is designed to meet the requirements of the DC interconnections between the solar panels and the other components of the photovoltaic system, such as the isolators and invertors.

PV-Ultra provides excellent mechanical properties, can be installed both internally and externally, and has been designed with high quality materials to achieve an anticipated lifespan of circa 25 years.

The cables are designed to operate at a normal maximum conductor temperature of 90°C, but for a maximum of 20,000 hours a max. conductor temperature of 120°C at a max. ambient temperature of 90°C is permitted.

#### STANDARD CORE COLOURS



The British Cable Company You Can Trust



Sales Office: Millfield Industrial Estate, Arksey Lane, Bentley, Doncaster, South Yorkshire, DN5 0SJ  
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PV-Ultra has red and white core colours to comply with the latest requirements of BS7671 with regards to two-wire unearthed DC power circuits (BS7671 Table 51).

The double insulation of PV-Ultra ensures that the electrical equipment up to the DC connection of the PV inverter is Class II or equivalent insulation (as specified in BS7671 Clause 712.412.101).

PV Ultra is a multicore DC solution that previously was solved by a multicore armoured cable. These multicore armoured cables are no longer recommended for use on the DC side of the installation. PV Ultra can now serve as a direct replacement allowing for a compliant multicore solution.

The double insulated conductors are particularly suitable for use at the direct current (d.c.) side of the photovoltaic system, with a nominal d.c. voltage of 1.5kV between conductor and between conductor and earth. Due to the double insulation these cables are suitable to be used with Class II equipment (meeting the requirement of BS7671 Clause 712.412.101 which states that the electrical equipment up to the DC connection of the PV inverter shall be Class II or equivalent insulation)

The double insulated conductors are enclosed in a CarbonTek® bedding, to give even more electrical protection against the steel wire armour (where applicable), with a final outer sheathing of SolarTek® PVC being applied to all variants of the cable (steel wire armoured or not).

PV-Ultra is aesthetically similar to a mains power cable, as opposed to being similar in appearance to a coaxial cable. Which reduces the probability of homeowners/electricians/DIYers accidentally cutting a live d.c. cable.

PV-Ultra also includes a yellow warning print that further highlights the hazard that these cables are live during daylight hours.





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## Comments for the installer

PV-Ultra provides a quicker, easier and neater install and can be installed using normal cable accessories, cleats and/or clips and gives additional protection without the need for conduit installations. The cable can also remove the need for d.c. junction boxes in certain installations.

We have incorporated a built-in high-tensile rip cord to aid the stripping of the inner bedding. This removes the risk of causing damage to the inner cores when using traditional stripping methods such as cable knives, utility knives, or other stripping tools. This construction of the cable, and the inclusion of this high-tensile rip cord, mean that exposing the cable conductors is an easy process regardless of what length you need to strip back.

Standard MC4 connectors can be terminated to the cores meaning that the termination and connection to panels is the same as when using traditional single core PV cables.

PV-Ultra allows for direct connections from the solar panels to the DC isolator/invertor every time, without the need to assess the route for whether conduits will be required, and without the need for junction boxes.

The pre-coloured cores allow the installer to easily identify the polarity saving time and reducing the risk of polarity faults. To ensure this benefit is maintained in the four core PV-Ultra's an identifying mark is applied to one of the white cores and one of the red cores; this allows them to be easily distinguished.



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Innovating to make  
Electricians lives easier.



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Making manufacturing  
decisions for electricians.

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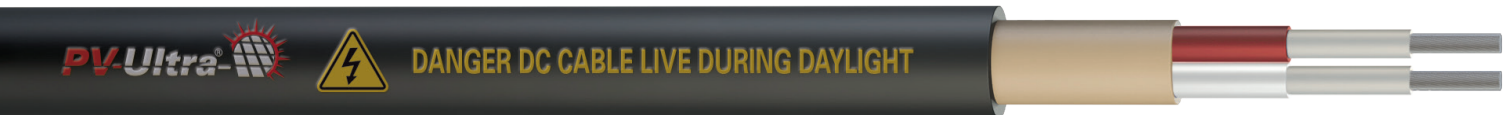


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## Dimensional Details:

Product Code	Number and Nominal CSA of conductors	Core Colours	Maximum conductor resistance (Ω/km)	Nominal Diameter of Bedding	Nominal Galvanised Steel Wire Armour wire diameter (mm)	Approximate overall diameter (mm)	Approximate weight (kg/km)	Maximum Current rating (clipped)
PV-ULTRA2C4.0	2 x 4.0mm <sup>2</sup>	Red, White	5.09	12.6	Not applicable	15.0	335	52A
PV-ULTRA2C6.0	2 x 6.0mm <sup>2</sup>	Red, White	3.39	14.0		16.5	405	67A
PV-ULTRA2C710	2 x 10.0mm <sup>2</sup>	Red, White	1.95	17.0		19.4	655	93A
PV-ULTRA4C4.0	4 x 4.0mm <sup>2</sup>	Red, White, Red, White	5.09	15.3		17.7	585	44A
PV-ULTRA4C6.0	4 x 6.0mm <sup>2</sup>	Red, White, Red, White	3.39	17.0		19.4	715	57A
PV-ULTRA4C710	4 x 10.0mm <sup>2</sup>	Red, White, Red, White	1.95	20.3		22.9	915	93A
Steel Wire Armoured								
PV-ULTRA2C4.0SWA	2 x 4.0mm <sup>2</sup>	Red, White	5.09	12.6	0.9	16.8	550	52A
PV-ULTRA2C6.0SWA	2 x 6.0mm <sup>2</sup>	Red, White	3.39	14.0	1.25	19.0	730	67A
PV-ULTRA2C710SWA	2 x 10.0mm <sup>2</sup>	Red, White	1.95	17.0	1.25	21.8	1030	93A
PV-ULTRA4C4.0SWA	4 x 4.0mm <sup>2</sup>	Red, White, Red, White	5.09	15.3	1.25	20.1	815	44A
PV-ULTRA4C6.0SWA	4 x 6.0mm <sup>2</sup>	Red, White, Red, White	3.39	17.0	1.25	22.0	990	57A
PV-ULTRA4C710SWA	4 x 10.0mm <sup>2</sup>	Red, White, Red, White	1.95	20.3	1.25	25.3	1500	93A

Weight and dimensional information is provided as an approximate guide only.

Current carrying capacities based on ambient temperature of 60°C, for temperatures above 60°C temperature derating factors should be applied as follows 70°C=0.91, 80°C=0.82, 90°C=0.71. Refer to BS7671 for further guidance.

## Features and Benefits

- Easier to handle
- Saves installation costs
- Saves installation time
- Easy polarity identification
- Easier to route along/through buildings or walls
- Reduces the risk of accidental damage
- Gives a cleaner, neater installation
- Safer as it removes the need for junction boxes
- Safer as it looks like a power cable
- Pre-marked 'LIVE DC' warning message to improve safety

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