SIMPLE STRING SIZING
FOR THE T80HV CHARGE CONTROLLER & 48V BATTERIES

The proper number of PV modules for optimum operation of the T80HV Charge Controller is an easy exercise. The paper clarifies the series and parallel connection options for PV modules with 60, 72 and 96 cells each. 0 degrees and 70 degrees C are used as the min and max temperatures to determine the highest Voc and lowest Vmp. See our full White Paper for all the backup details.

Simply stated, for 48 volt batteries, the T80HV input range is 74.2 to 180 volts.

**PV STRING COMBINATION OPTIONS:**

**60 CELL MODULES:**
The tables to the right show the total PV array power for the possible combinations of series and parallel modules at 245 and 280 watts each. These sizes represent the ends of the range of the most popular sizes in the 60 cell class.

The Apollo Solar Combiner Boxes can be arranged to take up to 8 strings and connect them in parallel. The T80HV will harvest up to 5000 watts, but it can handle over 5500 watts without any problem. When the combination of strings yields more power than that, the cell is in gray.

**72 CELL MODULES:**
These tables show the total PV array power for the possible number of parallel modules at 280 and 300 watts.

Note that the T80HV may be the only MPPT Charge Controller which can handle these very popular 72 cell PV modules.

**96 CELL MODULES:**
This table shows the total PV array power for the possible number of parallel modules at 320 watts average power with 2 module series strings. Note that since just 2 of these higher voltage modules are used in each string, more strings will be required to achieve the maximum 5000 watts of input power for the T80HV. Note that multiple parallel strings are an advantage for reducing shading problems which cannot be avoided in equatorial region with cell towers on a small site.