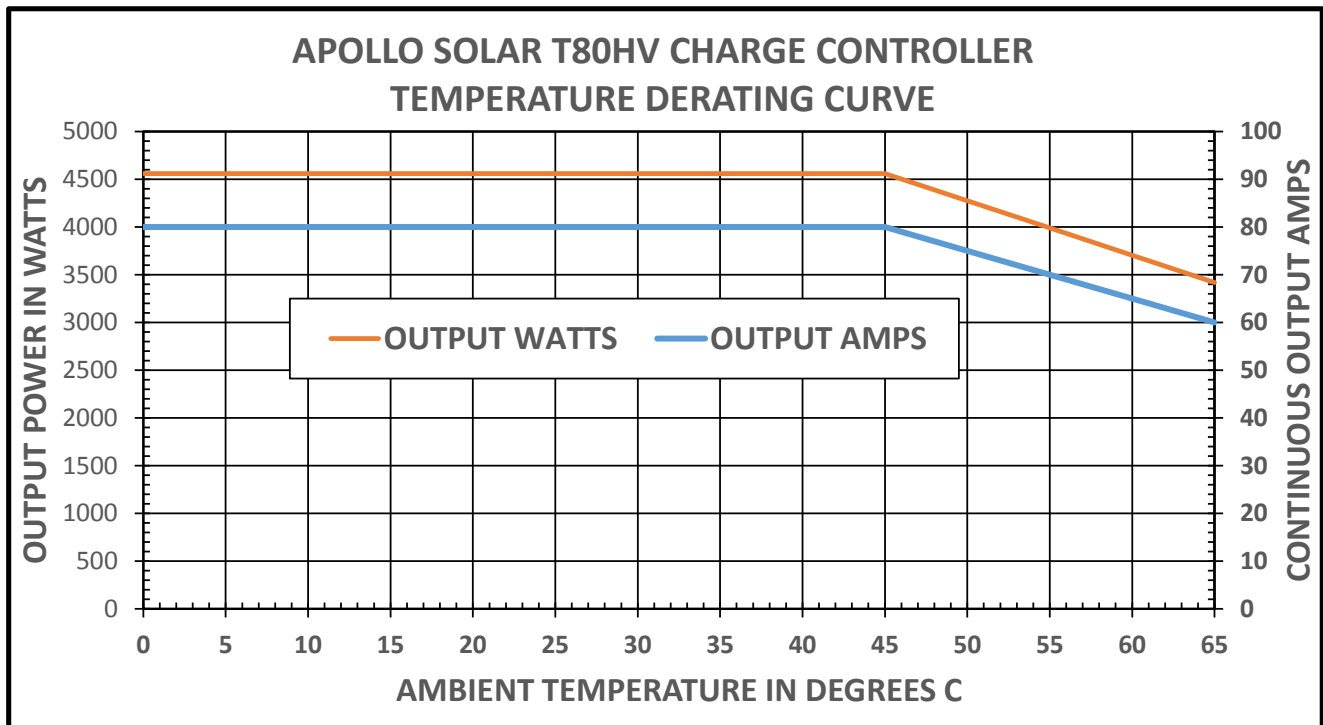


USING THE T80HV CHARGE CONTROLLER AT HIGH AMBIENT TEMPERATURE

March-2016 Rev2

The question has been asked: What is the performance of the T80HV at 60°C ambient?
The short answer is the T80HV will produce 65Amps output at 60°C. See the derating curve below. The complete answer is complex and is the subject of this paper.



COMPLETE ANSWER:

The T80HV is a DC to DC converter reducing the PV input voltage to battery charging voltages. As the voltage is reduced, the current is increased by the same factor. The T80HV is specified and tested to deliver up to 80Amps continuously of output at whatever voltage is required by the battery when there is enough power from the PV array.

The FETs on the heat sink are protected from damage due to overheating. The temperature of the heatsink is measured near the FETs and the output current is ramped down if the temperature is getting to high. When the temperature drops below a specified safe level, the current is ramped back up. The T80HV is not directly concerned about the actual ambient temperature or the heat it is generating, but it is protected from damage which could be caused by either source of heat. The end result is that at 60°C ambient temperature, the maximum continuous output will be 65 Amps.