





# Maximizing Solar Panel Charging

Don't assume a solar panel is receiving voltage, and working properly. Solar panels can show sufficient voltage(19-20V), but not produce enough amperage to charge the battery.

**NOTE:** **AMPERAGE** charges batteries, not **VOLTAGE**

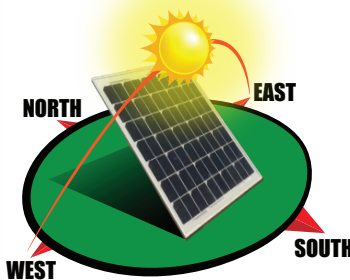
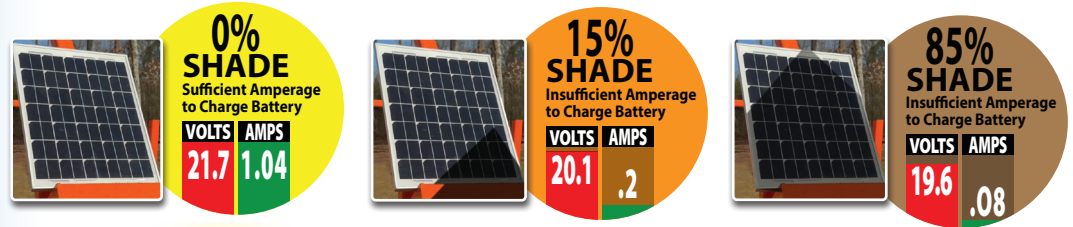
   	
Model Number	DS-A1-20
Rated Maximum Power (Pmax)	20W
Current at Pmax (Imp)	1.11A
Voltage at Pmax (Vmp)	18.0V
Short-Circuit Current (Isc)	1.22A
Open-Circuit Voltage (Voc)	22.3V
Power Tolerance	±5%

Check the decal on the back of the solar panel and locate the **SHORT-CIRCUIT CURRENT (AMPS)**. This is the reference for the maximum amps the solar panel can produce.

← **Our 20 Watt solar panels can produce up to 1.22 amps**

K&K Systems, Inc. solar panels are sized for our product's systems and are to be used in environments free from the shade of trees and buildings.

**NOTE:** Larger Solar Panels maybe required in shaded environments.



**NOTE:** Solar panels must **FACE SOUTH** and be **TILTED** at a **45° ANGLE** to achieve maximum efficiency.

## Testing a Solar Panels' Short-Circuit Amps using a Fluke 117 Multimeter

1. Attach the red lead to the lead socket for amps.
2. Move the indicator dial to Amps (DC)
3. Unplug the solar leads from the charge controller and hook directly to the multimeter.

**Note:** If 0.0 amps are shown, check the fuse and/or replace it and retest the solar panel.

