

# PHOTOVOLTAIC CELLS

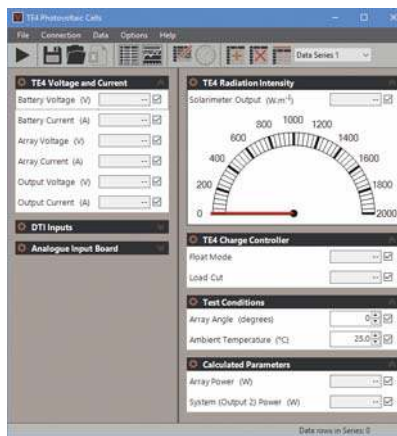
**VDAS® TE4**

Illustrates how effective photovoltaic cells are in capturing solar energy.



- Demonstrates the performance of a high-efficiency photovoltaic cell array and battery storage system
- Includes solarimeter, charge controller and control module with digital displays and DC outputs
- Supplied with both high and low-rated batteries to allow students to investigate charge and discharge cycle of the system in a typical laboratory session as well as longer cycles
- Includes three different types of electrical load

The TE4 uses a commercially available solar panel made from high efficiency cells. The solar panel is on a wheeled, lightweight frame that allows adjustment of the panel angle, relative to the sun. A solarimeter on the frame measures incident radiation. The panel recharges a choice of two batteries through a charge controller. The charge controller recharges the battery at the correct rate of charge without damage to the battery. The frame holds a high-performance, deep-cycling battery in a storage box. The equipment also includes a second lower-rated battery. This allows students to examine the charge and discharge cycle of the system in a typical laboratory session.



SCREENSHOT OF THE OPTIONAL VDAS® SOFTWARE

## LEARNING OUTCOMES:

- Performance of the solar panel
- Demonstration of float mode
- Demonstration of load cut

## RECOMMENDED ANCILLARIES:

- Versatile Data Acquisition System – Bench-mounted version (VDAS-B) 299

## ALTERNATIVE PRODUCTS:

- Focusing Solar Energy Collector (TE38) 296
- Flat Plate Solar Thermal Energy Collector (TE39) 297

