

# Solar charger

## Installation instructions

### Important installation notes:

- Since the solar cell battery charger is intended to keep the meter running unattended for extended periods of time, it is important that everything works correctly. See the checklist below.
- The solar cell rests in a bottom slot and can move to allow the removal and installation of the plastic bottle. Make sure that the rounded edges of the solar cell go at the top to allow a proper fit in the rounded bottle edges.

### Check the solar cell operation

1. Remove the batteries from the solar cell charger.
2. In a very sunny environment with the solar panel facing the Sun, connect the USB cable to the meter and observe the red LED on the meter come on for three seconds.

### Check the battery operation

1. Install the batteries (four AA NiMH) into the solar charger by unscrewing the clear plastic bottle from the white cap.
2. Cover the solar cell from receiving light.
3. Connect the USB cable to the meter and observe the red LED on the meter comes on for three seconds.

### Confirm data-logging triggering

1. Connect the meter to a computer by a USB cable and start UDM to check the datalogging settings.
2. Ensure that an appropriate trigger is set.
3. Ensure that the threshold is set to zero (0) if you want all brightness readings recorded. Or, set the threshold to a value of about ten (10) to prevent recordings during daylight hours.
4. Do not wait too long between unplugging the meter from the computer and connecting to the solar charger since the meter contains a capacitor to keep the real time clock running for a few hours while unplugged.

### Maintenance

- Regularly check that the container is not cracked or damaged.
- Check that the circuit is working by observing the red LED on the SQM-LU-DL meter to make sure it flashes once per minute for 3 seconds.
- We recommend that the NiMH batteries be replaced about once per year. You can check the voltage in the UDM plotter tool after downloading the data. The meter will continue working all the way down to 3.3V, but the batteries should be replaced before that (about 4.5V minimum).