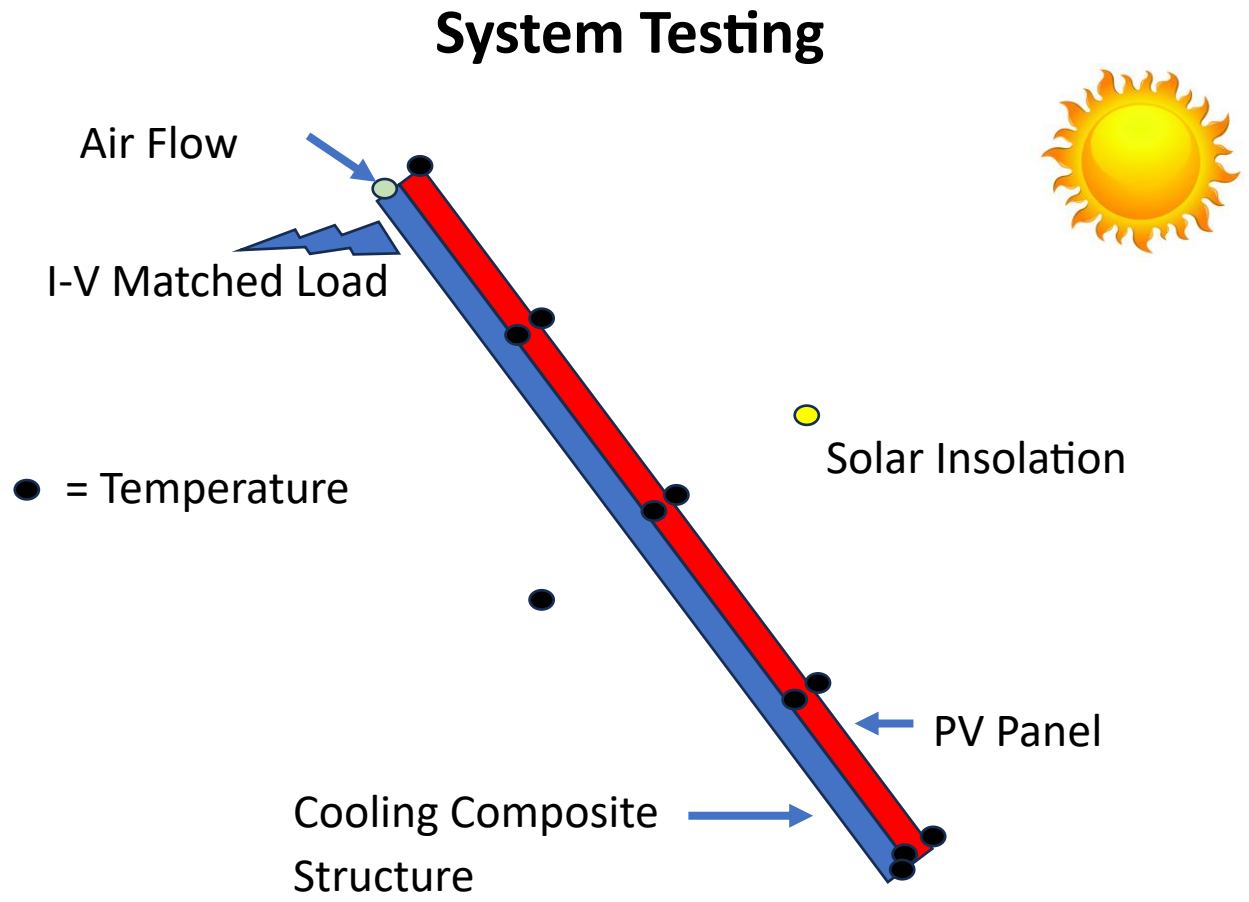
Technical Assistance Request

Testing

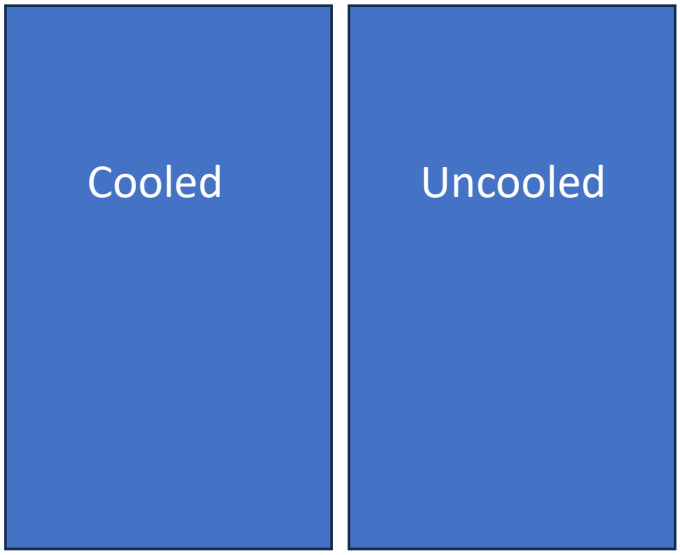
Sophisticated data acquisition will be important in evaluating the effectiveness of the concepts incorporated into the fabricated PV panel cooling system. Enersla LLC would like to engage a national laboratory, company or educational institution that would have the necessary equipment and physical space to test the prototype(s) that will be constructed.

The primary request is to test the first prototype(s) in an indoor facility that would have artificial solar insolation capabilities up to 1000 W/m². For later stage prototype(s), outdoor testing would be the chosen option. Temperature and air flow speed data acquisition hardware and software will be required, along with V-I monitoring under matched load conditions during the testing period. At least two panel angles should be tested to determine the magnitude of outputs due to buoyancy lift differential. Below is a rough drawing of the presently perceived testing. Test times can be relatively short. Limited performance data under varying solar insolation and ambient temperature conditions is the main goal.



So as to have data on the cooled PV system relative to a non-cooled PV panel, we request that the above test layout also be performed on a matched PV panel that does not have the cooling system.

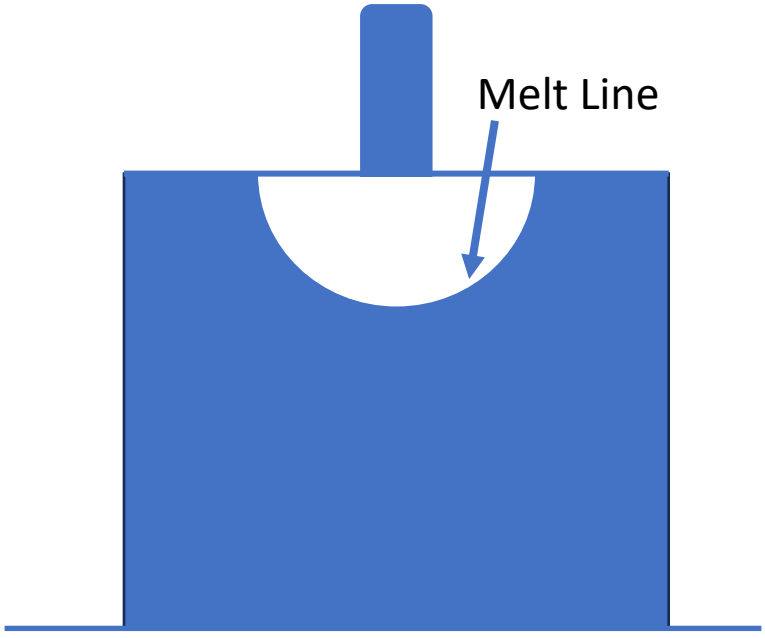
Simultaneous Testing of Cooled vs Uncooled PV Panels



The timing of the execution of the American-Made Solar Prize Round 7 may not allow cold, snowy weather testing in the Set! phase. In the Go! phase, along with testing of the second round of prototype(s), the snow/ice clearing concept will be integrated into the system for testing. After award of the Ready! phase, the snow/ice clearing concept will be fabricated and tested internally for viability but may not be integrated into the complete system until Go! for third party laboratory testing and validation.

To accomplish the testing of the snow/ice clearing concept, we will want to monitor ambient temperature, solar insolation and snow/ice clearing percentage. Electrical output should also be collected. Much of the testing is similar to the testing of the cooled system. Gathering percentage of snow/ice clearing will require a camera arrangement with software that will output percentage of clearing from the images captured by the camera.

Measuring Melt Line Camera Based



Modeling

Technical assistance in CFD modeling is requested to supplant or supplement inhouse modeling. Several iterations are contemplated.