**Final Prototype Test Plan**

To: Professor Pisano

From: Team 15

Team: Team 15

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Subject: Final Prototype Testing Plan

1. **Monitoring Circuit Data + Webserver Pairing**
   1. **Required Materials**
      * **Hardware**
        + **Light intensity sensor**
        + **1 pico w microcontroller**
        + **Laptop to access webserver**
        + **USB to micro USB cord**
        + **Battery**
      * **Software**
        + **Backend express.js webserver**
        + **MongoDB database**
        + **React application**
        + **JavaScript functions**
        + **Micropython**
   2. **Pre-testing Setup Procedure**
      * **Connect system to power source**
      * **Open web server on laptop**
   3. **Testing Procedure**
      * **Live feed from our web server will show the readings of our BH175 light sensors.**
      * **A palm will be used to demonstrate our light sensor’s capabilities**
   4. **Measurable Criteria**
      * **Ability of webserver to display data collected in real-time**
      * **Wireless connection between control circuit and webserver**
      * **Professional display of data on webserver (Single graph will display solar irradiation)**
2. **Reflector Control System**
   1. **Required Materials**
      * **Reflector frame**
      * **Face plates, sliders, and connection bars**
      * **Stepper motor with ball screw**
      * **Reflector panels**
   2. **Set up**
      * **Reflector frame is fully assembled with sliding elements properly attached/ reflector panels have been attached at the rotating corner pieces of the face plates and lower bar sliders. The ball screw and stepper motor are attached to one side of the frame to move the reflectors up and down**
   3. **Pre-testing Setup Procedure**
      * **The team checks to ensure that all parts of the system are properly connected and that sliding parts move as intended/without resistance.**
   4. **Testing Procedure**
      * **Demonstrate the reflector panel’s range of motion**
        + **We will initialize the program and use the manual control buttons to demonstrate how to reset the reflector position when necessary**
        + **Then the system will run its demonstration program, which moves the reflectors more frequently than they would during the course of a day to better show system functionality in a short period of time**
   5. **Measurable Criteria**
      * **Reflectors moving smoothly in synch**
      * **the panels direct light towards the solar panels**