

**IME 156 Lab - Final Prism Project Evaluation**

Name: \_\_\_\_\_

These are the requirements and rubric for final evaluation of the Prism LED project. The points values for each sub-category are listed. 100 points are possible. Project is worth 25% of course grade. (See photo examples pg. 2)

**1. Chassis Construction and Identification (5 points)**

Student name & quarter/year shall be engraved on top and bottom chassis components (**2 points each**). Chassis pieces must fit together reasonably (**1 point**). Some customization (hammering marks, flattening, refolding, etc.) to achieve fit is acceptable.

Points: \_\_\_\_\_ of 5

**2. Chassis De-burred (5 points)**

All Edges and corners of chassis shall be de-burred to render smooth - not sharp.

Points: \_\_\_\_\_ of 5

**3. Vibration Resistance (15 points)**

Lock washers must be installed under hex nuts in 13 places and tool tightened such that nuts cannot be loosened by hand. There are 13 lock washers: six LED attachments to top chassis, four PCB corners and three regulator heat sinks. Potentiometer tab located in small hole to prevent spinning and power jack and potentiometer nuts must be tight

Points: \_\_\_\_\_ of 15

**4. LED and Power Wiring Harnesses (5 points)**

LED wiring assemblies must be bundled and tied together with tape or other means to help manage neatly. Also, power/potentiometer wire assembly should be organized similarly. (See example pg. 2)

Points: \_\_\_\_\_ of 5

**5. Crimped Wire Interconnections (10 points)**

Crimped wire terminations must be made in accordance with written guidelines; insulation jacket must be enclosed in rear tabs and bare wire strands in front tabs. Crimps must be locked in header tabs. Intermittent electrical operation due to poorly crimped wiring is unacceptable.

Points: \_\_\_\_\_ of 10

**6. Chassis-Mounting & Component Soldering (20 Points)**

Chassis-mounted components (switch, potentiometer and power jack) must be secured with nuts tightened so fingers cannot loosen. Must be soldered by feeding wire through lughole eyelets or wrapping wire around terminals and soldering. Wires must terminate with axis parallel to long lug axis (see examples pg. 2). Solder must cover wiring at terminals such that no loose strands emanate. No cut or broken wire strands due to poorly stripped insulation or excessively bending wires are permitted.

Points: \_\_\_\_\_ of 25

**7. Electrical Operation and Functionality (20 points)**

Three LEDs must function in test mode (potentiometer fully clockwise) and three LEDs illuminate with broad-spectrum audio input. If partial or non-functioning, troubleshooting guidelines in the manual must have been attempted for credit. Troubleshooting is evidenced by student's description of actions taken to diagnose and repair faults. TA support is encouraged, but student must describe troubleshooting measures taken to receive credit.

Points: \_\_\_\_\_ of 15

**8. PCB Assembly [from Self-Evaluation] (20 points)**

Points: \_\_\_\_\_ of 20

**Grand Total:**

Points: \_\_\_\_\_ of 100

