

## AME 20216 – Technical Memo Score Sheet

A6 and A7 – Solar Panels

Author Name or NDID: \_\_\_\_\_

Lab Section (Day/time): \_\_\_\_\_

### General Requirements (12 points)

Item and Description	Points Awarded	Possible Points
<b>Overall quality of writing</b> (spelling, grammar, readability and discussion)		5
<b>Format</b> (font, margins, page numbers, grading sheet, heading, abstract/summary, findings, and conclusion)		3
<b>Technical Elements</b> (numbered equations, variables, and figures)		3
<b>References</b> (2 sources must be included in the reference section and cited in the text)		1
<b>TOTAL</b>		12

**Overall quality of writing** – The student must clearly explain the procedure and *discuss* the results using college-level English.

**Format** – The students **MUST** follow the *Technical Memo* format given by the template posted on the lab website.

### Technical Elements

- All figures and tables are properly labeled (i.e. Figure 1, Table 1, etc.), captioned, and referenced in the text. Axes on figures must be labeled with units, and plots with multiple data sets must include a legend.
- Equations must be numbered, and the variables must be defined (i.e. “where  $c$  is the speed of sound.”).
- Variables should be written in italics.
- Students, please **print and proofread** the hardcopy of your report before you turn it in. Sometimes, equations and figures do not print correctly!

**References** – The report must include 2 references. These can be data sheets from Prof. Ott’s website, articles from the internet, the textbook, etc.

Additional information on technical writing and proper format can be found in Chapters 15 and 16 of the textbook (*Dunn*).

### Specific Requirements for E4 (15 points)

Note that any curve fit or theoretical curve must be plotted as a *smooth, continuous* line, and the equation for said curve *must* be included as a numbered equation in the main text with all the variables defined. For more details on any of the items below, please refer to the lab handout.

Item and Description	Points Awarded	Possible Points
Plot of measured efficiency vs. load for the three different Variac settings		2
A table containing the maximum power, load resistance that yielded the maximum power, and estimated internal resistance of the solar panel for the three different Variac settings		1
A plot of measured irradiance vs. distance on a <i>linear scale</i> for the three different Variac settings		2
A log-log plot of irradiance vs. distance with linear curve fits and appropriate discussion of the inverse square-law for the three different Variac settings		2
Plot and/or table of data from your independent measurements		3
An original schematic illustrating your independent experimental set-up		2
A brief case study of the student's choosing (Analysis must contain quantitative information*.)		3
<b>TOTAL</b>		<b>15</b>

\* For the case study, a bland, qualitative discussion of energy policy is NOT acceptable and will be awarded ZERO points.

**NOTE:** The guidelines for this lab report are less constraining with the hopes that the students will be able to independently apply what they have learned in the course.

**OVERALL SCORE** \_\_\_\_\_ / 27