# Thermal Transport II Lab

Name_____

| CATEGORY | EXEMPLARY | ACCOMPLISHED | DEVELOPING | EMERGENT |
|---|---|---|---|---|
| Quality of Presentation | Excellent effort that successfully communicates all the relevant features of the experiment in a thoroughly professional looking manner | Good effort that is facilitates the reader's understanding of the data with no substantive errors in plots, calculations, grammar or communication. | Good effort with some errors in plot labeling or calculations; inconsistencies in presentation, grammar, or communication (handwritten) | Some effort, small and hard to read or hand written, ineffective communication of concepts |
| Why radiation? | Clarity and coherence would convince a global warming skeptic to volunteer for Al Gore | Clear and coherent argument that anticipates most of the reasonable alternatives and responds appropriately | Convincing to someone who already believes the answer is radiation | Convincing to small child with candy bribe |
| Filament Temperature | Quantifies potential errors in determination of temperature and relates to photography. | Gets reasonable temperature from Stefan-Boltzmann law that is well correlated with color temperature. Make astute observations about the nature and meaning of the universe. | Gets a temperature from the Stefan Boltzmann law with some ties to physical equipment | Moves some numbers around and takes a fourth root. Gets a temperature that sounds hot. |
| Convective acceleration | Notices relationship between this problem and various problems throughout calc physics – derives expression for buoyant force | Determines density of heated air (by two methods) and buoyant force and uses a freebody diagram to determine acceleration | Determines density of heated air and has expression for buoyant force | Successfully calculates the change in density of the air |
| Comments | | | | |