

1 Data Analysis

1.1 Low-Temperature Lab

Table 1 shows the data collected for this experiment, as well as associated measurement errors.

V (lamp)	ΔV (lamp)	I	ΔI	mV (detector)	ΔmV error
0.0	0.005	0.0	0.01	0.01	0.005
0.5	0.005	0.46	0.02	0.11	0.015
1.0	0.001	0.571	0.01	0.16	0.05
1.5	0.001	0.653	0.01	0.264	0.005
2.0	0.001	0.729	0.01	0.423	0.005
2.5	0.001	0.800	0.01	0.605	0.008
3.0	0.005	0.868	0.01	0.834	0.005
3.5	0.001	0.932	0.01	1.1	0.01
4.0	0.001	0.994	0.005	1.43	0.005
4.5	0.001	1.050	0.005	1.76	0.005
5.0	0.001	1.107	0.005	2.11	0.005
5.5	0.001	1.161	0.005	2.50	0.005
6.0	0.001	1.214	0.005	2.89	0.005
6.5	0.001	1.263	0.005	3.34	0.005
7.0	0.001	1.211	0.005	3.83	0.005
7.5	0.001	1.358	0.005	4.31	0.005
8.0	0.005	1.403	0.005	4.8	0.01

Table 1: Measurements for the voltage and current flowing through the lamp, and the voltage measurements from the detector.