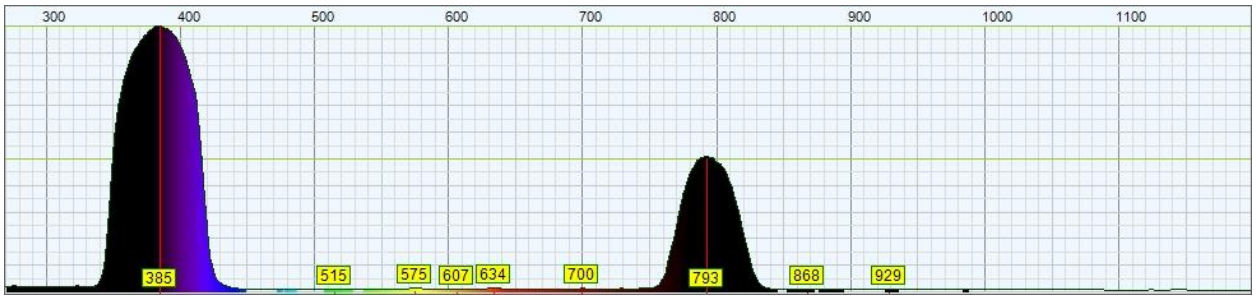
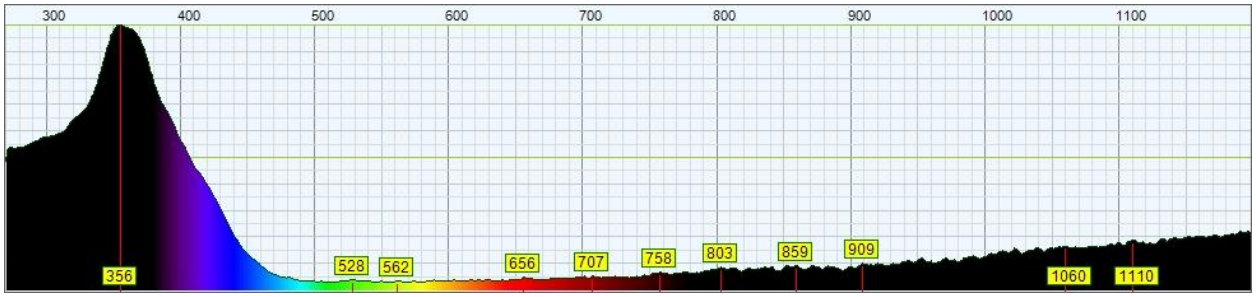
Initial Testing and Data Gathering

1. To test how accurate the thermino spectrometer software is, I compared the results from shining the factory labeled 365nm UV flashlight into the spectrometer.



2. The exposed webcam was then compared the same way. Tests were conducted in a dark room so that no ambient light affected the results.

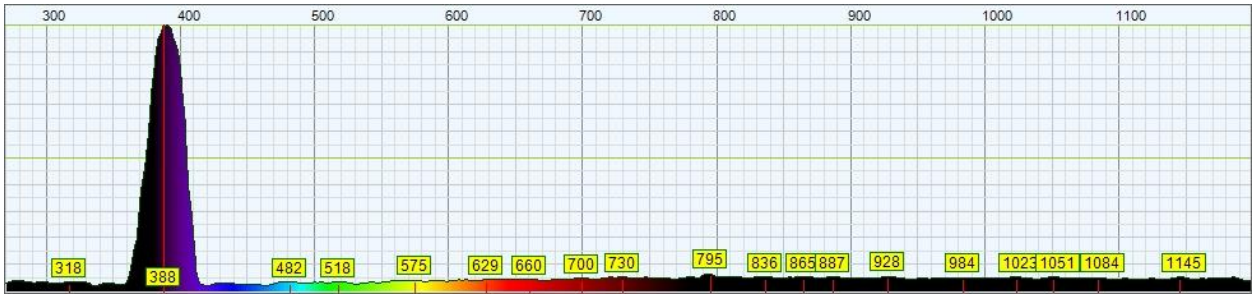


Unfortunately, neither the thermion spectrometer nor the webcam reported 365nm.

The webcam result was also highly dependent on which angle light entered the CMOS chip. A setup like that of the thermion spectrometer would help with consistency.

3. Tests were run again but this time, by shining a flashlight through an empty glass jar to see how the jar would affect spectrometer readings.

4. The jar filled with distilled water.



This result was surprising, as the water seemed to cause the reading to pick up light across the entire spectrum.

5. With potting soil added to the water.

This test resulted in mixed readings from the software. The readings changed as the potting soil settled in the water but 388-390nm remained the peak, which is similar to the distilled water reading.