Quantum Phenomena: Single and Double Slit Interference Observations for a Single Photon

Thresa Kelly, Jacob West, and Michael Murray
University of Kansas, PHSX 616 Physical Measurements
(Dated: August 31, 2023)

[TEXT HERE]

I. INTRODUCTION

[TEXT HERE]

II. DETECTORS

[TEXT HERE]

III. RESULTS

[TEXT HERE]

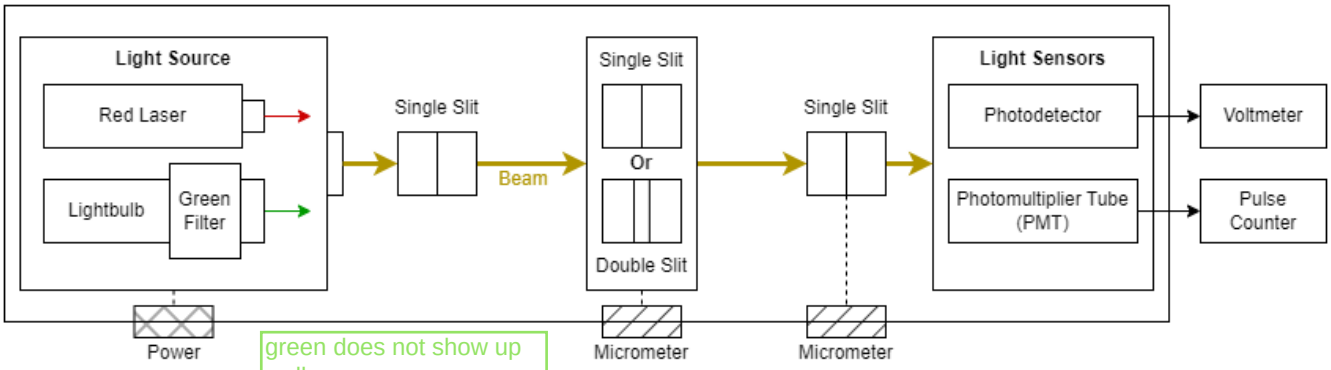
IV. DISCUSSION

[TEXT HERE]

V. CONCLUSION

[TEXT HERE]

simpler, show one configuration at a time, Have just the lightbulb. double slit in center. Be able to turn the micrometer, i.e. screw image.



green does not show up well.

FIG. 1. Diagram of the photon detector. When the light source is powered on, it produces a beam of photons directed through three sets of single or double slits. The first slit is a single slit, which collimates the beam and blocks scattered light. The second slit, either single or double slit, can be adjusted by a micrometer. This slit is used to test the wave-particle nature of the photons. The rightmost single slit is placed just before the beam reaches the photo-sensors; its position can be adjusted using the micrometer to take measurements across the sensor width. The light source may be either a laser or light bulb: the red laser is used for calibrating the instrument, and the green filtered light bulb is used to generate single observable photons. The sensors include a photodetector and photomultiplier tube (PMT). The photodetector generates an increasing voltage with increasing intensity of incident light. The PMT emits an electrical pulse for each incident photon.

text must be > size 12 on PAPER

Be more clean in caption with voltmeter and pulse coutner