

Abstract Submitted  
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**Visible Spectroscopy on the Plasma Liner Experiment (PLX)<sup>1</sup>** JACOB SCHWARTZ, UCLA, TOM AWE, SCOTT HSU, LANL, ELIZABETH MERRITT, ALAN LYNN, MARK GILMORE, UNM, STEPHAN FUELLING, UNR — The Plasma Liner Experiment (PLX) will study the merging of thirty high Mach number jets of argon plasma in a spherically convergent configuration. Initial experiments will study single jet propagation, where it is important to measure the jet density, velocity, and temperature to evaluate jet evolution during its transit from the chamber wall toward the center. We have constructed a broad band visible light survey spectrometer to observe light emitted from the plasma jet in order to identify the best specific argon emission lines on which to perform Doppler and Stark broadening analysis. Special attention has been paid to maximize throughput because of low expected light levels. Light is collected by a lens coupled to a hexagonal bundle of seven 1 mm core diameter fibers. The fibers fan out to couple to the slit of a 14 cm focal length spectrometer which is observed by an intensified CCD camera. We discuss the design and assembly of this spectrometer system and (time permitting) initial data from single jet experiments. This work will inform the design of a high resolution spectroscopy system for future PLX experiments.

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