

Abstract Submitted
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Pressure and Magnetics Measurements of Single and Merged Jets¹ S. MESSER, A. CASE, S. BROCKINGTON, R. BOMGARDNER, F.D. WITHERSPOON, HyperV Technologies Corp. — We present pressure and magnetic data from both a single full scale coaxial gun and from the merging of jets from several minirailguns. The magnetic probes measure all three components of field, and include an array of probes inside the coaxial gun. Magnetic measurements beyond the muzzle of the gun show the scale of currents trapped in the plasma plume. The pressure probe measures adiabatic stagnation pressure and shows how this quantity decreases with distance from the gun as well as the changes in stagnation pressure through the merge process. Stagnation pressure is influenced by density, temperature, and velocity, and serves as a check on spectroscopic and interferometer measurements. Unlike optical measurements, stagnation pressure is taken at a definite location. These guns are early prototypes of guns to be installed on the Plasma Liner eXperiment at LANL. The jet-merging results are reviewed in the context of what is expected for PLX.

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