

Abstract Submitted
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A High Repetition Rate Plasma Focus for High Energy Density Plasma Studies¹ BRIAN BURES, MAHADEVAN KRISHNAN, ROBERT MADDEN, Alameda Applied Sciences Corp — Large, high energy density plasma sources such as Sandia's Z-machine or the National Ignition Facility are limited to low repetition rate operation (~ 1 shot per day). Intermediate facilities still have low data rates (~ 10 shots per day). Alameda Applied Sciences Corporation has demonstrated a plasma focus operating from 200- 500 kA, capable of firing shots at 0.1 Hz. A typical run gathers data over ~ 1000 shots. Such high data rates allow validation and verification of numerical simulation codes with a statistically significant data set over a wide variety of operating conditions. A variety of terminal measurements (current and voltage), neutron yield, optical emission spectroscopy, hard x-ray images and zipper array data are used to characterize the source. Additional diagnostics such as interferometry, x-ray back lighting and soft x-ray spectroscopy are discussed.

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