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Performance Metrics of the Z Pinch Dynamic Hohlraum¹ G.A. ROCHAU, J.E. BAILEY, G.A. CHANDLER, P.W. LAKE, R.J. LEEPER, D.S. NIELSEN, S.A. SLUTZ, J.A. TORRES, Sandia National Laboratories, M.P. MANICKE, C.J. MEYER, T.C. MOORE, K-tech Corp. — The z-pinch dynamic hohlraum is used as a high-power x-ray source for a variety of HEDP applications including radiation physics, opacity measurements, and inertial confinement fusion (ICF). In each of these applications, the usefulness of the source depends on the reproducibility of the pulsed power performance and the resulting x-ray energy emission and pulse shape. A statistical analysis of a number of different performance metrics has been completed for > 10 experiments with nearly identical z-pinch target geometry and diagnostic viewing access. It is found that the 1-sigma reproducibility of the x-ray energy emission and pulse-shape is < 13% and < 4% respectively. A discussion of this analysis and the impact on the various HEDP applications is included.

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