

Abstract Submitted
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Wire Fixturing in High Wire-Number Z-Pinch Implosions Important for Reproducibility and High Power T.W.L. SANFORD, R.C. MOCK, J.F. SEAMEN, M.R. LOPEZ, SNL, R.G. WATT, G.C. IDZOREK, D.L. PETERSON, LANL — Dynamic Hohlraums (DH) [1] driven by W wire-array Z pinches are being developed and used as intense black-body x-ray sources for high temperature radiation flow and ICF experiments on Z. They are currently the most energetic and intense pulsed-power driven radiation sources in the laboratory for these applications. Three methods for positioning and holding the wires in place, within these loads, have been developed: the “flop-over” [2], the “hang-down” [2], and the “weightless”. The shot-to-shot variation in magnitude and shape of the radial and top-bottom axial powers and spectra are used to establish the efficacy of each wire-fixturing method. Comparisons among the 3 fixturing techniques illustrate the importance of good wire-cathode contact. In general, poor wire-electrode contact leads to a less coherent implosion, and to excessive W-wire plasma flowing across the REHs (radiation exit holes) located at either end of the DH, increasing the opacity of the REH, with subsequent lowering of axial power. [1] T. W. L. Sanford. et al, *Phys. Plasmas* **9**, 3573 (2002). [2] T. W. L. Sanford. et al, *Digest Tech. Papers, IEEE Inter. Conf. On Pulsed Power* (Dallas, TX, 2003), pp 733-6. *Sandia is a multiprogram laboratory operated by the Sandia Corporation, a Lockheed Martin Company, for the U.S. Department of Energy under Contract No. DE-AC04-94AL85000.

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