

Abstract Submitted
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Wire-array on foil implosions for radiation pulse shaping¹ D.B. SINARS, M.E. CUNEO, R.W. LEMKE, M. MARTIN, E.M. WAISMAN, M.P. DESJARLAIS, J.L. PORTER, Sandia National Laboratories, Albuquerque, NM, 87185-1193 — Previous experiments used nested wire-array z-pinches in a current-transfer (i.e., transparent) mode to produce shaped radiation pulses consistent with three-shock low-adiabat compression of high-yield inertial confinement fusion capsules [1-2]. Here we discuss experiments where the inner wire array is replaced with a thin foil of comparable mass. The interaction with the foil occurs at a larger radius and has a slightly larger power than tests using an inner wire array. Experiments with foams inside of the foil do not show an interaction pulse with the foam, and the main radiation pulse is broadened so that the peak power is lower when using inner foils (60 TW versus 100 TW for similar nested arrays). We will present comparisons of nested-array and array-on-foil implosions. [1] M.E. Cuneo et al., Phys. Rev. Lett. [2005], [2] M. E. Cuneo et al., Phys. Plasmas [2006]

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