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Tungsten wire-array power variations on the Z facility versus implosion time[1] D.B. SINARS, M.E. CUNEO, E.P. YU, D.F. WENGER, D.E. BLISS, M.G. MAZARAKIS, E.M. WAISMAN, J.L. PORTER, Sandia National Laboratories, P.O. Box 5800, Albuquerque, NM, 87185-1193, USA, S.V. LEBEDEV, Blackett Laboratory, Imperial College, London, SW7 2BW, UK — We report on a set of tungsten wire array experiments where the array diameter (20 mm), height (10 mm), and wire number (300) were kept constant, but the mass of the array was varied (by altering the initial wire diameters) to vary the implosion time. Multiple tests using total masses of 1.14, 2.5, and 6.0 mg (65, 81, and 100 ns implosion times, respectively) were done, showing average peak powers of about 100 TW, 120 TW, and 95 TW, respectively. The high powers obtained using lower masses are notable because the short implosion times result in lower peak currents (12.7 MA, 16.3 MA, and 17.3 MA, respectively). Radiography, shadowgraphy, radiated power, and other data from these arrays will also be discussed.

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