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Polar-drive experiments with shimmed targets on OMEGA F.J. MARSHALL, P.B. RADHA, M.J. BONINO, J.A. DELETTREZ, R. EPSTEIN, S. SKUPSKY, Laboratory for Laser Energetics, U. of Rochester, E. GIRALDEZ, General Atomics — Polar-drive experiments are being performed on OMEGA in preparation for future ignition attempts using the same method on the National Ignition Facility. This work presents results from a series of experiments employing shimmed shells whose shape (thinner at the target equator) is used to further compensate for the oblique illumination present in the polar-drive beam configuration. Implosion experiments were performed with multiple-picket laser pulses from 40 OMEGA beams driving gas-filled, shimmed shells. The implosions were diagnosed with x-ray backlighting, fusion yield, and reaction particle spectra from which the implosion symmetry, areal density, and core conditions are inferred. The compressed shell shape determined from framed x-ray radiography is compared to that predicted by the 2-D hydrodynamics code *DRACO*. The benefits of using a shimmed target for polar-drive implosions are less oblique illumination, better low-mode implosion symmetry, and are clearly demonstrated by these experiments. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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