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ICF Hohlraum Energy Loss Through Diagnostic Holes and Apertures T.E. TIERNEY, R.G. WATT, H.E. TIERNEY, R.J. KANZLEITER, G.C. IDZOREK, R.R. PETERSON, Los Alamos National Laboratory, M.R. LOPEZ, M.C. JONES, Sandia National Laboratories — The Z dynamic hohlraum (DH) was used to examine inertial confinement fusion energetics and radiation transport. A 2.4-mm diameter, 4-mm high copper-walled hohlraum is mounted above the DH to capture ∼100 kJ of axially-emitted quasi-Planckian radiation (T_{rad} ∼ 180-220 eV). A 1-mm diameter hole was placed at the top of the hohlraum, while some targets had an additional 400-micron wide groove cut in the side. A 4-mm diameter cylinder of 60 mg/cc silica aerogel foam surrounds the hohlraum to produce blast waves (BWs) out the top and sides of the hohlraum. The propagated distance and shape of the BWs provides estimates of time-integrated energy delivered to the foam. Single frame soft x-ray imaging recorded the formation of BWs as well as wall ablation and motion. This experiment diagnosed energy loss through apertures in hohlraums by use of BW measurements. We discuss the experiment results in comparison to 2-D radiation hydrodynamic simulations.

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