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Using directly driven beryllium spheres to study heat transport<sup>1</sup> W. A. FARMER, LLNL, C. BRUULSEMA, LLNL, University of Alberta, M. W. SHERLOCK, G. F. SWADLING, M. D. ROSEN, J. S. ROSS, LLNL, W. ROZMUS, University of Alberta, SLAC National Accelerator Laboratory — Heat transport in integrated experiments can be difficult to study due to the complex interplay between radiation transport, laser-plasma interactions, and heat conduction. Selfgenerated magnetic fields, nonlocality, and micro-instabilities all alter the underlying heat flux. Here, we report experimental results of directly driven beryllium spheres at the Omega laser facility. Low Z beryllium reduces power emitted as x-rays to a small percentage of incident laser power. Incident laser intensity of  $10^{14}$  W/cm<sup>2</sup> results in  $\sim 96\%$  of laser energy coupled to the target, in agreement with radiationhydrodynamics simulations which neglect cross-beam energy transfer (CBET). At  $2.5 \times 10^{14}$  W/cm<sup>2</sup>, coupled laser energy drops to 87% and it is believed that CBET results in a loss of  $\sim 10\%$  of the incident energy. Comparisons are made between measured densities and temperatures using Thomson scattering and 2D simulations which include Thomson self-heating from the probe beam. At drive intensity of  $10^{14}$ W/cm<sup>2</sup>, Thomson self-heating has roughly a 10% effect on measured temperature. The impact of self-generated fields on heat transport in the 2D simulation is assessed.

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