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Intense Laser-to-Fast-Electron Coupling Efficiency in Wedge-Shaped-Cavity Targets W. THEOBALD, P.M. NILSON, J.F. MYATT, B. EICHMAN, S. IVANCIC, C. STOECKL, C. REN, J.A. DELETTREZ, J.D. ZUEGEL, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester, V. OVCHINNIKOV, L. VAN WOERKOM, R.R. FREEMAN, Ohio State University, R.B. STEPHENS, General Atomics — The interaction of ultra-intense lasers with hollow re-entrant cone targets is an important aspect of the fast-ignition scheme in inertial confinement fusion. Information on the spectrum of the ∼MeV electrons and the efficiency with which they are generated is required. We report on experiments of ∼5-J, ∼0.5-ps, $\sim 1 \times 10^{19}$ W/cm^2 laser pulses interacting with wedge-shaped-cavity targets. Spatially and spectrally resolved K-shell emission measurements from small-mass, Cu wedge-shaped-cavity targets with dimensions of $\sim 200 \times 100 \times 20$ μm^3 are reported for various opening angles and laser polarizations and are compared to flat-foil targets in the refluxing geometry.[1] This work was supported by U.S. Department of Energy under DE-FC52-08NA28302 and No. DE-FG02-05ER54839.

[1]P. Nilson *et al.*, Phys. Plasmas **15**, 056308 (2008).

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