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Isochoric heating from fast electrons using mass limited targets MICHEL KOENIG, Laboratoire LULI, SOPHIE BATON, PERCEVAL GUILLOU, PATRICK AUDEBERT, LUDOVIC LECHERBOURG, BENJAMIN BARBREL, SERNA BASTIANI-CECCOTTI, CHRISTOPHE ROUSSEAUX, LAURENT GREMILLET, ERIK LEFEVRE, CEA Bruyères le Chatel, CHRISTINA BACK, General Atomics, PRAVESH PATEL, LLNL, TOM COWAN, University of Nevada, JENNY RASSUCHINE — Experiments to investigate fast electron transport in thin, mass-limited multilayer targets were performed at the LULI 100 TW laser facility. The targets were composed of V/Cu/Al and varied from 300 to 50 μm in diameter. They were isochorically heated by a 20 J, 300 ps laser pulse that delivered I$\sim$2x10^{19} W/cm2 to form a warm dense plasma. X-ray emission from the Cu and Al layers was measured using conical and spherical Bragg crystals. Time-resolved Kα emission spectra were also obtained using an ultra-fast streak camera indicating a total refluxing of the electrons. The data from targets of different size and/or Cu layer thickness are compared and analyzed to better understand the heating of the target and temperature of the plasma. Temperatures up to several hundred eV have been deduced from detailed spectra analysis. Comparison with PIC simulations will be presented.

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