

Abstract Submitted
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Isochoric heating of reduced-mass targets in short pulse laser experiments at 0.53 μm SOPHIE BATON, PATRICK AUDEBERT, MICHEL KOENIG, FREDERIC PEREZ, MAKHLAD CHAHID, LULI, CHRISTOPHE ROUSSEAU, LAURENT GREMILLET, ERIK LEFEBVRE, CEA-DIF, JENNY RASSUCHINE, TOM COWAN, SANDRINE GAILLARD, University of Nevada, Reno, RONNIE SHEPPERD, LLNL, KIRK FLIPPO, LANL — Recent works have shown the possibility to heat isochorically mass limited targets by using the electron refluxing. We report on experiment performed at the 100 TW LULI laser facility dedicated to the study of fast electron transport in multilayer reduced mass targets. The targets were composed of 0.2V/5Cu/5Al μm and varied from 300 to 50 μm in diameter. They were irradiated by a 300 ps laser pulse at 1.057 μm and 0.53 μm that delivered $I \sim 2 \times 10^{19} \text{W}/\text{cm}^2$ and $I \sim 10^{19} \text{W}/\text{cm}^2$ respectively to form a warm dense plasma. Emission from the rear side was observed using K-alpha spectroscopy and imaging diagnostics. Spectra including the Al and Cu-K-alpha, and Al He-like emissions show changes as a function of total mass. The data obtained from all diagnostics (K-alpha spectroscopy and imagers on the rear side and the transverse side) show a different behavior depending on the incident wavelength.

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