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Development of a Buried Layer Platform at the OMEGA laser to Study Coronal (nonLTE) Plasmas[1] M. B. SCHNEIDER, E. V. MARLEY, G. V. BROWN, R. F. HEETER, M. A. BARRIOS, M. E. FOORD, W. J. GRAY, L. C. JARROTT, D. A. LIEDAHL, C. W. MAUCHE, K. WIDMANN, Lawrence Livermore Natl Lab — A buried layer platform is being developed at the OMEGA laser to study the radiative properties of coronal (non-LTE) plasmas (ne ˜few 10ˆ21 /cmˆ3, Te ˜1 – 2 keV) of mid to high Z materials. In the current study, the target was a 200 μm square with equal atomic mixes of gold/iron/vanadium in the center of a 600 μm diameter, 10 μm thick beryllium tamper. The thickness of the buried layer was either 1200 A or 1800 A. Lasers heat the target from both sides for up to 4 ns. The size of the microdot vs time was measured with x-ray imaging (face-on) and x- ray spectroscopy (side-on). The radiant x-ray power was measured with a low-resolution absolutely calibrated x-ray spectrometer (DANTE). The temperature was measured from the Fe and V helium-beta complexes. The use of these measurements to deduce emissivity of the target in the 2-3 keV x-ray range and improvements for future experiments are discussed.

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