Abstract Submitted
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X-ray conversion efficiency measurements for CsI and Sn[1] JOHN BENAGE, PAUL KEITER, NICK LANIER, Los Alamos National Lab — We measured the absolute conversion efficiency of Sn and CsI in the energy range of 3900 to 5600 eV using the Omega laser at the Laboratory for Laser Energetics. The laser intensity was varied from $2x10^{15}$ W/cm^2 to $2x10^{16}$ W/cm^2. The efficiency measurements were for 1 ns laser pulse widths and were determined based on previous calibration measurements for several x-ray films. To obtain the efficiencies, we measured absolute film exposures in several energy bands by employing different x-ray filters. The overall efficiency was then determined by calibrating these individual band measurements to the overall spectrum. One band was used as a high energy background measurement. Our results indicate the overall conversion efficiency was relatively insensitive to intensity in this regime and in general was of order 0.1-1%. We conclude with a discussion of the usefulness of such broadband backlighters for HED experiments.

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