

Abstract Submitted
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High-Resolving-Power, Streaked X-Ray Spectroscopy on the OMEGA EP Laser System P.M. NILSON, F. EHRNE, C. MILEHAM, D. MASTROSIMONE, R.K. JUNGQUIST, C. TAYLOR, R. BONI, J. HASSETT, C.R. STILLMAN, S.T. IVANCIC, D.J. LONOBILE, R.W. KIDDER, M.J. SHOUP III, A.A. SOLODOV, C. STOECKL, W. THEOBALD, D.H. FROULA, Laboratory for Laser Energetics, U. of Rochester, K.W. HILL, L. GAO, M. BITTER, P. EFTHIMION, Princeton Plasma Physics Laboratory, D.D. MEYERHOFER, LANL — A high-resolving-power, streaked x-ray spectrometer is being developed and tested on the OMEGA EP Laser System to study temperature-equilibration dynamics in rapidly heated solid matter. Temporal spectral shifts of the Cu K_{α} line in isochorically heated solid targets provide a fairly simple system where the spectrometer performance will be validated. The goal is to achieve a resolving power of several thousand and ~ 2 -ps temporal resolution. A time-integrating survey spectrometer has been developed and deployed on OMEGA EP to evaluate the throughput, focusing fidelity, and spectral resolution of two different crystal geometries. The results from these measurements will be presented and used to justify the down-selected time-resolved spectrometer design. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

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