

Abstract Submitted  
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**X-ray Thomson scattering spectra of shock-compressed Be plasmas** H.J. LEE, R.W. FALCONE, Department of Physics, University of California, Berkeley, S.H. GLENZER, P. NEUMAYER, J. CASTOR, O.L. LANDEN, T. DÖEPPNER, R.W. LEE, B.A. HAMMEL, D.H. MUNRO, B.K. SPEARS, S. WEBER, Lawrence Livermore National Laboratory, C. FORTMANN, R. REDMER, R. THIELE, Institut für Physik, Universität Rostock, Germany, A.L. KRITCHER, Nuclear Engineering Department, University of California, Berkeley, D.D. MEYERHOFER, S.P. REGAN, Laboratory for Laser Energetics — We have measured x-ray Thomson scattering spectra of shock compressed Be for pressures in the range of 10-35 Mbar. 6 keV x-rays have been produced to perform spectrally resolved measurements of the plasmas employing both non-collective and collective scattering at the Omega laser facility. The scattering spectra from two different regimes show Compton and Plasmon features indicating Fermi-degenerate dense plasmas with a Fermi energy in excess of 30 eV and temperatures of 9-15 eV. These findings indicate compression by a factor of three in good agreement with radiation hydrodynamic modeling. This work was performed under the auspices of the Lawrence Livermore National Security, LLC, (LLNS) under Contract No. DE-AC52-07NA27344.

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