Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Plasma filling in small, hot targets at the NIF and OMEGA lasers* M.B. SCHNEIDER, D.E. HINKEL, B.K. YOUNG, J.P. HOLDER, A.B. LANGDON, L.J. SUTER, O.L. LANDEN, D.H. KALANTAR, R. KIRKWOOD, B.J. MACGOWAN, S.N. DIXIT, A.J. MACKINNON, J.W. MCDONALD, M.J. MAY, C. NIEMANN, K.M. CAMPBELL, J. SCHEIN, F. WEBER, K. WIDMANN, LLNL, H.A. BALDIS, C. CONSTANTIN, S. ROSS, UC Davis, W. SEKA, R. BAHR, C. STOECKL, V. GLEBOV, LLE, G. HOLLAND, J. SEELY, NRL, J.F. FOSTER, AWE — An experimental campaign to study radiation drive in small-scale hohlraums has been carried out at the NIF laser[1] and at the OMEGA laser.[2] Approximately 9.5kJ in 1nS of 351nm light in one on-axis beam (at NIF) or divided among 3 beam cones (at OMEGA) is used to heat 560 – 600μm gold cans. The targets fill with plasma so quickly that, late in time, most of the laser energy is deposited at the laser entrance hole. The plasma filling and final radiation drive is a function of the geometry. The experimental results on x-radiation drive, laser backscatter, hard x-rays, hard x-ray imaging, and x-ray burnthrough versus geometry are discussed.
1. Phys. Plasmas **12,** 056305, (2005) 2. *Inertial Fusion Sciences and Applications 2003 (IFSA03),* pp 242246 (2004). *Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under Contract No. W-7405-ENG-48 & Grant Num DE-FG52-2005NA26017 (NLUF)

M.B. Schneider

Date submitted: 02 Aug 2005 Electronic form version 1.4