

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Laser performance on the National Ignition Facility¹ MICHAEL SHAW, C.A. HAYNAM, W.H. WILLIAMS, C.C. WIDMAYER, M.A. HENESIAN, R.A. SACKS, S.N. DIXIT, P.J. WEGNER, S.T. YANG, B.M. VAN WONTERGHEM, Lawrence Livermore National Laboratory — The Laser Performance Operations Model (LPOM) [1] was developed to automatically set up, and diagnose the performance of the National Ignition Facility (NIF). LPOM uses the detailed physics model, Virtual Beamline (VBL) [2], for its energetics predictions. We will present comparisons of LPOM predictions with results of a series of laser shots where one beam in a quad was diagnosed at both 1w and 3w with the Precision Diagnostic Station (PDS). The comparisons will include pulse shaping, energetics, frequency conversion, shape timing adjustments, and spatial fluence in both the near and far field. An analysis of the shot-to-shot power repeatability for ignition pulses will also be presented.

[1] M. Shaw, et al, Optical Engineering, 43, 2885-2895 (2004).

[2] C. Haynam, et al, Applied Optics Journal Vol. 46, No. 16/1 June 2007.

¹Work performed under the auspices of the U.S. DOE by the UC Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48. UCRL-ABS-232888.

Daniel Kalantar
Lawrence Livermore National Laboratory

Date submitted: 23 Jul 2007

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