

Abstract Submitted
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NIF Sub-scale Platform Development¹ R.P.J. TOWN, F. ALBERT, L.R. BENEDETTI, D.K. BRADLEY, P.M. CELLIERS, E.L. DEWALD, L. DIVOL, D.E. EDER, G.N. HALL, O.S. JONES, S. LE PAPE, B.J. MACGOWAN, J.L. MILOVICH, J.D. MOODY, A. PAK, J. RALPH, H.F. ROBEY, J.R. RYGG, M.B. SCHNEIDER, D.J. STROZZI, Lawrence Livermore National Laboratory, Livermore, CA 94550 — In order to increase the shot rate on the National Ignition Facility (NIF) a smaller, lower-energy, room-temperature experimental capability has been designed. The goal of the sub-scale design was to reduce the energy requirement to 900kJ. The starting point for the sub-scale design was a layered plastic capsule in a full scale (575) gold hohlraum that was driven by a four shock, low adiabat, 1.8MJ, 420TW, 21-ns long laser pulse. Simple scaling arguments showed that scaling the capsule and hohlraum dimensions to 80% of full scale should meet the energy requirements. The capability includes sub-scale versions of the ignition-scale re-emit,² keyhole,³ symmetry,⁴ backlit,⁵ and hydro-growth radiography⁶ platforms. An experimental campaign to commission these platforms was performed. This talk will review the design and results of these commissioning experiments.

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R. P. J. Town
Lawrence Livermore National Laboratory, Livermore, CA 94550

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