

Abstract Submitted
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Neutron Time-of-Flight Diagnostic Performance for the National Ignition Facility's 2010 Campaign V.YU. GLEBOV, T.C. SANGSTER, C. STOECKL, J.P. KNAUER, Laboratory for Laser Energetics, U. of Rochester, M.J. MORAN, J.A. CAGGIANO, J. MCNANEY, T.J. CLANCY, J.D. KILKENNY, M.J. ECKART, D.H. MUNRO, R.A. LERCHE, E.J. BOND, LLNL — Installation of the neutron time-of-flight (nTOF) diagnostic at the National Ignition Facility (NIF) was completed in 2010. It consists of 18 data channels from 8 detectors along 6 flight paths. Two detector types are used: (1) scintillators coupled to gated photomultiplier tubes or vacuum photodiodes, and (2) chemical-vapor-deposition diamonds. Target-to-detector distances are nominally 4.5 and 22 m. These detectors were calibrated for yield and ion temperature at LLE's OMEGA Laser Facility prior to installation on the NIF. This presentation describes nTOF diagnostic performance in measuring neutron yield, ion temperature, and bang time in D₂ and THD (tritium, hydrogen, and deuterium) NIF implosions in 2010. This work is supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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