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Performance characterization measurements of DIXI, a x-ray framing camera with a <10 ps gate SABRINA R. NAGEL, P.M. BELL, D.K. BRADLEY, R.F. SMITH, M.J. AYERS, B. FELKER, G.W. COLLINS, Lawrence Livermore National Laboratory, T.J. HILSABECK, J.D. KILKENNY, T. CHUNG, B. SAMMULI, General Atomics, J.D. HARES, A.K.L. DYMOKE-BRADSHAW, Kentech Instruments Ltd. — Modeling shows that for an igniting ICF capsule the brightness of the x-ray emission at bang time compromises the images around (± 20 ps) bang time if gate times are longer than 10 ps. Here we present the latest characterization measurements for DIXI (dilation x-ray imager), a unique instrument that utilizes pulse-dilation technology [1] to achieve x-ray imaging with temporal gate times below 10 ps [2]. Time resolved x-ray measurements were conducted using the COMET laser facility at the Lawrence Livermore National Laboratory (LLNL). Results from these short pulse laser driven plasma experiments, in particular comparison measurements between two gate widths and the linearity along the active area, are given along with comparisons to gated x-ray imagers currently used at the NIF. LLNL is operated by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy, National Nuclear Security Administration under Contract DE-AC52-07NA27344. Work supported by U.S. Department of Energy under Contract DE-AC52-06NA27279. LLNL-ABS-564118

[1] T. J. Hilsabeck et. al., Rev. Sci. Instrum., 81, 10E317, (2010)
[2] S. R. Nagel et al., Rev. Sci. Instrum., accepted (2012)

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