

Abstract Submitted
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Calibration of the temporal response of Gated X-ray Framing Cameras for Imaging on NIF L.R. BENEDETTI, P. BELL, D.K. BRADLEY, S. GLENN, R.F. HEETER, J. HOLDER, N. IZUMI, N. SIMANOVSKAIA, Lawrence Livermore National Laboratory — We present methods and results for off-line testing of gated x-ray framing cameras such as the GXDs in use at the National Ignition Facility (NIF). These cameras capture a time dependent sequence of images by sending a voltage pulse across a stripline-coated microchannelplate(mcp). The amplification mechanism of the mcp produces a time-dependent gain that is narrower than the electrical pulse. While the basic operating mechanism is well-understood, the properties of the gain function are difficult to measure. We find that an integrated method can be used to interpret an ensemble of short-pulse laser images to determine optical gate width (relative to the electrical pulse width), pulse velocity and gain loss (droop) across the microchannelplate. We will compare these results to in situ measurements of flat-field and gain droop using the NIF laser. This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344 (LLNL-ABS-490824)

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