

Abstract Submitted
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High resolution >40 keV x-ray radiography using an edge-on micro-flag backlighter at NIF-ARC¹ MATTHEW HILL, AWE Plc, Aldermaston, UK, ALEX ZYLSTRA, CAMELIA STAN, TOM LOCKARD, LLNL, CA, USA, EDWARD GUMBRELL, AWE Plc, Aldermaston, UK, ROB RUDD, PHILIP POWELL, DAMIAN SWIFT, JAMES MCNANEY, HYE-SOOK PARK, LLNL, CA, USA — We present radiographic data and modulation transfer function (MTF) analyses of a multi-component test object probed at an effective backlighter energy >40 keV using a 5 μm -thin dysprosium foil driven by the NIF-ARC short pulse laser (~ 2 kJ, 10 ps). The thin edge of the foil acts as a bright line source of hard x-rays which is placed in a point-projection configuration with the test object and a filtered and shielded image plate detector stack. The system demonstrates superior spatial and temporal resolution when compared to an existing long-pulse-driven backlighter now used routinely at NIF for dynamic strength experiments, using only a small fraction of the laser energy and fewer beamlines.

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