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Evaluating the MMI diagnostic on OMEGA direct-drive shots J.A. BAUMGAERTEL, P.A. BRADLEY, J.A. COBBLE, J. FINCKE, P. HAKEL, S.C. HSU, R. KANZLEITER, N.S. KRASHENINNIKOVA, T.J. MURPHY, M.J. SCHMITT, R. SHAH, I. TREGILLIS, K. OBREY, Los Alamos National Laboratory, R.C. MANCINI, T. JOSHI, H. JOHNS, D. MAYES, University of Nevada, Reno — The Defect-Induced Mix Experiment (DIME) project utilized Multiple Monochromatic Imagers (MMI) on symmetric and polar direct-drive shots conducted on the OMEGA laser. The MMI provides spatially and spectrally resolved data of capsule implosions and resultant dopant emissions. The capsules had radii of $430 \mu m$, with CH shells that included an inner layer doped with 1-2 atom% Ti, and a gas fill of 5 atm deuterium. Simulations of the target implosion by codes HYDRA and RAGE are post-processed with self-emission and MMI synthetic diagnostic tools and quantitatively compared to the MMI data to determine the utility of using it for mix model validation. MMI data shows the location of dopants, which are used to diagnose mix. Sensitivities of synthetic MMI images and yield to laser drive and mix levels are explored. Finally, RAGE results, clean and with mix, are compared with time-dependent streak camera data. This work is supported by US DOE/NNSA, performed at LANL, operated by LANS LLC under contract DE-AC52-06NA25396.

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