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Areal Density and Ion-Temperature Measurements in Cryogenic-DT Implosions on OMEGA T.C. SANGSTER, V.N. GONCHAROV, R. BETTI, T.R. BOEHLY, J.A. DELETTREZ, V.YU. GLEBOV, S.X. HU, F.J. MARSHALL, R.L. MCCRORY, P.W. MCKENTY, D.D. MEYERHOFER, P.B. RADHA, W. SEKA, S. SKUPSKY, C. STOECKL, B. YAAKOBI, Laboratory for Laser Energetics, U. of Rochester, J.A. FRENJE, D.T. CASEY, PSFC, MIT — High areal densities (ρR) were recently reported from low-adiabat cryogenic deuterium–tritium (DT) implosions on the OMEGA laser.[1] These implosions used a multiple-shock drive pulse to minimize shock preheating. The ρR was measured using a magnetic recoil spectrometer to infer the neutron fraction scattered in the dense fuel. The measured yields, however, were only a few percent of the 1-D prediction. Considerable effort is underway to minimize the sources of nonuniformity in these implosions. This includes improved ice- and capsule-surface quality, improved beam-pointing accuracy, and advances in target mounting and alignment. These improvements are expected to measurably increase the ion temperature and primary neutron yield. This talk will report on the latest target-performance results. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

[1]V. N. Goncharov *et al.*, Phys. Rev. Lett. **104**, 165001 (2010)

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