

Abstract Submitted
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Post shot analysis of plasma conditions of Gold Spheres illuminated by the URLLE Omega laser, as measured via Thomson scattering¹
M.D. ROSEN, J.S. ROSS, H.A. SCOTT, N. LANDEN, LLNL, D. FROULA, URLLE, E. DEWALD, M. MAY, K. WIDMANN, LLNL — Recently there was a follow up to the 2006 campaign to illuminate 1 mm diameter gold spheres using the Omega laser at LLE. The 2013 campaign uses Thomson scattering to diagnose the plasma conditions as a function of time, at various radial positions in the coronal, laser heated, blow-off region. Laser irradiances were 1, 5, and 10 x 10¹⁴ W/sqcm, usually in a 1 ns pulse duration. Depleted uranium and Ag spheres were also tested. We compare the predictions of plasma conditions using various non-LTE computational models of atomic physics and electron transport (as implemented into the rad-hydro code Lasnex) to this data. The “high flux model (HFM)” (DCA atomic physics and non local transport) compares well for some of experiments, while an intermediate model that radiates a bit less total x-ray fluence than the HFM, does better on other experiments.

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