

Abstract Submitted
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New Aluminum Backlighter Characterization at the OMEGA Laser¹ JIM COBBLE, TOM TIERNEY, JOE ABDALLAH, Los Alamos National Laboratory — We have characterized keV emission from Al plasmas for various laser illuminations at the OMEGA laser with the goal of optimizing the ability to backlight low-atomic-number (low-Z) materials such as beryllium for fusion ignition studies. The conversion efficiency to Lyman α at 1.73 keV has been determined for 1 to 7 laser beams as a function of laser energy/power. The plasma is diagnosed by line ratios and the slope of the continuum to determine the temperature and density. Results are compared to detailed theoretical atomic physics models. For these experiments, half or more of the x-ray photons observed arise from the bremsstrahlung continuum rather than from Al line radiation, which reduces the importance of the line radiation for backlighting.

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