

Abstract Submitted  
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**Laser Deflection (Schlieren) Measurements of Hg Density in an Ultra High Pressure Arc Lamp**<sup>1</sup> J. KANE, M. KATO<sup>2</sup>, J.E. LAWLER, University of Wisconsin — The very high gas densities and excellent quality arc tubes of Ultra High Pressure (UHP) Hg arc lamps create opportunities for unusual diagnostics. An experimentally derived density map of a 213 bar UHP lamp is reported. The deflection of a laser beam by temperature induced density/index gradients is reconstructed through an Abel inversion. This deflection technique is most sensitive in the mantle unlike emission techniques which are sensitive in the arc core. The resulting map is compared to previous measurements of the temperature in the arc core as well as theoretical models of the temperature in the arc mantle.

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