

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Absolute Calibration of the OMEGA Streaked Optical Pyrometer M. GREGOR, R. BONI, A. SORCE, C. MCCOY, R.J. HENCHEN, T.R. BOEHLY, Laboratory for Laser Energetics, U. of Rochester, P.M. CELLIERS, LLNL — High-energy-density-physics (HEDP) experiments often rely on temperature measurements using optical pyrometry. Laser-driven experiments have time scales of picoseconds, requiring the use of a streak camera as a detector. This complicates the already formidable task of absolute calibration. We report on multiple calibration runs that used a NIST-traceable tungsten-filament lamp to calibrate the optical response of the streaked optical pyrometer on OMEGA. This entailed constructing a spectral-response function from measurements and estimates of the transmissions and responses of all components in the system as well as measurements using narrowband (30-nm) optical filters. The latter is used to normalize the estimated response. The resulting response function predicts the wideband (~ 300 -nm) response of the system to high precision. The performance of a spectral calibration device is also presented. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

T.R. Boehly
Laboratory for Laser Energetics, U. of Rochester

Date submitted: 12 Jul 2013

Electronic form version 1.4