Abstract Submitted
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The Ohio State University Scarlet Laser Facility – Open To External Users Via LaserNetUS[1] G. TISCARENO, N. CZAPLA, R. L. DASKALOVA, D. M. NASIR, N. RAHMAN, L. D. SMITH, A. ZINGALE, E. A. CHOWDHURY, D. W. SCHUMACHER, The Ohio State University, Columbus, Ohio 43210, USA — The Scarlet laser facility [1] at The Ohio State University features a 300 TW, 30 fs, 815 nm pulsed laser system capable of firing up to one shot per minute at a focused intensity exceeding 5 x 10^{21} W/cm^2. The facility includes a large 76 inch diameter, 85 inch tall experimental chamber with 38 large aperture diagnostic ports and 7 large doors for each access. A range of diagnostics are available including electron and ion spectrometers. Scarlet is available for external users via an independent proposal system as part of the DOE supported LaserNetUS network of 10 high-power laser facilities. See https://www.lasernetus.org. In addition to supporting user targets, our liquid crystal technology [2] is available to provide on-demand, free-standing thin film targets and plasma mirrors with thicknesses ranging from ˜10 nm to ˜1 μm. Recent upgrades include an improved pre-pulse contrast with better than 10^{-10} contrast without a plasma mirror up to 50 ps before the main pulse, a long focal length (F/17) configuration in addition to our standard short focal length (F/2) setup, and a >100 mJ probe pulse.

[1]This work was supported by DOE Office of Science, Fusion Energy Sciences under Contract No. DE-SC0019283: the LaserNetUS initiative at the Scarlet Laser Facility. [1] P. L. Poole, et al., Applied Optics 55, 4713 (2016). [2] P. L. Poole, et al., Applied Physics Letters 109, 151109 (2016).

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