Abstract Submitted for the DPP07 Meeting of The American Physical Society

High Dynamic Range Single Shot Third Order Autocorrelator¹ JOHN MORRISON, ENAM CHOWDHURY, TONY LINK, DUSTIN OFFER-MANN, VLADIMIR OVCHINNIKOV, REBECCA WEBER, LINN VAN WO-ERKOM, RICHARD FREEMAN, The Ohio State University — In experiments involving high power ultra-intense laser interactions with solid targets, characterizing the pre-pulse of the laser pulse is extremely important. The pre-pulse determines the initial conditions of the target onto which the main intense pulse impinges. This information is necessary for accurate experimental analysis and computer simulations for benchmarking efforts and is critical for understanding particle acceleration/transport relevant to Fast Ignition Inertial Confinement Fusion. Current techniques require a large number of shots without significant fluctuations, which are unavailable on low repetition rate lasers. The details of a few to single shot, 10 ps window, third order autocorrelator with high contrast developed on a high power laser will be presented.

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