Abstract Submitted
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Spectral Broadening and Pulse Compression of a High Average Power Yb:KGW Laser[1] JOHN BEETAR, SHIMA GHOLAM-MIRZAEI, SEAN BUCZEK, STEVEN SOLIS, MICHAEL CHINI, Dept. of Physics, University of Central Florida — We investigate the spectral broadening and temporal compression of 20 W average power, 50 kHz repetition rate near infrared pulses from a Yb:KGW laser amplifier. The spectrum of the 280 fs pulses centered at 1030 nm is broadened through self-phase modulation in a set of thin fused silica windows. We characterize the potential of the multi-plate continuum setup for achieving a broad supercontinuum spectrum, as well as the energy throughput and stability of the system. We further characterize the spectral phase of the pulses in order to determine the most appropriate approach for pulse compression. Our results suggest that the multi-plate continuum technique is a viable route to obtaining few cycle pulses at high average powers.

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