

Abstract Submitted
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Initial operation of the Lockheed Martin T4B experiment M.L. GARRETT, A. BLINZER, F. EBERSOHN, S. GUCKER, J. HEINRICH, C. LOHFF, T. MCGUIRE, N. MONTECALVO, A. RAYMOND, J. RHOADS, P. ROSS, B. SOMMERS, E. STRANDBERG, R. SULLIVAN, J. WALKER, Lockheed Martin - Palmdale — The T4B experiment is a linear, encapsulated ring cusp confinement device, designed to develop a physics and technology basis for a follow-on high beta ($\beta \sim 1$) machine. The experiment consists of 13 magnetic field coils (11 external, 2 internal), to produce a series of on-axis field nulls surrounded by modest magnetic fields of up to 0.3 T. The primary plasma source used on T4B is a lanthanum hexaboride (LaB_6) cathode, capable of coupling over 100 kW into the plasma. Initial testing focused on commissioning of components and integration of diagnostics. Diagnostics include both long and short wavelength interferometry, bolometry, visible and X-ray spectroscopy, Langmuir and B-dot probes, Thomson scattering, flux loops, and fast camera imagery. Low energy discharges were used to begin validation of physics models and simulation efforts. Following the initial machine check-out, neutral beam injection (NBI) was integrated onto the device. Detailed results will be presented. © 2017 Lockheed Martin Corporation. All Rights Reserved.

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