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High Foot Target Design Without Cross-Beam Energy Transfer In a Cylindrical Hohlraum[1] D.E. HINKEL, D.A. CALLAHAN, O.A. HURRICANE, P.A. MICHEL, W.L. KRUER, Lawrence Livermore Natl Lab — Recent High Foot implosions at the National Ignition Facility (NIF), where the laser power is high early in time, during the "foot," have resulted in record neutron yields [1]. To obtain near-spherical, low-mode implosion symmetry, these targets rely on cross-beam energy transfer (CBET), where outer beam power is transferred to the inner beams [2]. CBET has a temporal dependence, as large amounts of transfer occur early in the laser pulse, when the electron temperature is low, and at peak power, when the laser intensity is at its highest. Furthermore, there is also spatial non-uniformity across laser spots after transfer. We have designed a cylindrical High Foot target without CBET to mitigate these effects. Such a target is feasible because: (i) thinner ablator High Foot targets perform well at relatively low powers ($\sim$ 390 TW) and (ii) post-shot modeling of High Foot shots indicates that CBET is shutting off midway through peak power, and thus the average peak power cone fraction is typically less than 40%. Such a target design tests this hypothesis. We report here on the primary features of this design, comparing it with an analogous NIF shot where cross-beam energy transfer is used to achieve the desired peak power cone fraction.

[1] Hurricane *et al.*, *Nature* **506**, 343-348.
[2] P. Michel *et al.*, Phys. Plasmas **17**, 056305 (2010).

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