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Single and Double Shell Ignition Targets for NIF at 527nm D. C. WILSON, Los Alamos National Laboratory, M. L. SPAETH, Lawrence Livermore National Laboratory, L. YIN, J. P. SAUPPE, Los Alamos National Laboratory, L. BERZAK HOPKINS, Lawrence Livermore National Laboratory, E.N. LOOMIS, R.F. SACKS, B.J. ALBRIGHT, Los Alamos National Laboratory, D. STROZZI, D. MUNRO, C. WIDMAYER, B. RAYMOND, K. MANES, Lawrence Livermore National Laboratory — We have expanded Suter's (2004) description of 527nm NIF capabilities with beryllium ablators to include single shell HDC capsules based on the high yield NIF shot N170827, and double shell capsules with aluminum ablators. Both higher laser power and energy are available at 527nm. 2D HYDRA calculations included gold hohlraums with scaled capsules, laser pulses, and beam pointings. A 1.2 hydro scaled version of N170827 requiring 3.1 MJ and 700 TW calculates to yield 3.5e+18 neutrons. Increasing power from 450 TW at 351nm to 750 TW at 527nm using 1.8 MJ raises the hohlraum temperature from 310 to 330 eV. This allows a thicker ablator which can reach either higher velocity or carry more remaining mass. LAVALAMP II calculations confirm these are feasible NIF pulses. Drive symmetry changes were accounted for by using a 0.3mg/cc hohlraum gas fill. VPIC simulations of LPI suggest acceptable backwards SBS and SBS, but enhanced forward SRS. Funded by the USDOE. LA-UR-19-25677

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