A recent proposed novel octahedral spherical hohlraum having 6 cylindrical laser entrance holes (LEHs) with a single laser injection angle at 50 to 60 degree has the potential to provide a robust inherent high radiation symmetry and an efficient energy coupling to the capsule for ignition research with indirect drive [1-4]. In this work, an optimum laser repointing scheme with all laser injection angles in the range of 49.5 to 62 degree is proposed to conduct the 6-LEH spherical hohlraum experiments on the SG Facility originally designed for the 2-LEH cylindrical hohlraums. This repointing scheme is demonstrated successfully by experiment on the SG facility. Furthermore, a laser repointing scheme is proposed to carry a 6-LEH spherical hohlraum experiment on the National Ignition Facility (NIF), which uses 32 quads of the laser beams and can create a radiation drive peaked at 250 eV inside a 6-LEH spherical hohlraum on the NIF. Finally, an ignition beryllium capsule under a 250 eV radiation drive is proposed.

References


