

15th Target Fabrication Meeting

Project ORION; the next generation of high energy density physics research facilities
in the UK to meet AWE needs

Abstract

In order to meet AWE's future high energy density physics programme requirements a new laser facility is planned, project ORION. This laser uniquely combines 10 'long' pulse beams with a total energy of 5kJ at the third harmonic with 2 'short' pulse beams each of power 1PW. All the beams are combined in a single chamber with the flexibility to cover a larger region of temperature and density parameter space than is possible with the long pulse or short pulse capability individually. The configuration of the long pulse beams is optimised for indirect drive target heating whilst the PW beams are arranged orthogonally and can be used for heating or diagnostic backlighting. The rationale behind the facility will be highlighted and facility design summarised to show that it meets the requirements for various potential experimental applications and configurations.