

2008



OMEGA EP Laser Dedication



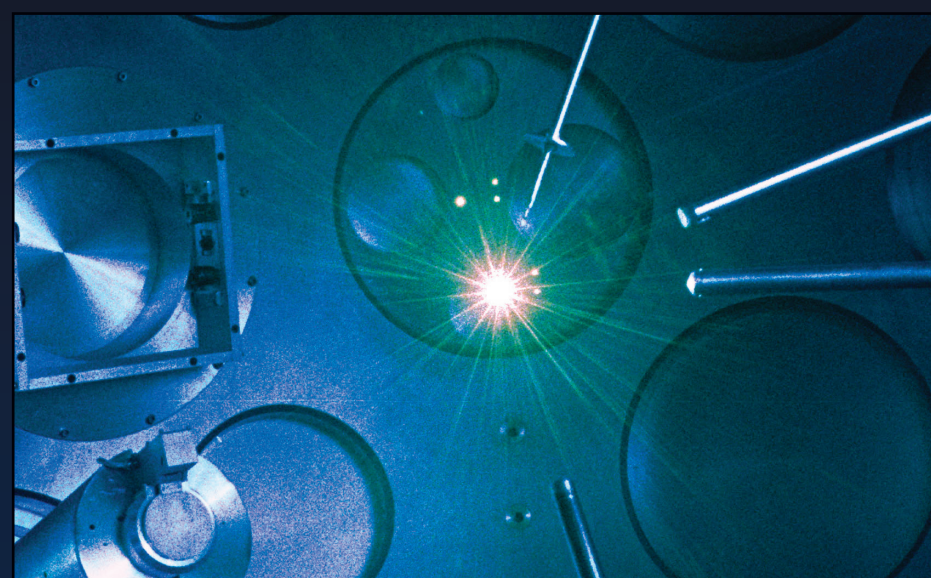
Senator Charles Schumer giving the keynote address at the dedication ceremony

On 16 May 2008, Dr. Robert McCrory, Vice Provost, Director, and CEO of LLE, along with special guests, which included University of Rochester President Joel Seligman and University Provost Ralph Kuncel, U.S. Senator Charles Schumer, U.S. Congressman Thomas Reynolds, and Under Secretary for Nuclear Security for the U.S. Department of Energy Thomas D'Agostino, dedicated the new OMEGA EP laser at the Robert L. Sproull Center for Ultra High Intensity Laser Research at the Laboratory for Laser Energetics.

OMEGA EP added four ultrahigh-intensity laser beams to LLE. The highest-energy laser in the world at the time, LLE's lasers can unleash more than a petawatt of power onto a target just a millimeter across. Working in conjunction with the original 60-beam OMEGA, OMEGA EP will open the door to the development of advanced ignition techniques.



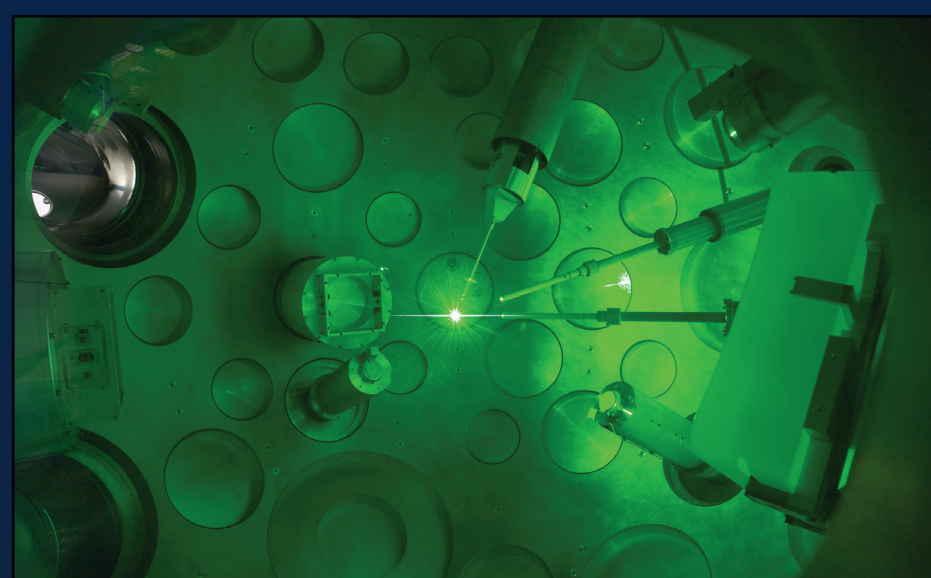
First Shots Fired on the OMEGA EP Laser System



First UV shot on target on OMEGA EP

The OMEGA EP Laser System was completed on time and within budget and initial experiments were started in the fourth quarter of FY08.

LLE Raises the Bar for Short-Pulse Energy On Target



OMEGA EP target shot

On 16 September 2008, an OMEGA EP beamline irradiates a target with an energy of 1415 J in an 11-ps laser pulse. This energy is more than a factor-of-2 higher than any previously obtained with a short-pulse laser system.

2009



OMAN's Last NIF Polarizer Run



OMAN's last NIF polarizer run

The last of the spare NIF polarizer optics were coated in the 72-in. chamber. This marked the completion of an eight-year NIF large-optic coating production phase carried out by OMAN, the LLE optical manufacturing group.

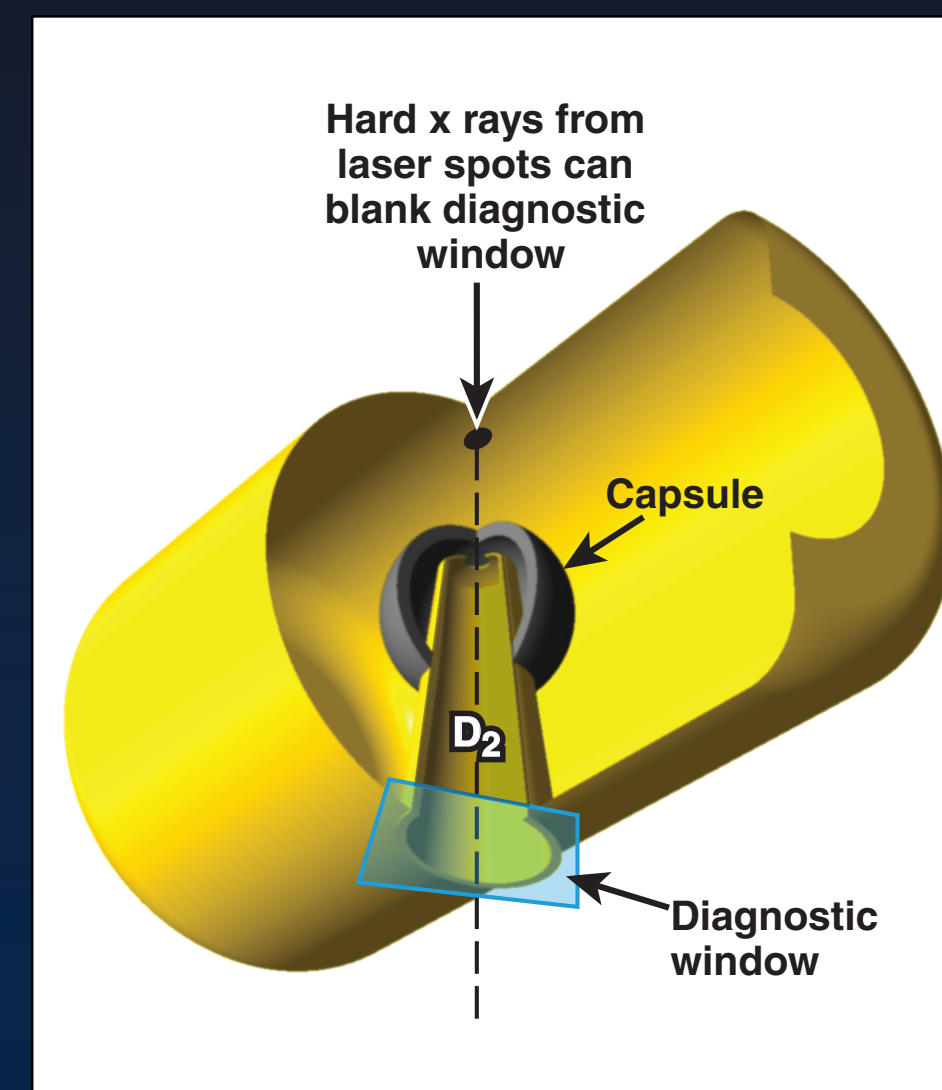
First Omega Laser Facility Users Group (OLUG) Workshop



Attendees of the first OLUG workshop, April 2009

The first Omega Laser Facility Users Group Workshop was held, attracting 110 researchers from 29 universities and laboratories and four countries. The purpose of the workshop was to facilitate communication and exchanges among the individual users and between the users and LLE. Almost 50 presentations highlighting ongoing and proposed research experiments were given, primarily by the 32 students and postdoctoral candidates in attendance.

Shock-Timing Technique for Ignition Targets at the NIF



Sketch of shock-timing target

LLE, in collaboration with Lawrence Livermore National Laboratory (LLNL) and Sandia National Laboratories (SNL), demonstrated a key shock-timing technique for ignition targets at the NIF. This technique is critical for optimizing the drive profiles for high-performance ICF capsules, which are compressed by multiple precisely timed shock waves. These results provide confidence that shock velocity and timing can be measured in NIF ignition targets, thereby optimizing these critical parameters.

