

About the Cover:

The ultraviolet diagnostic table (UVDT) situated on top of the south end-mirror structure in the OMEGA Target Bay is shown in the foreground of the photograph. A full-aperture optical wedge in one of the 60 beams directs 4% of the laser light to the UVDT. Scientists Sean Regan (left foreground) and John Marozas (right foreground) use the ultraviolet equivalent-target-plane (UVETP) diagnostic stationed on the UVDT to investigate the performance of laser-beam smoothing on OMEGA with 1-THz-bandwidth, 2-D smoothing by spectral dispersion (2-D SSD) and polarization smoothing (PS) (see article featured on p. 49). Optomechanical technician Rich Dean (far right) is seen positioning a distributed phase plate (DPP) in front of an OMEGA lens on the UVDT. The UVETP diagnostic captures a magnified image of the OMEGA far field on a CCD camera, which is located inside the black enclosure on the left side of the photograph. The Optical Manufacturing (OMAN) Group can be seen in the background installing phase plates on the OMEGA target chamber.



In the OMEGA viewing gallery, scientists Sean Regan (left) and John Marozas (right) discuss the on-target laser irradiation nonuniformity levels. Direct-drive inertial confinement fusion strives to achieve uniform target irradiation using two-dimensional smoothing by spectral dispersion (2-D SSD), distributed phase plates (DPP's), polarization smoothing (PS) utilizing birefringent wedges, and multiple-beam overlap. The article featured on p. 49 shows that the theoretical predictions of laser beam smoothing with 1-THz-bandwidth, 2-D SSD and PS are in excellent agreement with the measured performance.

This report was prepared as an account of work conducted by the Laboratory for Laser Energetics and sponsored by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy, and other agencies. Neither the above named sponsors, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, mark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by

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The work described in this volume includes current research at the Laboratory for Laser Energetics, which is supported by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC03-92SF19460, and other agencies.

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Printed in the United States of America
Available from
National Technical Information Services
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

Price codes: Printed Copy A05
Microfiche A01

Worldwide-Web Home Page: <http://www.lle.rochester.edu/>