Laser Development and Engineering Division

Optical Manufacturing Shop
Location of Facility: LLE, Room 185

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Description of Facility:
The Optical Manufacturing Shop has the capability of supplying optical devices in dimensions up to 75 cm. This includes:

- Deposition of metal and high laser damage threshold multilayer dielectric thin film coatings. High quality reflectors, polarizers, and antireflection coatings are produced by reactive evaporation with an electron-beam gun onto heated substrates. Ion-assisted deposition routinely supplements this process when required.
  - Sol-gel coating for high laser-induced threshold antireflection coatings by dipping or spinning.
  - Manufacture of liquid crystal polarizers and wave plates up to 200 mm
  - Full metrology for optical and spectral characterization of coatings.
  - Laser damage testing of substrates and coatings.
  - Ion etching of patterned structures

A wide range of materials may be evaporated in any of similarly equipped chambers: a 72-in. box coater with a 30-in. planetary, a 54-in. box coater with a 22-in. planetary, 28-in. and 25-in. box coaters with a single rotation, and a 19-in. steel bell jar chamber with single rotation. A 46" coater with a single planetary system is utilized for ion-etched work.

Characterization equipment includes an 18-in. interferometer, several spectrophotometers, and optical profilometer, a defect mapper, and microscope.

The services of the Optical Manufacturing Shop are available to any University customer. The present shop rate is $87/hour. Estimates are available by contacting Amy Rigatti. Services may be contracted for by submitting a University requisition or by approving the estimate and providing an account number to bill against by journal entry.

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