



# ELECTRA

## FACILITIES

- Repetitively Pulsed Electron Beam Pumped High Energy Lasers with 5 Hz operation 90,000+ shots continuous at 100's of Joules per shot (excimer ArF, KrF & non-excimer Ar-Xe)
- Repetitively Pulsed Cathode Tester with continuous operation capability of 10 million+ at 10 Hz
- 10 J, 3 ns Green laser for investigation of dynamics over long propagation paths (SRRS)
- UV-Vis Spectrophotometer
- Repetitively Pulsed Electron Beam Pumped Pollution Control Facility (NO<sub>x</sub>, SO<sub>x</sub>...)

## ABOUT

Electra is an electron beam pumped laser. The amplifier is pumped with two 500,000-V, 100,000-A electron beams. Each electron beam can be adjusted for application, nominally the typical dimensions are 30 cm high by 100 cm long. The electron beams are used to excite an argon-fluorine gas mixture inside a laser cell. A thin foil, supported by a structure known as a hibachi, isolates the vacuum regions from the gas inside the laser cell. A recirculator can be

utilized to both cool and quiet the laser gas between shots. This type of laser is predicted to have total wall plug efficiencies of greater than 10%. This is due to advances in the electron beam physics, laser physics, and hibachi.

The main application for this type of apparatus is development of scalable lasers for laser fusion research.

