

ELECTRO-OPTICS



The Electro-Optics (EO) Branch at the Naval Air Warfare Center, Aircraft Division (NAWCAD), Patuxent River, Maryland provides a state-of-the-art environment for the development of innovative laser technology. The facilities at NAWCAD allow experiments to be performed throughout the optical spectrum from the far infrared to the deep ultra-violet. Availability of continuous wave, narrow line width, and short pulse laser sources further enhance the branches ability to push the state-of-the-art laser radar systems for test and evaluation. These assets combined with the highly experienced staff of award winning engineers and scientists make the Electro-Optics Branch at NAWCAD one of the Navy's premier laser technology centers.

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The Navy has been at the forefront of laser technology for several decades now. Innovative applications in the fields of Anti-Submarine Warfare, Anti-Mine Warfare, Ballistic Missile Defense and Submarine Communications are revolutionizing the battle field of the future. At the center of this whirl wind of development has been the Naval Air Warfare Center, Aircraft Division (NAWCAD). The Electro-Optics (EO) Branch at the NAWCAD provides a state-of-the-art environment for the development and advancement of laser technology and techniques.



The facilities at NAWCAD allow experiments to be performed throughout the optical spectrum from the far infrared (IR) to the deep ultraviolet (UV). The brand new laboratories at Patuxent River Naval Air Station (NAS) provide over 10,000 square feet of laboratory space. The laser facility has an ample supply of 60 hertz and 400 hertz power in both single and three phase configurations. A unique 60 foot long laser test tunnel with special non-reflecting walls, ceiling, and floor provides an ideal facility for conducting sensitive laser receiver system experiments. The facility is constructed to accommodate easy access to the laboratories and facilitate rapid equipment reconfiguration. Located in close proximity to the NAS Patuxent River runways and operations center, it is served by the NAWCAD high speed information system and scientific data system with fiber optic feeds to all the lab spaces.

Availability of continuous wave (CW), narrow line width, and short pulse laser sources further enhance the branches ability to push the state-of-the-art further ahead. The labs at NAWCAD are equipped with the full compliment of advanced test equipment. A wide range of high speed data acquisition devices allows data to be gathered in digital format for post processing. A selection of powerful PCs and access to supercomputer assets allows for the complex modeling and analysis of data.

The Electro-Optics Branch has nurtured close ties with several area universities. This unique collaborative effort provides outstanding graduate students the opportunity to conduct research at a world class facility. Also, visiting university faculty members add substantially to the branches expertise base and provide unique insights into developing the technology.

The key element to the success of the Electro-Optics Branch is the experienced award winning engineers and scientists. They bring extensive expertise in fields such as laser radar design and construction; high speed large area optical detectors; laser cavity design and construction; high speed optical modulation techniques; spectroscopy; optical filter design; low noise high bandwidth amplifiers; high speed analog to digital converters; and eye safe laser technology. Over the last few years five patents have been awarded or are pending. Also, six international awards have been won by staff members.

The highly trained staff combined with the state-of-the-art facility make the Electro-Optics Branch at NAWCAD one of the Navy's premier laser technology centers.

For additional information, contact the Electro-Optics Branch at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-342-????.