NAVAIR Aircraft Platform Interface Laboratory

Laser

The Laser Laboratory is used to conduct a range of radiometric and photometric measurements including low light level measurements required for night vision devices. Special capabilities and facilities include:

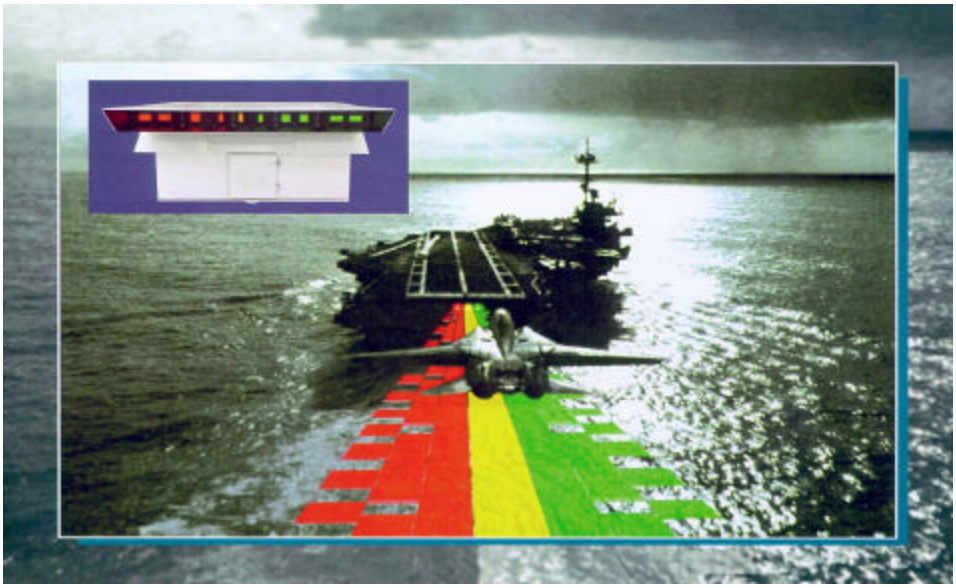
- Light tight dark room
- Uninterrupted power supply tied to the building's emergency generator
- Intelligent radiometer with a double monchromator capable of spectroradiometric measurements from 300 to 1,100 nanometers
- Spatial radiometric measurements
- Special interlock power for safety approved use of up to Class IV lasers
- Intelligent radiometer with dual detectors for easy and immediate setup changeover for low level and high intensity measurements

This high-quality dark room measures and characterizes the visible and near-infrared optical properties of light sources that range from very dim such as starlight to very bright such as laser light. The Laser Laboratory can be used to perform photometric and radiometric measurements without contamination of ambient lighting or risk of eyesight damage.

Users of the Laser Laboratory also have access to the Photometric Laboratory and the Electro-Optics Laboratory. The Photometric Laboratory has a 200-foot-long indoor range and a three-axis goniometer, which provide the capability to take photometric measurements and make three-dimensional models of the luminaire. These three-dimensional models can then be used to make accurate computer simulations. The Laser Laboratory and Electro-Optics Laboratory are co-located in the API Facility and share space, equipment, facilities, and expertise. Together, they provide full-spectrum testing capability from ultraviolet through infrared.

Laser laboratory facilities and expertise have been instrumental in developing improved visual landing aids used on board Navy ships. Pilots approaching ships at night in heavy weather are critically reliant on visual cues through approach, and landing. In addition, ship personnel must have enough illumination to perform their functions safely on a moving deck in poor weather conditions without interfering with the pilot's visual cues.

All test equipment and standards in the Laser Laboratory are traceable to National Institute of Standards and Testing (NIST) standards. The facility also meets all ANSI Z136.1 safety requirements.



The laser long-range line-up system provides pilots with information during a night-time carrier landing.

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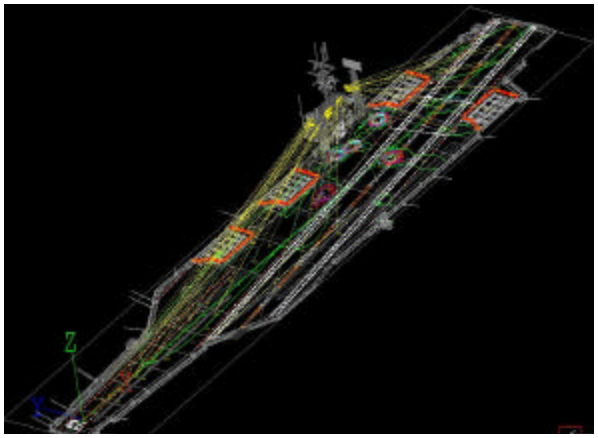
Partnering Opportunities

Several mechanisms exist for partnering with NAVAIR Lakehurst. These include cooperative research and development agreements (CRADAs), commercial services agreements (CSAs), and education partnership agreements (EPAs). Under a CRADA, Lakehurst engineers and scientists work cooperatively with their peers in industry or academia on mutually beneficial research and development. The Navy has been given statutory authorization, via CSAs, to use Navy facilities to perform specific types of work for private parties. EPAs allow collaboration between NAVAIR Lakehurst and educational institutions.

Potential Applications

The Laser Laboratory's expertise in lighting and approach systems could readily be applied to lighting systems at airports or to mark approaches at landing strips. The laboratory's facilities can also be used to support tests required in developing visual landing aids, night vision systems, or other test environments that require access to a high-quality dark room and a range of photonic measurements.



Computer model simulation programs and techniques coupled with physical goniophotometric data evaluate and simulate actual lighting conditions

For More Information

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NAVAIR Lakehurst's Aircraft Platform Interface Facility was opened in August 2002. This 66,000-square-foot research and development facility supports the Navy's aircraft launch and recovery and support equipment missions. The technical capabilities covered by the 14 laboratories in this facility include power control systems; modeling, simulation, and data analysis/management; optical and lighting systems; integrated diagnostics; component evaluation; and applied technology. The synergism provided by collocating these teams of engineers, scientists, and technicians in one building further enhances this state-of-the-art facility.

NAVAIR Lakehurst researches, develops, tests, and procures aircraft launch and recovery systems and support equipment for Navy and Marine Corps Aviation.