Laboratory Sensor Testing
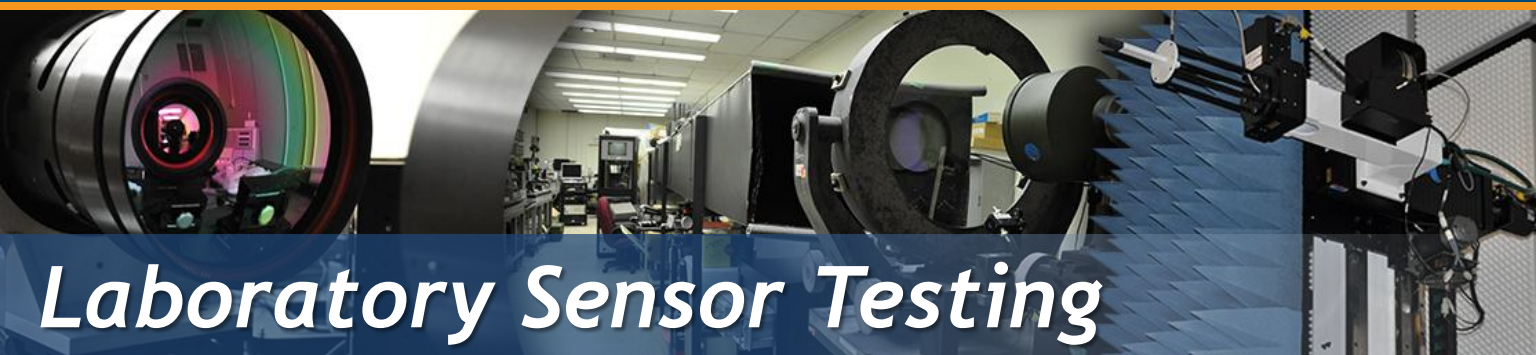
RTC provides laboratory sensor test and evaluation capabilities with subject matter expertise on assemblies, subassemblies, and components of Electro-Optic/Infrared such as Forward Looking Infrared, Direct View Optics; hyperspectral sensors; laser designators, pointers, and rangefinders; acoustic sensors, and radar components for the U.S. Army and other customers within and external to the DoD. Sensor test capabilities include instrumented data acquisition; laser scoring; image analysis; and radar/antenna measurement systems. Other Lab capabilities exist for acoustic, seismic, thermal night vision sight test, and missile seeker systems. Some specific sensor lab testing includes EO/IR sensor characterization (Minimum Resolvable Delta Temperature, Noise Equivalent Delta Temperature, Modulation Transfer Function, field of view, resolution, noise, boresight, target location error, and other parameters); laser beam parameter characterization (pulse energy, pulse width, PRF code, pulse-to-pulse time stability, missing pulses, beam divergence, boresight error); testing of FLIR, DVO & Day TV, laser, biometric, and hyperspectral sensor systems and subsystems at temperature extremes; calculations of probabilities of detection, recognition, & identification from lab or field data; interoperability testing; precision focusing, distortion mapping, non-uniformity measurement and correction; seeker/radiometer calibration; and target paint reflectivity measurements all in conjunction with extensive modeling and simulation tools.

Core Competencies

- Leader in sensor lab testing methodologies
- Target acquisition sensor measurements (boresight, MRTD, NEDT, MTF)
- Expertise with FLIR , DVO & Day TV and LRF systems
- Laser beam characterizations
- Seeker/radiometer calibration, image processing, target paint reflectivity measurements
- Non-Uniformity Correction of IR sensors, Large Format Resistive Arrays scene projectors arrays & projector systems

Capability Highlight

LASER Test Capabilities

- Power/Pulse Energy
- Wavelength
- Pulse Duration and Response Rate
- Laser Beam Profiles
- Near Field or Far Field Beam Divergence
- Probability of hit (P_H) – Use lab and field data Laser Designator Weapon System Simulation (LDWSS) model to determine P_H

Test Labs

Electro Optical/ Infrared (x2)

LASER Lab

Visible Sensor

Hyperspectral Sensor

Mobile IR Scene Projector

RADAR Near Field Ranges (x2)

Acoustic Chamber & Speakers

Non-Uniformity Correction