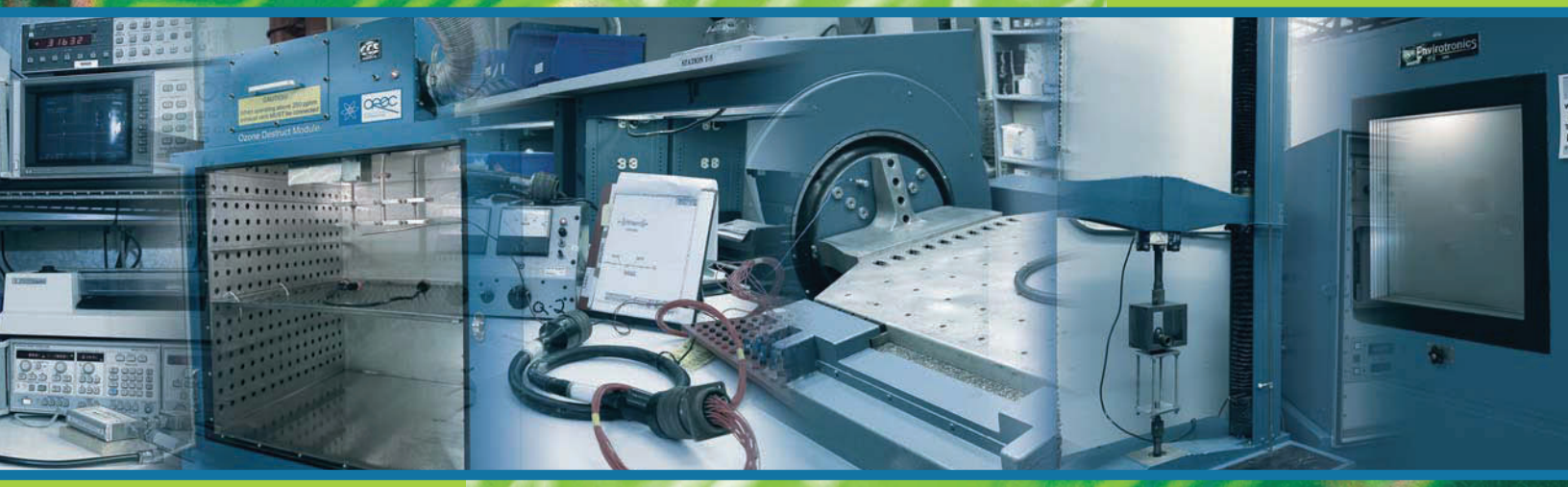
Your Partner in Demanding,

Leading Edge Electronics & Environmental Testing



UNICOR/Federal Prison Industries (FPI) operates a leading-edge, broad spectrum test laboratory capable of accomplishing your most demanding electronics and environmental test requirements.

Defense Department-Approved Laboratory

A Department of Defense-approved laboratory, the Electronics and Environmental Test Laboratory uses sophisticated equipment to perform major electronics and environmental testing for the U.S. Department of Defense, military OEMs and other high-technology customers.

Certified ISO 9001:2000 Test Provider

The laboratory, located in Littleton, Colorado, has an ISO 9001:2000 certification and is a recognized provider of induced environmental testing, climatic simulation and performance evaluation of sensitive electronic devices, plastics, rubber, textiles and other specialized products.

This state-of-the-art facility is part of the UNICOR/Federal Prison Industries Electronics Business Group, which develops mission-critical electronic components and products for the military, federal agencies, military OEMs and other commercial companies.

In operation 24 hours a day, 365 days a year, this 50,000 square-foot laboratory will provide you with timely, cost-effective and precise test solutions. Services include pre-test analysis, comprehensive test design, testing to rigorous quality standards, data analysis, report generation and engineering/re-engineering.

Our test solutions are tailored to your needs, helping ensure that your products meet demanding military or commercial standards and will provide high-quality, reliable service over their lifecycles.

Pressure & Altitude

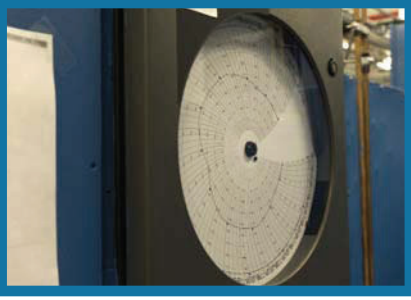
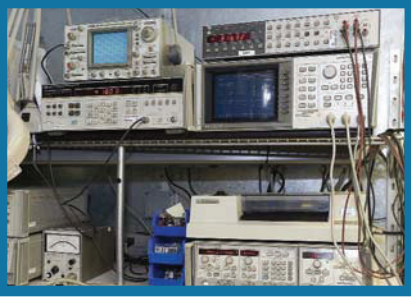


Chart Recorders



EMI & Shielding Effectiveness

Ozone

Decades of Success

Since beginning operation in 1984, the laboratory has tested thousands of different products and components under extreme environments and climatic conditions. The products we test are vital to the operation of mission-critical military equipment and instrumentation worldwide, and to security and safety applications at home. The laboratory has a very advanced tool and die testing program capable of building, fixing and testing a wide array of test apparatus and test fixtures.

The laboratory performs major environmental testing for such federal clients as the Redstone Arsenal Missile Command, Defense Supply Centers Columbus and Richmond, Warner Robbins Air Force Base, U.S. Army Tank Automotive Command, the Marine Corps, and Departments of the Army, Navy and Air Force.

Laboratory personnel have broad technical knowledge and are highly skilled at hundreds of different environmental and electronic tests and quality control processes. A staff of over 40 lab technicians, 30 support staff and 26 draftsmen ensures that customers receive the highest level of testing, evaluation and engineering/re-engineering support for their products.

Gain an Experienced, Dedicated Test Partner

UNICOR/Federal Prison Industries is looking to expand long-term partnership opportunities to commercial customers, military OEMs and government agencies that can benefit from an alliance with the Electronics and Environmental Test Laboratory and UNICOR/Federal Prison Industries Electronics Business Group.

By testing your components at our laboratory, you can reduce your company's need for expensive test equipment and additional personnel. We also have the flexibility to perform overflow testing when your laboratory has reached peak capacity, and will work closely with your staff to ensure tests are completed as you would have performed them.

In working with us, you will gain a partner that is exceptionally experienced and dedicated to your specialized testing needs. We will work with you on developing test solutions that help ensure the reliability of your products and minimize your product lifecycle costs.

Through our broad knowledge of federal procurement procedures, and military and commercial standards, we can facilitate your contracting and testing process, making it easy and convenient to work with us.

Highest Standards of Quality Control

Our Electronics and Environmental Test Laboratory maintains the highest standards of quality control throughout our operations. Our equipment is state-of-the-art, accurately calibrated and traceable to the National Institute of Standards (NIST). Each piece of equipment has a certificate of calibration and meets requirements of ANSI/NCSL Z540-1994 and ISO-10012 standards.

All testing is performed in accordance with applicable military and commercial standards, specifications, drawings, quality control standards and customer requirements.

Monitoring takes place before, during and after performance of the tests. Final test reports are written to concisely demonstrate full compliance with all detailed drawings and test specifications.

Complete test reports are prepared in line with military and commercial requirements, including test procedures used, test methods followed and data recorded for each test. Each carefully prepared report is reviewed and approved by a local on-site representative of the Department of Defense or Defense Contracts Management Agency, when required.

Environmental Testing

During its lifetime, the average component will be subjected to severe environmental stresses, such as rapid acceleration (during a missile launch), vibration (on aircraft or a tank), salt and humidity (on shipboard) and sand and dust (battlefield communications equipment).

Our purpose is to simulate environments that products could see during transportation, operation and storage to verify the robustness of a product's design and manufacturing process.

We can test components to virtually any military standards or to other customer environmental stress screening requirements.

Because we have a number of environmental chambers, we can accommodate multiple products and customers at the same time, allowing us to meet tight deadlines.

We can perform the majority of contractually required environmental tests, including:

Climatic Testing:
- Temperature, humidity, altitude, pressure, immersion, salt, fog and ozone
- Artificial aging
- Resistance to petroleum products and other chemicals
- Storage testing

Dynamic Testing:
- Shock and vibration
- Pull and compression
- Bend, twist and impact
- Impact and crush resistance
- Combined climatic and dynamic tests, such as low temperature flex
- Insert retention and strength

Facilities Include:
- Temperature and humidity chambers, ranging in size from several cubic feet for testing small components to large, walk-in units with full humidity and temperature cycling
- High-temperature walk-in oven
- Salt fog chamber
- Hydrostatic vessels
- Ozone test chamber
- Pull compression tester
- Electrodynamic and electrohydraulic shakers with sophisticated vibration control systems

Electronics Testing

Electronic devices are becoming more complex and often operate in close proximity in tactical communications equipment and on aircraft, shipboard and ground vehicles. Our tests are designed to ensure that electronic components and equipment meet stringent military and commercial standards for safe, reliable and flawless operation.

We have the expertise to screen many types of electronic devices—from passive components, such as cables and connectors, to semiconductors and integrated circuits.

Tests Include:
- Capacitance, impedance, resistance
- Electronic circuit board testing
- Electromagnetic interference (EMI) and EMI pulse
- High voltage to ground
- Fiber optic functionality
- Partial discharge
- Pre electrical baseline
- Radio frequency leakage

Facilities Include:
- Spectrum analyzers
- Trigger: free run, line, video, external, continuous and single
- Sweep oscillators
- Microwave amplifiers
- Time domain reflectometer
- Synthesizer/function generator
- Microwave frequency counter

Low Temperature Flex

Vibration & Shock

Solar Radiation

Salt Spray & Salt Fog

Value-Added Services

The laboratory's highly skilled and experienced staff can assist you with test specification development and evaluation criteria, saving you the time and cost involved in doing this yourself.

Our staff provides expert failure analysis that has helped customers with design changes that enhance the overall quality and reliability of the product.

We also prepare third-party format reports in hard and electronic formats as well as certifications of compliance and conformance.

Benefit from Leading-Edge Facilities and Services

By testing your products and components at the UNICOR/Federal Prison Industries Electronics and Environmental Test Lab, you gain access to:

- A leading-edge, broad-spectrum laboratory capable of accomplishing your most demanding electronics and environmental test requirements.
- A Department of Defense-approved lab with an ISO 9001:2000 certification.
- A recognized provider of induced environmental testing, climatic simulation and performance evaluation of sensitive electronic devices and other specialized products and materials.
- Ability to provide most electronics and environmental tests in accordance with rigorous military and commercial standards.
- State-of-the-art equipment, accurately calibrated and traceable to the National Institute of Standards (NIST); meets requirements of ANSI/NCSL Z540-1994 and ISO-10012 standards.
- Around-the-clock operating schedule and highest standards of quality control—for precision test results on tight deadlines.

Contact us for more information on how our electronics and environmental testing laboratories can become your partner in leading-edge broad spectrum product testing.

Email: electronicssales@central.unicor.gov or contact the Department of Justice Test Lab Manager: 303-980-2346.

U.S. Department of Justice
UNICOR
Federal Prison Industries, Inc.

320 First Street N.W., Building 400, Washington, D.C. 20534
The Electronics Business Group
www.unicor.gov/electronics

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