



Dynamic Testing

Dynamics testing evaluates a product's ability to withstand stresses occurring during normal and adverse operating conditions.

These tests can also include conditions found during transport and product installation.

Dynamics testing is common in commercial, industrial, aerospace and military applications.

- Acceleration Testing
- Acoustic Noise
- Classic Shock Testing
- Combined Environments
- Vibration
- Hammer Shock Testing
- Impact Testing
- Shock Testing Services
- Vibration Testing



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ISO:17025 Accredited

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Acceleration Testing

Acceleration testing is used to detect structural and mechanical strength limits in objects that experience constant acceleration. E-Labs can perform centrifuge tests to meet acceleration requirements of MIL-STD-810 method 513.5, MIL-STD-202 method 212A, MIL-STD-750 method 2006 and other specifications. Our centrifuge has multiple slip rings and RF connectors to meet all your needs. E-Labs has adjustable fixtures that allow the test item to be tilted and rotated in order to match combined load vector test requirements.

Acoustic Noise Testing

Acoustic noise occurs when sound pressure waves travel through the air and are measured in psi or decibels. We have the instrumentation to measure and analyze the sound waves produced to determine compliance to your specification.

Acoustic Noise testing is performed to MIL-STD 740 and other standards, E-Labs has performed many acoustic tests for the US Navy on submarine components, let us handle your requirements.

Classic Shock Testing

Classic Shock Testing is accomplished using many of our capabilities here at E-Labs. The typical shock testing event can be performed on our Ling Electronics 335 or UD T-508 vibration testing systems.

For tests that required higher levels or longer duration, E-Labs has additional mechanical shock testing machines. Using these shock testing facilities we can achieve custom shock levels to meet our customers' needs.

At our lab, the test item size is never an issue from small to large we can accommodate most any size unit. We can simulate such profiles as the road shock to the shock of a torpedo hitting a submarine or the side of a ship.

Combined Environments Vibration Testing

We have the flexibility to turn any of our vibration systems into combined environments, combining temperature/humidity chambers with electro-dynamic vibration shakers. The chambers can perform rapid rates of temperature change and the vibration facilities can produce up to 20,000 force-pounds, at frequencies up to 2000 Hz. The durability of the

product is tested for each individual stress and also for the combined interaction of all stresses. This will allow for quick exposure of any design or manufacturing weaknesses.

Impact Testing

The Impact Test is designed to ensure that containers and packages can withstand the abuse that occurs during shipping and handling. During shipping packages can be dropped, bumped, and bounced around in the back of a truck, or in a train car during coupling. Whether a simple drop test or a massive rail impact, at E-Labs we can test your containers so you can be sure that your product arrives intact. We cover several MIL standards and ASTM standards for impact testing.

Inclination Testing

The constant rocking that takes place on shipboard can be reproduced with the Inclination test. We have inclination testers with tables up to 36ft² (6ft x 6ft) and can rock the boat at 45° and 60° all day long.

Lightweight Hammer Shock Testing

E-Labs has lightweight hammer shock testing facilities that test the ability of shipboard installations to withstand shock loadings. These shock testing facilities are totally capable of performing MIL-5-901 test requirements.

During lightweight hammer shock testing, an article is fixed to an anvil plate which is struck by a pendulum hammer at 1, 3, and 5 foot heights. The anvil plate is struck at three orientations top, back, and side blows. Testing sequence will depend on the operating condition that is to be represented.

Shock Testing Services

Our shock testing engineers will condition, plot and help you analyze up to 128 channels of real time data - Shock Response Spectrum (SRS), Fast Fourier Transform (FFT) or modal analysis.

They will review the cause and effect of shock pulses and help in estimating damage potential based on the analytical data results. They will also be able to offer solutions for those scenarios that do not meet specifications.

Vibration Testing

Vibration testing can help validate your design to see if it will survive its intended environment. It simulates a variety of transportation scenarios, operating environments, and the effect of external vibration within a storage environment. Our vibration testing facility is comprised of multiple electrodynamic shakers capable of providing over 20,000 force pounds performing multiple types of vibration such as sine, random, sine on random, random on random and vibration analysis. They are capable of product vibration in a single as well as multiple axis configuration in order to meet your type of testing.

Test applications include transportation load simulations, fatigue due to vibration, reliability testing, squeak & rattle testing, fragility, production stress screening, and package testing, launch simulation, in flight and gunfire vibrations among others.

Since vibration testing is useful in detecting the resonant and harmonic frequencies of your product while Random vibration is useful to mimic actual field conditions.

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Loose Cargo Testing

The loose cargo test includes conditions experienced by cargo transported in a vehicle traversing irregular surfaces where the cargo has the freedom to bounce, scuff and collide with other cargo and the sides of the vehicle.

The Loose Cargo test replicates the repetitive random shock environment incurred by cargo transported under these conditions. Whether you need to ensure that your packaging can protect your product or if the product itself needs to survive these conditions unprotected, E-Labs can test it for you so that you can be confident that your product will survive these adverse conditions.

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The logo for E-LABS features the company name in a bold, italicized, sans-serif font. A thick red swoosh underline is positioned above the letters 'A', 'B', and 'S'.

www.elabsinc.com