



New Performance Testing Solutions

UL's lab in Allentown, PA has expanded to include a wide array of testing services for our customers.

Building upon our core lighting business offerings, such as LM-79, ENERGY STAR®, DesignLights Consortium® (DLC), Lighting Facts and California Energy Commission (CEC), UL's lab in Allentown now offers an expanded portfolio of performance testing services.

UL's technical experts are committed to providing testing services that meet the high expectations of any industry; from the design phase to testing, certification and even the packaging and shipping of your products, our team is available to help guide you through these extensive services.

Ingress Protection (IP) and Impact Protection (IK)

ISTA Packaging

Vibration

Retail

Photobiological

Salt Spray/Cyclic Corrosion

Thermal Shock

Ultraviolet (UV)



Ingress Protection (IP) Ratings

UL's Ingress Protection (IP) testing determines a product's resistance to water, dust and foreign objects. IP testing is an important part of determining a product's safety and functionality when installed in the field.

Ratings that demonstrate the degree of Ingress Protection are critical for enclosures and products of all types. For example, IP ratings are required per IEC/EN 60598-2-3 for all roadway and street lighting applications.

IP ratings are included in an ANSI test standard called IEC 60529 and are defined as IPXX where the first X indicates the degree of protection against solid objects and the second X indicates the degrees of protection against water.

IP Tests include: Rain, Dust, Submersion, High Pressure Spray, Foreign Object Penetration and more.

Impact Protection (IK) Ratings

Ratings that demonstrate the degree of Impact Protection (IK) are critical for enclosures and products of all types. For example, IK ratings are required in specific lighting applications when high impact glass provides protection for the enclosed lamp.

IK ratings are defined as IKXX, where "XX" is a number from 00 to 10 indicating the degrees of protection provided by electrical enclosures (including luminaires) against external mechanical impacts.

The IK rating scale identifies the ability of an enclosure to resist impact energy levels measured in joules (J). IEC 62262 specifies how the enclosure must be mounted for testing, the atmospheric conditions required, the quantity and distribution of the test impacts and the impact hammer to be used for each level of IK rating.

International Safe Transit Association (ISTA) Packaging Testing Services

UL offers packaging tests to assess the security and integrity of goods during transport, so retailers and manufacturers can feel confident that packaging is up to the job.

In our controlled environment, we can effectively mimic transportation conditions that a package might be subjected to during the distribution, handling and storage processes. We, at UL, understand how important it is that your products arrive at your customers in pristine condition.

Package Testing can provide tremendous value downstream, including cost savings and potential reductions in product loss due to breakage and damage during shipping. Secure packaging can also decrease complaints and replacement claims from retailers and customers who receive damaged products.

Testing includes: Drop, Impact, Vibration, Crush, Temperature & Humidity. UL test to ISTA; UN/DOT; ASTM; ISO; NMFC

Vibration

UL now offers customers complete vibration testing solutions for an extensive line of products in industries such as Automotive, Aerospace, Aviation, Electronics/Computer, Military, Maritime, Rail, Nuclear, Packaging, and more.

Vibration testing and mechanical shock helps ensure manufacturers that their products or materials are structurally sound and resilient enough to function properly in any operational environment.

The Vibration Laboratory hydraulic shakers include a 3 axis vertical & horizontal shake table capable of 7040 lbf in sine functions and 14080 lbf in shock. The equipment can achieve frequency responses from 5Hz to 2,800 Hz, Velocity: 78 ips, with displacement at 2" P-P.

UL can test to a wide range of industry-specific standards including: MIL-STD, ASTM, JIS, ISO, SAE, IEC and more.

Retail

UL partners with retailers and their vendors and suppliers to provide customized testing to specific retailer protocols as well as industry standards. Performance Testing, Physical Testing, and Package Testing are just a few of the types of testing that UL regularly conducts to assist manufacturers in meeting stringent retailer requirements, as well as providing retailers added assurance that their private-labeled goods are of high quality. Through evaluation and testing, UL helps verify the safety, performance, and reliability of products found on retailer's shelves.

UL understands the importance of brand protection and minimizing potential liability, and works throughout the product supply chain providing testing, audits, inspections, and sampling to elevate the overall quality of products going to market.





Whether you're a manufacturer or a retailer, UL is eager to work with you in ensuring that safe, reliable products are provided to your valued customers.

Salt Spray/Cyclic Corrosion

To help support designers and manufacturer's candidate material decisions, UL expanded its performance testing capabilities to include Salt Fog & Cyclic Corrosion.



Salt Fog Testing is required for many different product categories and is critical to material selections. This testing simply places a product or material in the chamber where it is exposed to a salt fog environment for a specified timeframe and evaluated for resistance to corrosion.

Cyclic Corrosion testing is the closest likeness to actual laboratory testing for naturally occurring corrosion and consistently gives better correlation to outdoor environments than conventional salt spray exposure. It is very effective for evaluating a variety of corrosion methods.

Test specifications include: MIL, SAE, ANSI, ASTM, ASME, ISO, DIN, JIS and Proprietary Retail Protocols

Industries serviced: Transportation, Electronics, Aerospace, Power, Defense, Plastics, Textiles, Solar, Paint, Adhesives, Steel, Marine and more.

Thermal Shock

UL's Thermal Shock (TS) testing can be extremely important when determining what candidate materials and components will be included in a product design and how they will perform over the intended design life while exposed to various harsh operating environments or applications.



TS testing involves a change of temperature over a very short timeframe and then continuing that change for many predetermined cycles. These temperatures can range from extreme heat (200 C) to extreme cold (-70 C). The TS chamber dimensions are 16" X 14.5" X 18" (W x D x H).

An example of products that will undergo severe temperature changes throughout their life cycle are components attached to an automobile's engine on a cold winter day.

Ultra Violet (UV)

When we hear "Ultraviolet (UV) Radiation" many of us think of the negative effects the sun has on our skin on a hot summer day or about the lasting effects that can happen as a result of too much exposure. On the other hand, the sun is the best natural source of vitamin D which is essential to good health.

UV can be produced from the sun or other artificial sources and is commonly used in fields such as analytics, material science and biology. The commercial, industrial, horticultural and healthcare settings use UV light for such things as curing coatings, sterilizing surfaces and the air, medical therapy, growing crops, product inspections and tanning.

UV light lends itself to a wide variety of applications. The performance and safety of devices that emit UV light is extremely important to measure and understand. Measuring both the beneficial and harmful effects of different levels of UV requires the use of highly specialized test equipment.

To provide our customers the highest accuracy UV irradiance measurements, UL uses state of the art, high-accuracy, double monochromator based UV-VIS spectroradiometers. This equipment features high sensitivity, extremely low stray light levels, narrow bandwidths, large dynamic range, and high wavelength accuracy and precision. It provides accurate spectral measurements over the 200 to 800 nm wavelength range.

Photobiological*

Exposure to optical radiations, distributed on a wide spectrum range, both in the visible and invisible field, may damage the skin and the eyes. The primary aim of the photobiological safety standards is to protect the user from the harmful effects caused by optical radiations emitted by lighting devices.

UL's laboratory is equipped with the necessary instrumentation for the performance of radiometric detection in accordance with the European and American standards, namely IEC/EN 62471 and ANSI IESNA RP 27, for the definition of the optical radiation values in the spectrum comprised between 200 nm and 3000 nm, i.e. the level of UV, IR and blue light radiations. UL also has the necessary instrumentation to perform other measurements.

**Currently this testing service is available exclusively at our sister UL performance lab in Brea, California.*



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