
Performance testing and certification services

UL Solutions has lighting laboratories all over the world, providing safety testing and performance services for our customers.



Safety. Science. Transformation.™

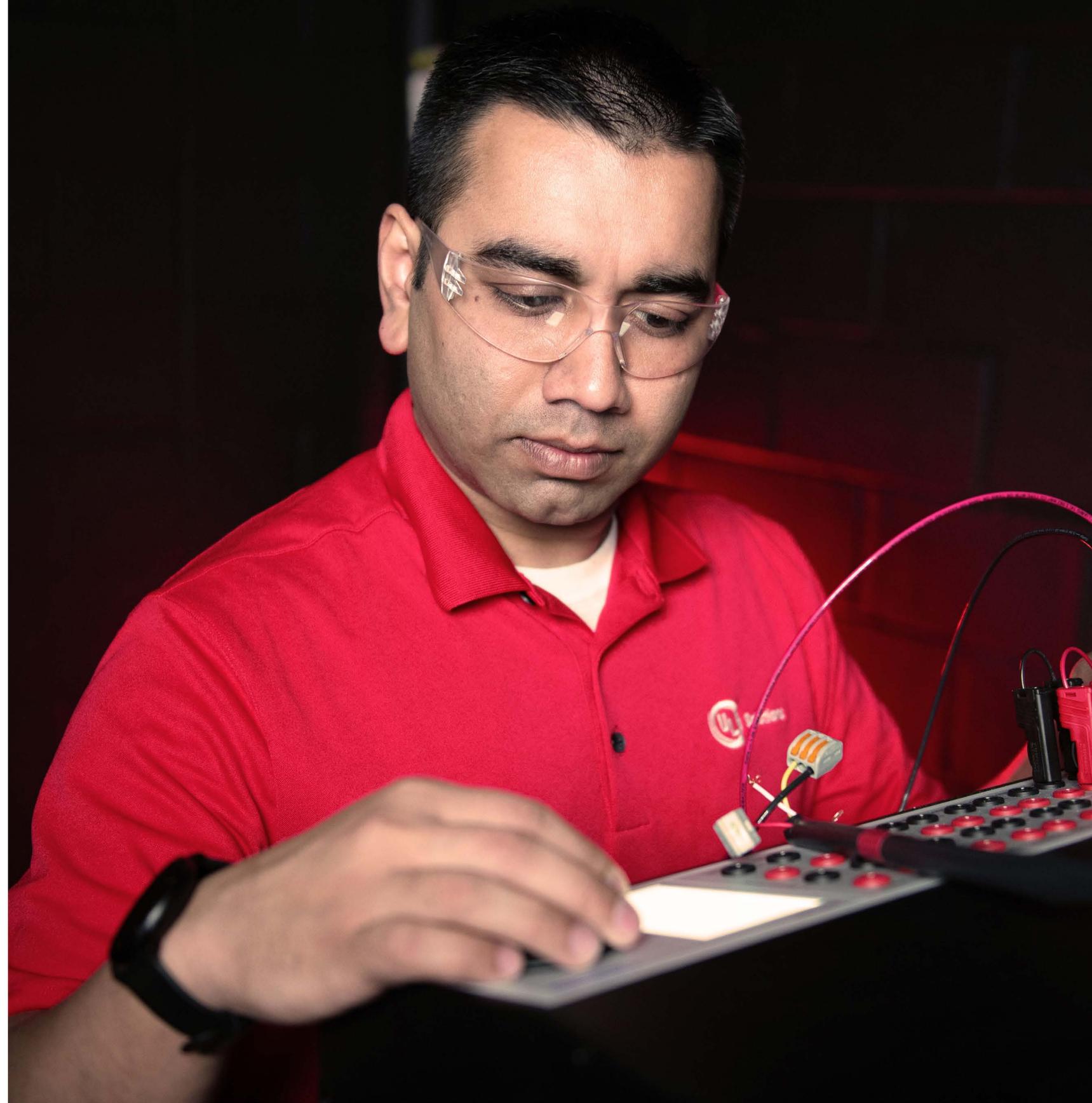


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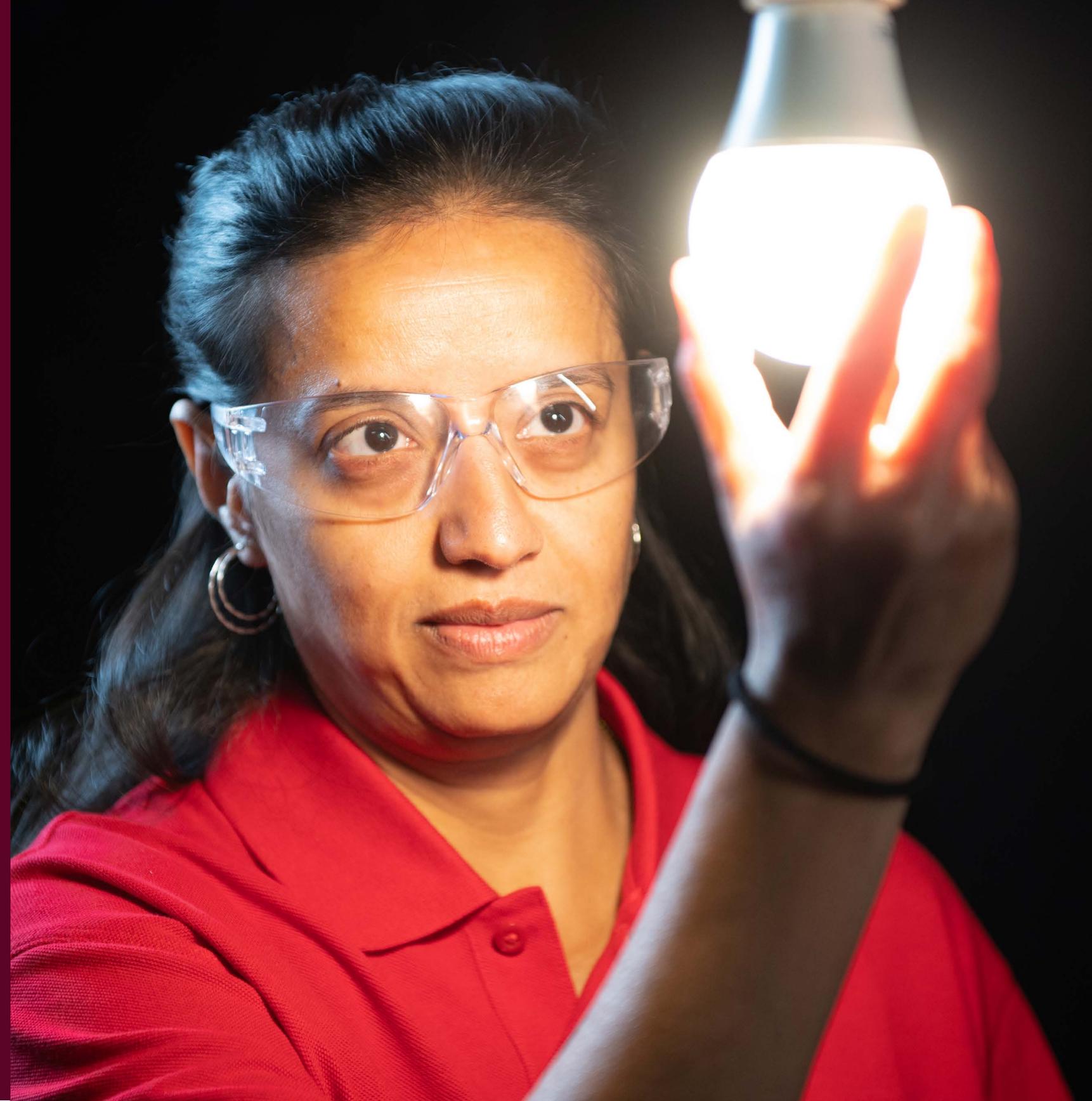
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Discover our core performance services

- A full suite of photometric, environmental and mechanical testing capabilities to ensure comprehensive evaluations
- Energy efficiency testing and certification for both residential and commercial lighting products
- Homologation testing of automotive lighting products
- Circadian effectiveness evaluations for luminaries

Our performance testing laboratories can assess a wide range of industry standards and specifications, including ANSI, ASTM, EN, IEC, IES, FMVSS, SAE, DIN and WELL Building requirements. Additionally, we can accommodate proprietary and original equipment managers (OEM) test specifications.

Exceed expectations with lighting services that go beyond industry standards, setting your products apart in a crowded market. Our experts will guide you through the process of achieving performance testing and certification step by step. Whether you require performance testing combined with safety testing or solely performance and energy efficiency evaluations, UL Solutions is here to help.

Contact us today to discuss your unique requirements and unlock the full potential of your lighting products.



Photometry program standards

We test, assess and certify to specific requirements for national and international organizations such as the Energy Star®, Environmental Protection Agency (EPA), DesignLights Consortium® (DLC), the U.S. Department of Energy (DOE) and California Energy Commission (CEC) Title 20 and Title 24/JA8, Energy Related Products (ErP, EN 1194), and PLATO FL-1.

Illuminating Engineering Society (IES) standards

We have advanced equipment for LM-79 and TM-30 measurements and calculations that assess the luminous flux and color characteristics for LED-based lighting. Additionally, our laboratories conduct lumen maintenance measurements and calculations following LM-84, TM-28, and TM-21. Our testing capabilities for photometry programs and standards also include LM-41, LM-31, LM-80, and LM-82.

Photometric equipment and services

Our world-class equipment enables us to test a wide range of performance characteristics for lighting products, such as luminaire efficiency, lumen output, correlated color, temperature testing and much more:

- **Goniophotometers (Type A and C)**
- **Integrating Spheres (up to 3m)**
- **In-Situ temperature testing (ISTMT)**
- **Transient testing**
- **Dimming, flicker and noise testing**
- **Life testing and lumen maintenance**
- **Ballast testing**





Additional performance standards

With our extensive suite of performance services, you can effectively differentiate your products in a competitive global marketplace. Our certifications and test reports help demonstrate compliance and build confidence in your lighting products. Experience our full range of services, including:

- UL Marketing Claim Verification
- Product reliability testing
- Random and sinusoidal vibration testing
- Environmental temperature and humidity chambers
- Ingress protection (IP)
- Impact testing (IK Code)
- Retail protocol testing
- Chemical analysis testing
- Thermal shock
- Salt fog and cyclic corrosion testing
- Rain spray and moisture testing
- Dust testing
- Photobiological and ultraviolet testing (UV)
- Testing to connected systems and interoperability protocols



Building on our deep industry knowledge

With our rich industry expertise and commitment to customer satisfaction, we are confident in our ability to support you in enhancing the quality and performance of your lighting products.

Benefits of working with UL Solutions engineers:

- Extensive experience in product verification and validation
- Deep understanding of lighting market dynamics and competition
- Customized services to meet your specific needs
- Commitment to quality and performance excellence



Circadian field measurement for commercial spaces

Measurements for circadian effectiveness are taken with state-of-the-art, patent-pending test and measurement equipment.

Using algorithms to analyze the test data, UL Solutions can determine the current circadian effectiveness according to the three current published models: the International WELL Building Institute, UL DG 24480, Design Guideline for Promoting Circadian Entrainment with Light for Day-Active People, and DIN TS 67600.

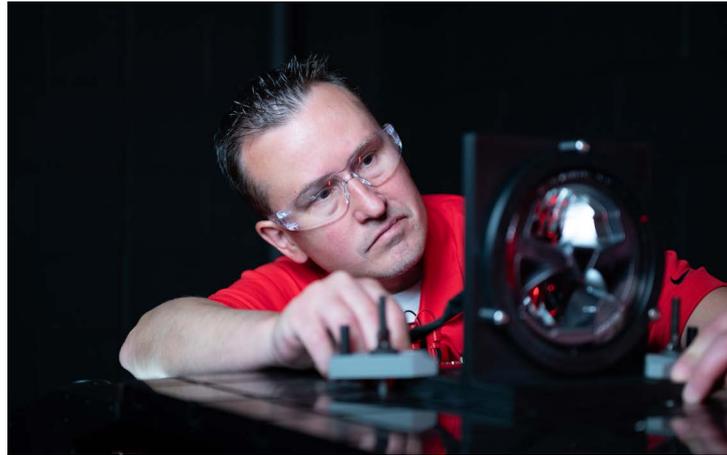


Circadian luminaire testing

Measure the spectral power distribution (SPD) at the vertical plane of the observer's retina with algorithms to report the circadian score of the luminaire. Our performance measurement service and UL Marketing Claim Verification program measure photometric characteristics for luminaire categories such as:

- Recessed troffers
- Pendants
- Wall washers
- Wall sconces
- Downlights
- Desk lamps





Automotive lighting testing

Our expert automotive lighting testing services evaluate lighting systems used in vehicles for compliance with safety and performance requirements.

- Safety testing capabilities to U.S. and Canada Federal Motor Vehicle Safety Standards (FMVSS 108 and CMVSS) for lamps, reflective devices and associated equipment
- Testing to a variety of OEM specifications and requirements, such as the AEC-Q Standard Series, IEC 60810, and JESD22 Series
- Performance testing for photometry, vibration and shock testing, environmental testing, EMC testing and more



Connected lighting testing

We test end products, components and gateways of building control systems that connect electronic devices, including:

- Lighting and appliances
- Electromagnetic compatibility (EMC) testing
- Wireless testing such as Bluetooth®, Zigbee®, Matter, Thread®, Konnex (KNX)
- Digital Addressable Lighting Interface (DALI) protocols



Horticultural lighting testing

In addition to safety testing to UL 8800, the Standard for Horticultural Lighting Equipment and Systems, we offer certification to UL S 8000, a program specifically designed for horticultural luminaire performance.

Utilizing integrating spheres, mobile spectroradiometers and goniophotometers, we provide a suite of reports specific to horticultural applications, including photometry and near-field measurements to represent intensity at the plant canopy.

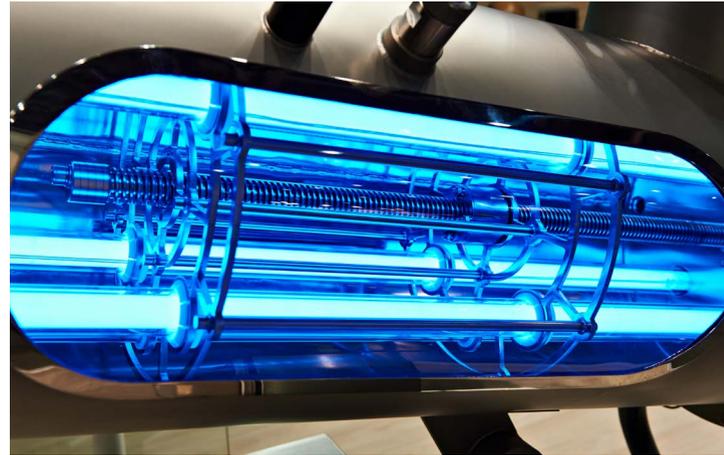


Flashlight testing

We developed UL S 8001, a program specifically designed for the portable lighting industry, aimed at validating the accuracy of performance claims made by manufacturers of:

- Flashlights
- Area lights
- Headlamps
- Bike lights
- Spotlights

UL S 8001 and the UL Mark demonstrates compliance to the certification criteria of the ANSI/PLATO FL-1 2019 standard.



Ultraviolet and UVC testing

Evaluate the performance and impact of UV damage from sunlight, rain, dew and other weathering for outdoor products.

We test Ultraviolet-C (UVC) according to relevant UL Standards, EN standards and IEC guidelines, with certification resulting in a UL Verified Mark. Tests and reports document peak UVC wavelength and maximum irradiance at specified distances and assess the photobiological risk according to IEC 62471.



UL Marketing Claim Verification

The UL Mark demonstrates verification by an independent, objective, science-based assessment and provides proof of your marketing claims. View the full list of UL Verified marketing claims through our publicly available UL Verify database.

Benefits of verification:

- Elevate your brand
- Build credibility
- Quickly bring innovative products to market
- Leverage a Mark recognized worldwide



Why UL Solutions for performance testing capabilities?

Our services are designed to support your business goals and can help you to better understand your product's performance characteristics, earn key energy efficiency certifications and differentiate your lighting products in the marketplace.

Partner with UL Solutions to leverage the advantages of:

- Localized performance testing service laboratories around the world
- Verification of product, marketing and other customized claims
- Flexibility to meet customer testing needs for emerging lighting technologies
- Evaluation and testing to the requirements of energy efficiency programs, and qualifications for the DesignLights Consortium (DLC) and their Qualified Products List (QPL)
- Ecodesign and Single Lighting Regulation (SLR) testing requirements for lighting and appliances

To learn more about our services or ask about other performance testing options, visit us at www.UL.com/lighting or contact us today.

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