
Performance Testing and Evaluation Services

UL Solutions operates HVACR laboratories all over the world, providing product safety testing and performance testing services for our customers.



Safety. Science. Transformation.™



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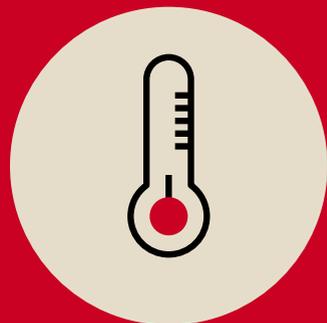
Discover our performance services

- Energy efficiency testing and performance evaluations to a wide range of industry standards
- Sound testing
- Load-based performance testing according to CSA SPE07
- Ecodesign Directive 2009/125/EC to be replaced by the Ecodesign for Sustainable Products Regulation (ESPR)
- Private R&D testing

Our performance testing laboratories are accredited to deliver performance testing for HVACR equipment that meets various global industry standards throughout the Americas, Europe, the Middle East and Asia.

Exceed expectations with HVACR services that go beyond industry standards, setting your products apart in a crowded market. Our experts will guide you through the step-by-step process of achieving performance testing and evaluations. 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 HVACR products.



Product categories

- Air Cleaners
- Air-Cooled Unitary Air Conditioners and Heat Pumps
- Air-to-Water Heat Pumps
- Automatic Commercial Ice Makers
- Boilers
- Ceiling Fans
- Central Air Conditioners and Heat Pumps
- Clothes Dryers
- Clothes Washers
- Commercial Packaged Boilers
- Computer Room Air Conditioners
- Dedicated-Purpose Pool Pumps
- Dehumidifiers
- Dishwashers
- Electric Motors
- Fans and Blowers
- Furnaces
- Microwave Ovens
- Pool Heaters
- Portable Air Conditioners
- Refrigerated Beverage Vending Machines
- Refrigeration Equipment
- Refrigeration (Miscellaneous)
- Refrigerators and Freezers
- Room Air Conditioners
- Small Electric Motors
- Variable Refrigerant Flow Air Conditioners and Heat Pumps
- Walk-in Coolers and Walk-in Freezers
- Water Heaters
- Water Heating Equipment
- Water-Cooled Unitary Air Conditioners
- Water-Source Heat Pumps



Energy efficiency

Our laboratories conduct performance evaluations for international standards of energy efficiency around the world.

The Americas

We test, assess and certify to specific requirements for national and international organizations, such as:

- Energy Star®, Environmental Protection Agency (EPA)
- U.S. Department of Energy (DOE)
- Canadian requirements, Natural Resources Canada (NRCan)
- Norma Oficial Mexicana (Official Mexican Standard, NOM)
- RETIQ regulations established by the Colombian Ministry of Mines and Energy
- El Salvador Technical Regulation (RTS)

Our advanced testing for energy efficiency measurements includes psychrometric chambers that offer testing up to 30 tons, with indoor side room temperatures from 40 F to 130 F and outdoor temperatures from -20 F to 130 F, with humidity control (20%-90% RH).

EMEA region

For the EMEA region, our test reports can help demonstrate compliance and build customer confidence in your HVACR products. We can also carry out accredited tests according to the following standards, including those for ecodesign and European energy label rating criteria.

- EN 16825
- EN 16838
- EN 16901
- EN 16902
- EN 14511
- EN 14825
- EN 16147
- IEC/EN 62552-1/2/3
- EN ISO 22041
- EN ISO 22044
- EN ISO 23953-2



United Arab Emirates

- UAES 5010-1, -5
- UAES ISO 5151
- UAES ISO 13253
- UAES ISO 15042
- QCC-PCS-ASP017.01

Saudi Arabia

- SASO GSO ISO 5151
- SASO GSO ISO 13253
- SASO 2663
- SASO 2874
- QS SASO 2681
- QS SASO 2682
- QS SASO 2663

Qatar/Saudi Arabia

- SASO/QS SASO 2681 (Non-Ducted and Heat Pumps)
- SASO/QS SASO 2682 (Ducted and Air-to-Air Heat Pumps)
- SASO/QS SASO 2663 (Energy Labelling and MEP Requirements)

APAC region

With our extensive suite of performance services, you can differentiate your products in a competitive global marketplace within the APAC region.

- China
- Japan
- Korea
- Kuwait
- Thailand
- Malaysia
- Indonesia
- Philippines
- Vietnam
- Singapore
- Australia/New Zealand

Cross-region

- ISO 5151
- ISO 13253
- ISO 15042
- ISO 16358-1,-2,-3
- ISO 3744
- ISO 3745
- WHO PQS



Building on our deep industry knowledge

With our deep industry expertise and strong commitment to customer satisfaction, we are confident in our ability to help you enhance the quality and performance of your HVACR products.

UL Solutions engineers offer benefits that include:

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



Load-based performance testing

Load-based performance testing (LBT) provides a novel way to characterize the performance of HVACR equipment.

In LBT, the controls that are integral to the equipment are allowed to operate as they were designed by the equipment manufacturers. This dynamic testing approach involves emulating a building's sensible and latent loads by adjusting temperature and humidity setpoints of the psychrometric chamber reconditioning system. This method differs sharply from historical performance testing procedures, in which the controls of the equipment are locked and the compressors and fans are forced into fixed speeds (e.g., static testing).

Proponents of LBT believe that the energy efficiency metrics that result from LBT are more representative of how the equipment operates when installed in the field, as compared to the energy efficiency metrics that have historically been used by regulatory agencies.

Research supports this belief, as an inquiry comparing LBT and static testing methods in installed equipment performance shows that LBT captures more realistic operational metrics, according to a study by the Northeast Energy Efficiency Partnerships in October 2024.





Ecodesign

Replacing the Ecodesign Directive 2009/125/EC, the Ecodesign for Sustainable Products Regulation (ESPR) aims to significantly improve the sustainability of products in the EU market. ESPR establishes a framework for ecodesign requirements impacting a wide range of products, and anticipated delegated acts will supplement the regulation by establishing specific, product-related requirements.

UL Solutions can provide ISO 17025 accredited test reports that can be used to declare EU energy efficiency values for compliance to the ESPR ecodesign and energy labeling requirements.



Sound testing

UL Solutions' sound testing involves using a free field over a reflecting plane, as well as a hemi-anechoic chamber. We use various test methods to measure the sound intensity and sound pressure of products to determine the sound power levels of those items.

We conduct sound testing of products to help companies demonstrate compliance with regulatory standards, compare similar or competitive products, and verify new product designs for engineering and internal quality control.

Appliances and heat pumps are the main focus of UL Solutions' sound testing, but other products we test include dishwashers, washing machines, refrigerators and heat pumps.



KEYMARK scheme testing

UL Solutions is an approved KEYMARK empowered certification body authorized to assess and certify heat pumps to European Standards. KEYMARK is a leading certification scheme in the European market owned by the European Committee for Standardization (CEN) and the European Electrotechnical Committee for Standardization (CENELEC).

Products that are eligible for this certification include:

- Heat pump space heaters that provide heat to water-based central heating systems for space heating purposes
- Heat pump combination heaters that provide heat to water-based central heating systems for space heating purposes and heat to domestic hot water
- Heat pump water heaters that are dedicated to providing domestic hot water

UL Marketing Claim Verification

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

Benefits of verification include:

- Elevating your brand
- Building credibility
- Bringing innovative products to market quickly
- Leveraging a Mark that's recognized worldwide



Why UL Solutions for performance testing services?

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

Partner with UL Solutions to leverage the advantages of:

- Accessing performance testing service laboratories around the world
- Verifying product, marketing and other customized claims
- Adapting to customer testing needs for emerging HVACR market trends
- Evaluating products against energy efficiency program requirements

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

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