



HVAC/R:  
Turn to UL for 360°  
global market access  
services

Empowering Trust®

# Testing and certification services

**UL supports the safety, security and energy efficiency of HVAC/R components and systems for global market access.**

Since 1894, with broad business intelligence and a deep understanding of the regulatory landscape, we provide independent, comprehensive certification, testing and verification services at state-of-the-art laboratories for professional and commercial appliances, including heating, ventilation, air conditioning and refrigeration appliances of all sizes and purposes.



# 360° provider for your market access in Europe, North America and globally



Electrical safety



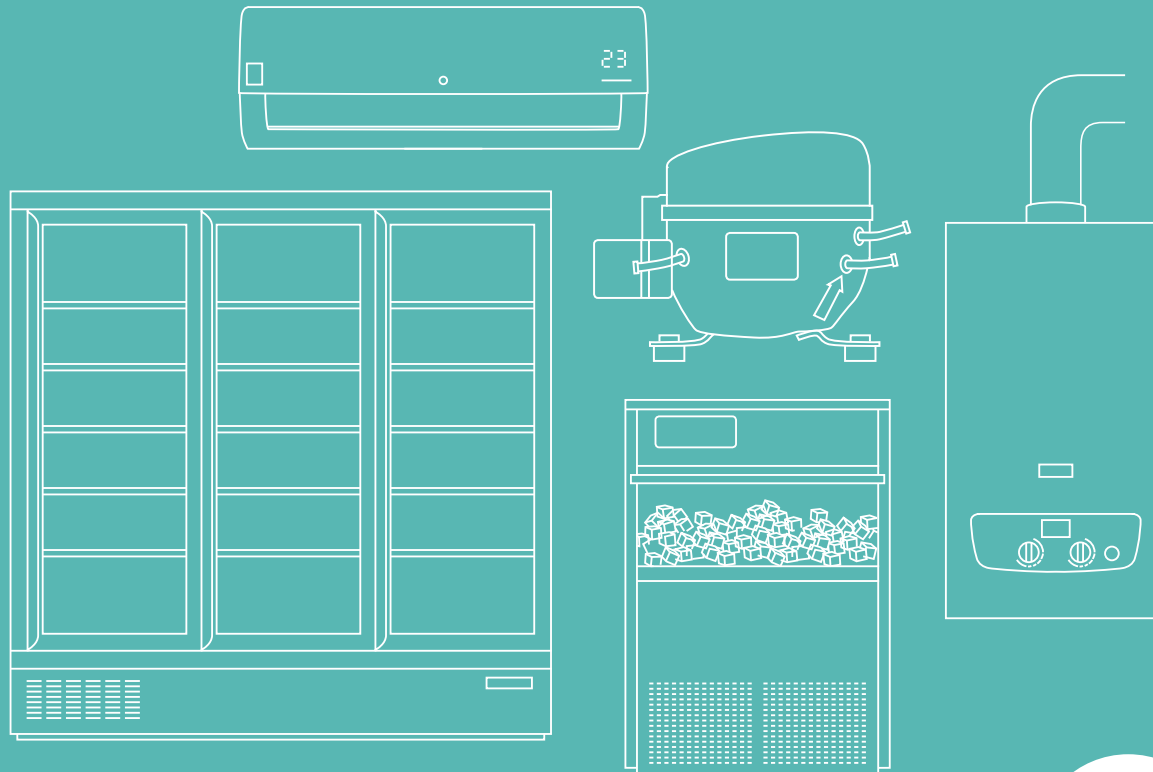
Cybersecurity



EMC/RED



Energy efficiency



Connectivity



Digital tools



Performance



Sanitation



Flammable refrigerants



Advisory services

# Get further, faster with UL



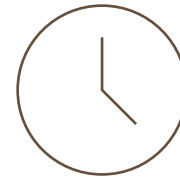
## Reach global markets faster.

As a global compliance expert, we can help you streamline your testing and certification schedule and get access to European, North American and other markets, from one local testing laboratory.



## Work with the No. 1 issuer of CB certificates.\*

We are a leading member of the IECCEB Scheme and an active driver in international committees of standards harmonization. Benefit from local testing services and a single access point for international certifications. Use our recognized CB Test Reports to obtain CB Certificates in CB Scheme member countries and many other nonmember countries.



## Reduce time-to-market and costs.

Achieve cost and time savings by collaborating with a single service provider for multiple certifications. Our broad portfolio of services enables us to offer gas-fired and electrical safety testing, food equipment sanitation, international certification, Electromagnetic Compatibility (EMC) assessment and energy certifications via a single product submittal.



## Get your innovations ready for connected markets.

Meet regulatory and industry requirements for wireless performance, connectivity and cybersecurity through independent testing and certification. We offer comprehensive product development support including engineering services, prototype reviews and reliability testing to help you bring new products to market quickly.



## Get specialized training and insights.

Benefit from a wide range of online and on-site training specifically developed for your engineers, product developers and compliance professionals.



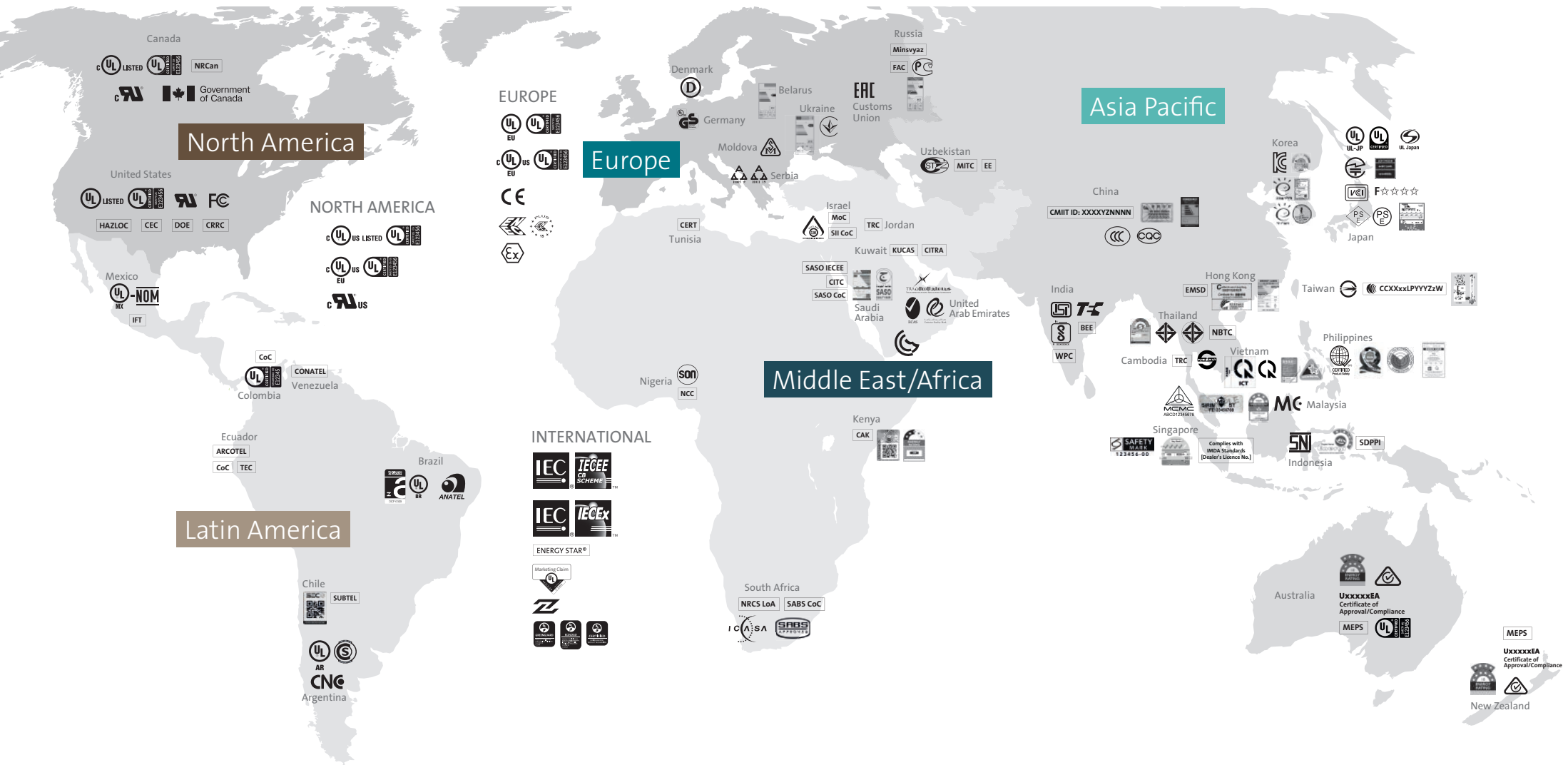
## Use one trusted contact for all your business needs.

We offer support every step of the way – including risk analysis, quality assurance, regulatory compliance reviews, energy efficiency testing and environmental certifications.

# Supporting product launches worldwide

**Access global markets faster with integrated solutions for safety, energy efficiency, EMC and wireless approvals.**

- We facilitate faster global market access through well proven global programs.
- We offer bundled services for all your target markets.



This information is subject to change due to evolving regulations and is for guidance and illustration purposes only. The map represents some of the marks and certificates that UL may be able to assist you in obtaining if your products meet all the applicable requirements.



# Electrical safety

## Getting ready for global markets

As a leading expert in safety science, we can provide certification and testing as well as market entry advisory and training services for your global access needs.

In this way, we can help you providing the tools necessary to understand the compliance and market access requirements.





## UL Certification Mark

The UL Mark is one of the most recognized, accepted and trusted certification marks. The UL Mark means that your product has successfully found to be compliant with all applicable standards. UL Marks appear on tens of billions of products globally. Throughout the world, UL is the only certification organisation authorised to issue the UL Marks.

The UL-EU Mark is the voluntary pan-European certification mark of UL intended for use in the European market. It can be combined with the UL Mark for the U.S. and Canada. The Enhanced UL Certification Mark ensures even greater transparency on the global public safety market.



## CB Scheme

The CB Scheme is the world's first truly international system for mutual acceptance of test reports and certificates, dealing with the safety of electrical and electronic products and components. It is overseen by the International Electrotechnical Committee for Conformity Testing to Standards for Electrical Equipment (IECEE).

As an expert participant, leading member of the IECEE CB Scheme and number one\* issuer of IECEE certifications in the world, UL operates as National Certified Body (NCB) in Denmark, U.S., Japan and Canada, as well as with over 50 Certified Body Testing Laboratories (CBTLs) around the world, offering our clients the proven benefit of a full-service provider for access to international markets.



## CE Marking

Placing the CE marking on a product demonstrates that the product complies with all applicable EU directives and regulations. Working with an independent third party like UL, you can accelerate your CE marking process, reinforce and expand your laboratory's testing capacity and reliability, and help your products maintain compliance with ever-changing standards.

We offer flexible, customized CE marking services to help you fulfill the Declarations of Conformity (DoC) and Technical Documentation Files (TDF). As a notified body with laboratories and CE marking experts in many European Economic Area (EEA) countries, UL has the capability to test your products to a variety of directives, including:

- Low Voltage Directive 2014/35/EU (LVD) – for appliances under scope of EN60335
- Gas Appliance Regulation 2016/426/EU (GAR)
- Energy Labelling – Regulation (EU) 2017/1369
- Ecodesign Requirements – Directive 2009/125/EC
- EMC Directive 2004/108/EC
- Radio Equipment Directive 2014/53/EU (RED)
- RoHS – Directive 2011/65/EU
- Pressure Equipment Directive 2014/68/EU
- Machinery Directive 2006/42/EC
- ATEX Directive 1999/92/EC

The services listed on this page represent only a small part of UL's scope of services. We can help you access almost all global markets. Please contact us at [AppliancesLighting.EU@ul.com](mailto:AppliancesLighting.EU@ul.com)



## G Marking

G-mark is a certification mark used to indicate products that conform to all technical regulations of the Gulf Cooperation Council and have passed all conformity assessment procedure.

The Gulf Standards Organization (GSO), responsible for this requirement, is a government level body, within which is a membership called the Gulf Cooperation Council (GCC). Access to the seven member countries for products covered by technical regulations now requires this mandatory G-Marking by law.

UL as a notified body for the Low Voltage Directive recognized by the GSO and GCC can evaluate products for the Gulf Marking (G Marking) scheme and issue the Gulf Type Examination Certificate.



## NOM

The Norma Oficial Mexicana (NOM) Certification is a set of regulations and standards that are required by the Mexican government for a number of diverse products and activities.

All products that enter Mexico must meet these requirements outlined in the specific NOM. Electrical products must meet additional mandatory requirements regarding energy efficiency.



# Flammable and PED

## Low GWP Refrigerants services

Manufacturers now face new and complex development challenges as they consider integrating lower Global Warming Potential (GWP) refrigerants into their product mix. UL, with a full portfolio of advisory, benchmarking and certification services, helps you mitigate risk, reduce product development time and achieve design goals within your project budget.

We help customers navigate the changing landscape of low GWP compliance and trade to gain access to new markets and offer safer products around the globe.

More than 100 years working with fire safety make UL to a natural expert in flammable refrigerants. During the last years, several tests with flammable refrigerants have been conducted for recognized organizations like the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and IEC. Today, UL can offer a broad range of services for customers during their product development or certification phase with flammable refrigerants, such as:

### Advisory and training services

- Flammable refrigerant basics and mitigation techniques
- Standards requirements
- Training for laboratory technicians on proper use and hazards of flammable refrigerants

### Benchmarking services

- Risk assessment
- Preliminary refrigerant leak testing
- Computational fluid dynamics (CFD) Risk-Modeling
- Verification of mitigation techniques in the presence of refrigerant

### Compliance and certifications

- Product certification to 60335-2-40, 60335-2-24, 60335-2-34 and 60335-2-89
- UL Verified Mark for marketing claim verification
- ATEX directive
- Complete CE documentation

## EU Pressure Equipment Directive (PED)

Pressure Equipment Directive (DIRECTIVE 2014/68/EC) is a mandatory European Union (EU) regulation covering the design, manufacturing and conformity assessment of pressure equipment and assemblies.

Mildly flammable (A2L) and flammable (A3) refrigerants are considered harmful gases under the EU Pressure Equipment Directive. Products that have been using non-flammable A1 refrigerants and will move to A2L or A3 refrigerants might

change to a higher PED category which will require PED certification by a notified body.

UL, an accredited Notified Body under Directive 2014/68/EU, can provide evaluation and certification around the world for pressure equipment and assemblies. The conformity assessments are performed through various evaluation procedures that apply depending on the pressure equipment category.





# Energy efficiency

## Ready for a more energy efficient global market?

Improving energy efficiency, developing clean and sustainable energy and protecting the environment are important considerations that all manufacturers must take into account if they want to remain attractive to today's socially and environmentally conscious consumers.

Since 1894, UL can help you understand the ever changing regulations, managing the growing requirements for product testing according to specific conditions.

We'll also assist you in testing and verifying product compliance.

We have the expertise and state-of-the-art testing laboratories in Europe to help you meet all your global energy efficiency requirements, including:

- North America: ENERGY STAR®
- Africa/Middle East: SASO, Gulf Conformity Mark, Egypt
- Europe: UL GS Mark

## EU Energy Label for commercial refrigerators 2021

In order to keep pace with existing energy efficiency regulations, a new EU Eco-design and Energy Labelling Regulation will come into effect in March 2021, specifying requirements for labeling and the provision of additional product information for commercial refrigerators with a direct sales function.

These are commercial refrigerated display cabinets with one or more compartments for the sale and presentation of refrigerated and frozen foodstuffs, which are kept within prescribed temperature limits and cooled by natural or forced convection through one or more energy consuming means – directly accessible through open sides or through one or more doors or drawers.

In this cluster are included:

- Supermarket refrigerators or freezers
- Beverage coolers
- Small ice freezers
- Gelato-scooping cabinets and refrigerated vending machines
- Remote and integral cabinets
- Refrigerators used for storage or assisted serving that are not accessible to customers
- Appliances for cooling of nonfood products

UL's European laboratories are already prepared to perform testing according to this new regulation as customers prepare for product certification.

# Smart ecosystems

Bring your products safely into smart ecosystems.

Known as the Internet of Things (IoT), a new generation of network-connected products has raised consumer expectations – in terms of both a product's capability and functionality.

To remain competitive, manufacturers may need to integrate complex new technologies into their product designs. At the same time, they must meet both performance expectations and compliance standards and minimize potential cybersecurity risks.

Through third-party testing for connectivity, interoperability and cybersecurity, your customers and consumers can be confident that your product has undergone rigorous evaluation for security flaws and performs as advertised in today's connected ecosystem.



## EMC/RED

### Compliance of your radio equipment applicable to Electromagnetic Compatibility (EMC)

Our European network of dedicated test facilities for EMC provides comprehensive and cost-effective assessments of electronically controlled appliances and other electronic devices that must comply with relevant local and/or regional EMC regulations.

Our state-of-the-art facilities enable us to offer an efficient EMC testing service to meet your time-to-market requirements. We can customize the EMC testing process and documentation to your specific requirements by using automated software that improves process efficiency, analyzes results and reduces test cycles and costs.

Our EMC laboratories are accredited or recognized by numerous regulatory agencies, including:

- Notified Body for EMC (2014/30/EU) and RED (2014/53/EU) Directives for Europe
- Telecommunication Certification Body (TCB) for the U.S. FCC
- Foreign Certification Body (FCB) for Canada
- Conformity Assessment Body (CAB) – Notified Body for the European Union



## Connectivity

### Testing of connected and wireless technologies

UL can conduct individual Internet of Things (IoT) certification testing or create a test plan for all use cases in real-world situations – helping you manage the risks and complex requirements of connected technologies.

Our facilities offer comprehensive testing, certification and advisory services for:

- Software performance
- Connectivity of wireless products
- Interoperability
- Usability to help ensure products connect to other devices and function in the way consumers expect

### Technologies



Wi-Fi



OCF

RF

5G



## Cybersecurity

### Solutions to strengthen security by design

According to Strategy Analytics, 38.6 billion devices will be connected by 2025, and 50 billion by 2030. However, while manufacturers are eager to go to market with Internet of Things (IoT) products, building security measures into these devices often remains an afterthought. IoT cybersecurity for connected products is a major risk that impacts manufacturers, suppliers and end application users.

Our cybersecurity services help you address and mitigate these risks through:

#### Testing

- Penetration testing
- Vulnerability evaluation
- White-box testing
- Black-box testing
- Device-to-device
- End-to-end
- Out-of-box experience

#### Compliance/Certifications

- IoT Security Rating
- UL 2900
- IEC 62443
- UL CAP Certification
- Interoperability with Amazon Alexa Voice Service (AVS)

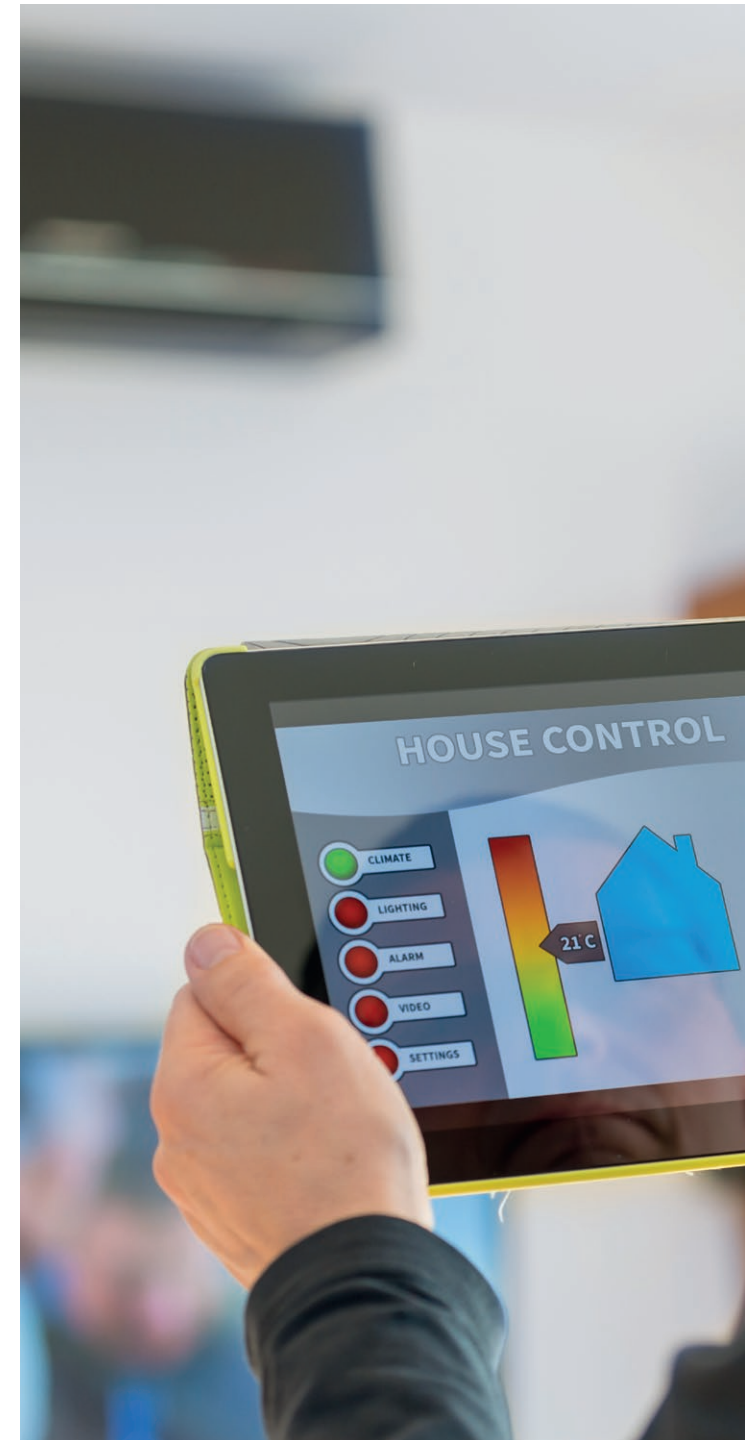
#### Advisory and training

- Training on security by design
- Security Development Lifecycle (SDL) gap analysis
- Security framework assessment
- Supplier Cyber Trust Level

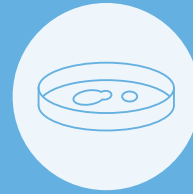
### IoT Security Rating



Our IoT Security Rating is the world's first security verification and labeling solution for consumer IoT products. The goal is to make security transparent and accessible, while supporting consumers in making informed purchasing decisions. The IoT Security Rating offers manufacturers and distributors a means to demonstrate IoT security for compliance and differentiation in the marketplace via a Verified security label.



# Sanitation



## Take care of your product's hygiene

Health and safety have become more than ever a main consumer concern. Consumers want trustworthy information that enables them to make informed product purchase choices. UL can help manufacturers deliver informed, verifiable claims to their consumers. Our UL Verified Mark helps deliver the confidence that your brand's marketing claim is accurate and credible.

In response to industry requests, UL has created several programs that verify marketing claims related to bacteria reduction. In particular manufacturers of air-conditioners with a self-cleaning feature can verify bacteria reduction performance for a given component of the air-conditioner (e.g., cooling coils, filters, etc.).

After tested and verified by UL, you will receive:

- Customized UL Verified Mark
- A summary report of evaluation results
- Authorization letter authorizing the use of UL Verified Mark
- A certificate (applicable to the verification plan)
- Guidelines for use of the UL Verified Mark on products, packaging, advertising and promotions

All UL verification information is kept in the UL verification database at [VerifyUL.com](http://VerifyUL.com).

## Sanitation certification

Commercial appliances, foodservice and catering equipment intended for the North American market must be evaluated for its sanitary design, construction and performance.

UL is an ANSI-accredited certification body for many NSF standards and can support you with laboratories in Europe and in the U.S. to evaluate products like:

- Cooking and heating appliances
- Commercial refrigerators and freezers
- Dispensing freezers (ice cream and gelato machines)
- Food and beverage dispensers
- Automatic ice-making equipment
- Bulk milk dispensers
- Ware-washing equipment (dishwashers)
- Commercial powered food preparation equipment, such as mixers and grinders
- General foodservice equipment, such as tables, pans, hoods and utensils





# Medical



## Testing services for Medical and Vaccine Refrigeration Standards

Immunization is one of the greatest success stories in global health, saving millions of lives every year from vaccine-preventable diseases.

To maintain quality, vaccines must be protected from temperature extremes; vaccine quality is maintained using a cold chain that meets specific temperature requirements.

In addition to providing testing and certification for contemporary refrigeration solutions, UL offers customized assessments for new and emerging technologies in medical and vaccine refrigeration. UL tests and provides engineering expertise related to the predominant vaccine refrigeration and laboratory equipment standards used in health care facilities such as UL, AAMI, ANSI, ASTM, ISO and IEC.

Our global capabilities allow us to evaluate and create individualized procedures to ensure your appliance is properly assessed. UL can also create custom reports based on these tests to properly present the data for your unique requirements.

We also have an accreditation with the World Health Organization for Performance, Quality and Safety (PQS) testing that prequalifies products and devices so that member states and UN purchasing agencies are assured of their suitability for use in immunization programs.

The program addresses the technical requirements of the following devices for:

- The storage of the vaccine
- The transportation of the vaccines
- The delivery of vaccines and waste disposal equipment
- Temperature monitoring

Our knowledge of global standards and regulatory requirements covers many markets, such as, FDA (US), MFDS (Korean FDA), EU IVD, EU MDD. We have helped set more than 1,600 standards defining safety, security, quality and sustainability.

# Marketing claim verification



## Add credibility to your claims with the UL Verified Mark

In today's highly connected, transparent marketplace, verification of marketing claims plays a crucial role in the decision-making process of buyers and consumers.

Performance verification opens up a world of new opportunities that can help manufacturers get an advantage over the competition by bringing credibility to a specific promotional statement.

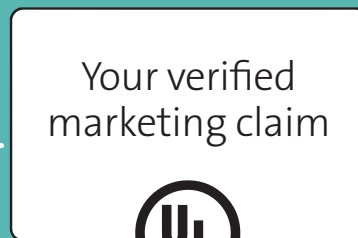
The UL Verification Mark is a marketing tool that confirms the accuracy of the marketing claims and delivers the confidence you need that a brand's marketing claim is accurate, truthful and credible.

A UL Verification program can be created for a product, process, system or facility. Our verification methodologies can be based on new or existing requirements.

For more information visit [VerifyUL.com](https://www.verifyul.com)

### Claim Module

Customizable claim language that highlights performance



### Basic Verification Mark

Indicates the claim has been tested and Verified by UL

### Unique Identifier

Enables users to look up more information about a specific marketing claim  
Verified by UL at  
[VerifyUL.com](https://www.verifyul.com).

# Advisory services



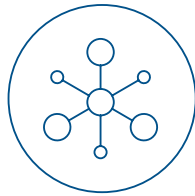
## Gain true insights to make your product development faster and more efficient

In today's global economy, organizations can gain a true competitive advantage by accelerating product development; effectively managing safety, compliance and regulatory risks, and accessing new markets.

Our advisory services deliver end-to-end solutions that empower customers to identify new opportunities, fully leverage their core competencies and achieve their business objectives.

Customers leverage UL's expertise regarding industry standards to develop strategies aimed at reducing development time and increase speed to market.

# Digital tools

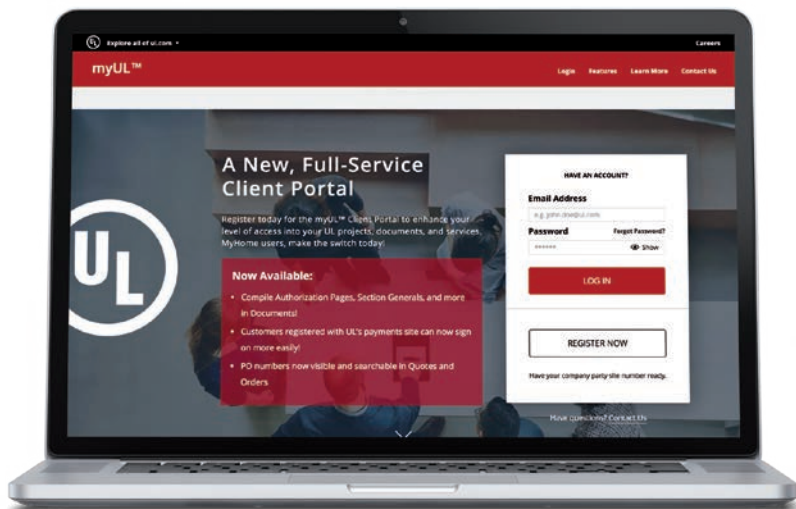


## myUL.com

### Your UL project management platform

myUL™ is a secure source for UL project files, product information, documents and services needed to make informed, data-driven decisions. With myUL™ you can:

- Gain full visibility into quotes, orders and projects.
- See when UL received product samples and when they have been returned, picked up, destroyed or archived.
- View UL reports, procedures and global certifications.
- Identify the companies responsible for your products.
- View the date, factory representative, type of product inspected, type of business, inspection center and any variation notices linked to your reports.

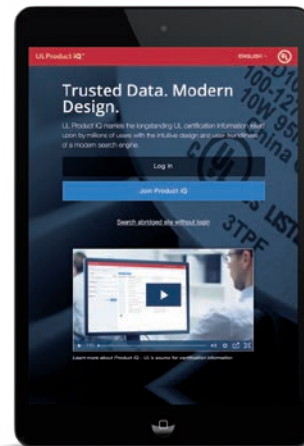


## ProductIQ.UL.com

### Promote or locate UL Certified products

UL Product iQ™ certifications platform (formerly the UL Online Certifications Directory) contains UL Listed, Classified or Recognized products and components.

This state-of-the-art search engine creates premium value for users by helping them both to identify safer, more compliant products and to promote their UL Certified products to potential buyers. Product iQ™ is considered an invaluable resource by thousands of regulatory authorities, building owners and insurance companies.



## AutoQuotes

### Product platform for the foodservice equipment and supplies industry

For over 30 years, AQ has been the most trusted and most used platform for manufacturers to list products and increase sales. With tens of thousands of users who use AQ software to configure, price, quote products, as well as integrate them into designs, listing your products on AQ is the number one way to break into the North American or U.K. markets.

Together, UL and AQ have partnered to bring access to the Commercial Food Service Equipment (FSE) Market in North America and Europe. Certify your products with UL to ensure they meet proper standards and automatically list your products in AQ to get immediate sales results in North America and Europe.

For more information visit [aq-fes.com](http://aq-fes.com)



For more information contact our:

EU sales team: **[EUSalesSupport.HALC@ul.com](mailto:EUSalesSupport.HALC@ul.com)**

EU customer service: **[AppliancesLighting.EU@ul.com](mailto:AppliancesLighting.EU@ul.com)**

**[UL.com/HVACR](https://UL.com/HVACR)**

