



# UL5000

## Helium Leak Detector

**DEFINING SPEED AND ACCURACY  
IN LEAK DETECTION**



# Highly Sensitive, Accurate, Repeatable and Exceptionally Fast.

The INFICON UL5000 Helium Leak Detector is designed to meet the most critical and demanding leak detection applications. Featuring INFICON proprietary software algorithms I-CAL and HYDRO-S in a field-proven vacuum design, the UL5000 provides testing flexibility, high sensitivity and quick accurate results making any leak detection application fast and easy.

The UL5000 delivers fast response times in all measurement ranges and extremely short cycle times in reaching test conditions and final results.

The specially designed vacuum architecture provides the continuous high helium pumping speeds and the extremely fast response times you demand.

## I-CAL\* AND HYDRO-S\*\* PROVIDE ULTRAFAST DETECTION

The UL5000 uses a special software algorithm called I-CAL to provide accurate measurements at unsurpassed speed in all measurement ranges.

While other leak detectors must average the signal over long periods of time to ensure a stable leak rate, the UL5000 with I-CAL responds with unparalleled speed and stability in all measurement ranges, including the smallest minimum leak rate ranges.

HYDRO-S improves your time to test.

Water vapor desorption in a test object creates unwanted background contamination.

HYDRO-S separates and then eliminates the water vapor contribution from the helium peak, so testing can begin sooner.

\* Intelligent Calculation Algorithm of Leak rates

\*\* HYDROgen • Suppression

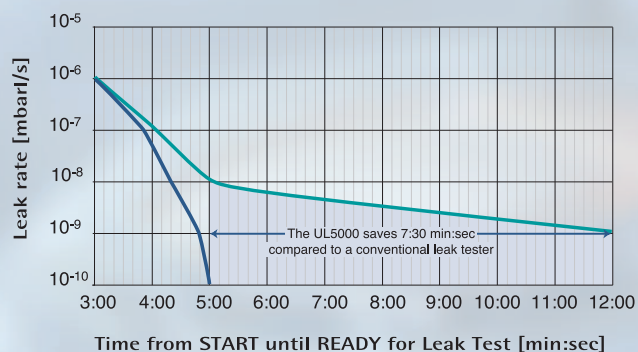
## UL5000 FEATURES AT A GLANCE

- HYDRO-S (HYDROgen-Suppression) to enable test conditions to be reached quickly.
- I-CAL (Intelligent Calculation Algorithm for Leak Rates) to ensure lightning-fast response to leaks in all measurement ranges.
- The field-proven INFICON magnetic sector mass spectrometer for years of accurate and repeatable results in a trouble-free, maintenance free design.
- A special multiple inlet turbomolecular pump that provides optimized high helium pumping speeds with high helium compression at all pressures to deliver excellent sensitivity, response and fast clean-up.
- A booster turbomolecular pump for extremely fast response on any test object including the largest volumes and chambers.
- A rotatable display / control interface and optional remote control with touch screen for wireless operation and enhanced flexibility.
- Self-protection features to protect the UL5000 from helium and particulate contamination and even an auto-purge cycle to ensure the UL5000 is ready when you need it.
- Access control to the unit and system software can be enabled via the software to prevent unauthorized use or unintended modifications to test set-ups.
- Software updates via e-mail keep your UL5000 at optimum performance.
- A new Work Station Design with an optimal height work surface that includes an ESD mat and tool box for testing convenience.

## SHORTEST TIME UNTIL TEST

The UL5000 with HYDRO-S compared to a conventional leak detector on a 100 liter volume demonstrates the dramatic improvement in time to test.

HYDRO-S reduces the time, so leak checking in the  $10^{-10}$  range can start quickly



# Fast Test. Fast Response. Fast Results.

## CONVENIENT ROTATABLE DISPLAY AND USER INTERFACE

A rotatable display and user interface on the UL5000 allows simple and easy control and interaction with the unit. The display presents measurement results and status information in large characters with excellent clarity, so that readings can be observed conveniently at a distance even in bright or low light settings. Measurement results can be presented in several user selectable formats including digital with bar graph or trend display.

The most important basic functions (Start, Stop, Zero) are available at the press of a button. More advance functions are available from the menu through an easy-to-use interface.

## INTELLIGENT VACUUM DESIGN

The UL5000 uses the INFICON market-leading magnetic sector mass spectrometer combined with a highly effective and efficient vacuum system. A special turbomolecular pump of optimized pumping speed and compression with a large, rugged roughing pump ensures the UL5000 quickly reaches leak rate levels below the rejection point, so testing may begin quickly. A booster turbomolecular pump on the inlet ensures rapid response to leaks small and large even on the largest volumes and chambers.

The UL5000 crosses over to test at very high pressures and delivers consistently high pumping speeds across all pressure ranges with excellent sensitivity. The special multiple inlet turbopump allows for optimization of minimum sensitivity detection limits for all pressure conditions in the test object.

Built-in system protection ensures the mass spectrometer and ion source are protected from air blasts, contamination and other events that can shorten filament life or compromise the integrity and cleanliness of the mass spectrometer.

## 3-YEAR ION SOURCE WARRANTY

INFICON ion sources carry a three year warranty. If the ion source fails, it is replaced for free. Consumable costs, down time and maintenance expense associated with typical ion source and filament changes are not a problem with the UL5000. All other components comprise a 24 month warranty.

## CONTROL AND DATA LOGGING VIA PC

The optional software package Leak Ware makes it possible to acquire, display and store measurement data by spreadsheet programs.



## UL5000 APPLICATIONS

- Leak testing components, subassemblies and large chambers used on semiconductor and flat panel display tools.
- Leak testing semiconductor and flat panel tools.
- Leak testing aerospace components, subassemblies and systems.
- Leak testing medical products such as pace makers, catheters, X-ray tubes and MRI systems.
- Leak testing storage vessels/storage tanks.

## MANUFACTURED FOR QUALITY

All INFICON components and leak detectors are manufactured under oil-free, cleanroom conditions for quality control. And each leak detector is quality tested to ensure your INFICON leak detector delivers optimum performance.

## DESIGNED FOR EXCELLENT PRICE/PERFORMANCE AND RESULTS

You can be confident that the UL5000 will provide the speed, accuracy and repeatable results required for even the most demanding and unique applications. Call INFICON and we'll demonstrate how proven quality and reliability can work for you.

## SPECIFICATIONS

Smallest detectable leak rate (per AVS and EN 1518)	< 5 x 10 <sup>-12</sup> mbar l/s
Largest detectable leak rate for helium	30 mbar l/s
Max. inlet pressure GROSS FINE ULTRA	15 mbar 2 mbar 0,4 mbar
Start-up time	< 4 min
Pumping speed during evacuation He pumping speed at the inlet (EN 1518)	25 m <sup>3</sup> /h (17.6 cfm) > 20 l/s (in ULTRA mode)
Time until ready for leak check* of leak rates in the range of at the inlet (without test volume) with test volume 10 l with test volume 50 l	10 <sup>-6</sup> mbar l/s    10 <sup>-9</sup> mbar l/s < 5 sec    < 10 sec < 18 sec    < 48 sec < 60 sec    < 150 sec
Response time (for a leak rate of 10 <sup>-9</sup> mbar) at the inlet with test volume 10 l with test volume 50 l	< 1 sec < 1 sec < 2 sec
Venting time (with test volume 100 l)	approx. 25 sec
Detectable masses	2, 3, 4 amu H <sub>2</sub> , <sup>3</sup> He, He
Supply voltages	100 V, 115 V, 230 V, 1200 VA
Weight	140 kg (308 lbs)
Dimensions, incl. handle (L x W x H)	1080 x 530 x 1083 mm (42.5 x 21 x 42.6 in)
*with HYDRO.S	

## ORDERING INFORMATION

UL5000, 230 volts, 50 Hz	Cat. No. 550-500
UL5000, 100/115 volts, 50/60 Hz	Cat. No. 550-501
all UL5000 including Tool box and ESD mat	
Helium bottle holder	Cat. No. 551-001
Remote control with touch screen: RC1000WL, wireless including wireless transmitter with connection cable, charger/mains adapter for integrated battery (85 - 250 V, 50/60 Hz) and 4 m spiral cable	Cat. No. 551-015
RC1000C, wired, including 4 m spiral cable	Cat. No. 551-010
Software package Leak Ware	Cat. No. 140 90



### GLOBAL HEADQUARTERS:

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Visit our website for contact information and sales offices worldwide. [www.inficon.com](http://www.inficon.com)  
Due to our continuing program of product improvements, specifications are subject to change without notice.

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