

**œrlikon**  
leybold vacuum

# **PHOENIX L300i**

## New Standards in Helium Leak Testing The next Generation



# PHOENIX L300i

## Helium Leak Detector

### A Premium Class Helium Leak Detector

**The PHOENIX L300i helium leak detector opens up new dimensions of productivity and reliability for your applications.**

The PHOENIX L300i excels through ruggedness, rapid entry into the measurement mode, high measurement accuracy and reliability as well as flexibility of use.

Being a mobile helium leak detector, the PHOENIX L300i is equally suited for use on mass production lines and service work.

It excels through its rapid entry into the measurement mode and an extremely short response time thereby fulfilling the requirements of industrial series production testing – for example in the refrigerating and air conditioning industry.

The oil-free gas inlet system allows the use of this leak detector in testing of optical systems, in analytical systems or in the semiconductor industry.

### Product Highlights

- Most compact unit in class
- Quick start up ( $\leq 2$  min)
- Extremely fast response
- High sensitivity
- Most robust and reliable ion source
- Flexible application areas
- Maximum mobility due to the wireless remote control RC 310 WL

### Modern, up-to-date Leak Detection

The PHOENIX L300i Modul is suited for leak testing large volume vessels. In combination with a partial flow pump set, the PHOENIX L300i offers leak rate measurements  $> 1000$  mbar.

In connection with the corresponding accessories, the leak detector can be operated as a sniffer leak detector.

Upon request, our application consulting department is prepared to customise the PHOENIX L300i also in response to specific customer specifications.

### Applications

- Ideal tool for industrial series production testing, like refrigerating and air conditioning industries
- Quality assurance
- Automotive industry
- Research and development
- Power plant engineering
- Analytical instruments
- Plant engineering
- Semiconductor industry
- High and ultrahigh vacuum technology

### Customer Benefits

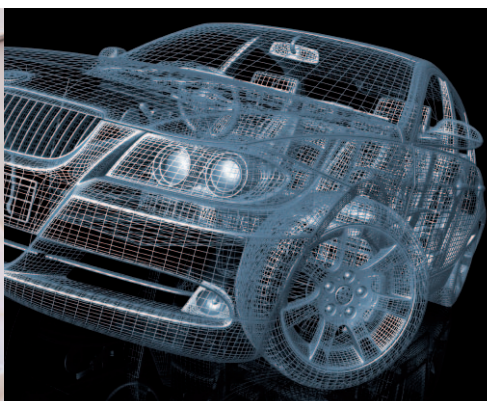
#### PHOENIX L300i

- Lowest detectable leak rate for helium  $< 5 \times 10^{-12}$  mbar l/s
- Leak detection starting at an inlet pressure of 15 mbar
- Oil-free gas admission system
- Short He recovering time ( $\leq 5$  min.)
- 10 display languages selectable
- Helium contamination trigger
- Leak rates can be displayed in refrigerant equivalents g/a, oz/yr and ppm read out in sniffer mode
- Integrated calibrated leak and automatic calibration
- 3 freely selectable trigger thresholds
- Switchable for the detection of  $H_2$ ,  $^3He$  and He
- Trend/bargraph leak rate display
- Transportation in any orientation
- Helium background suppression upon a single key press (Auto-Zero)
- Measurement range of 12 decades
- Documentation and qualification of the leak rates acc. to ISO 9000

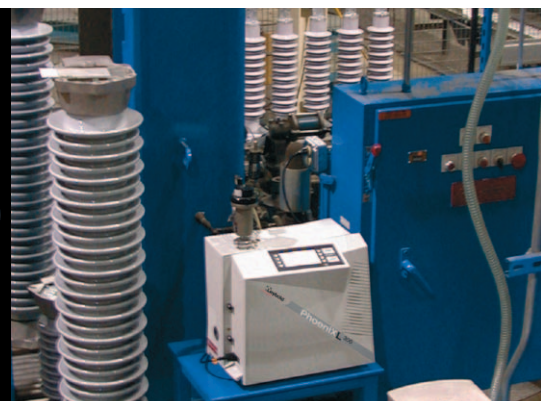
Refrigeration and air conditioning industry



Automotive industry



Electrical industry (Photo: Leak test of electrical surge arresters. By courtesy of ABB Inc., Youngwood, PA (USA))



# Professional Leak Detection - Faster and Better

## The new Generation in Helium Leak Testing



+ Detectable leak rate  $5 \cdot 10^{-12}$  mbar l/s + Wireless remote + Start-up time < 2 min.

### Additional Benefits

The Oerlikon Leybold Vacuum PHOENIX L300i helium leak detectors are so-called counterflow leak detectors which contain many well proven own components, like for example:

- Oil-sealed or dry compressing backing pumps for rapid evacuation of the device under test and for producing a high gas flow in the sniffer mode
- Turbomolecular pumps for improving the pumping speed and the helium background characteristic
- A 180° mass spectrometer with an excellent track record already in the predecessors to the PHOENIX L300i leak detector
- The optimised valve block ensures a significantly reduced recovery time after suffering helium contamination and a high pumping speed at the inlet

### Options

#### PHOENIX L300i

- Oil sealed vacuum system
- Optimized leak detector for most standard applications

#### PHOENIX L300i Dry

- Entirely oil-free vacuum system
- Integrated helium contamination protection

#### PHOENIX L300i Modul

- Additional forevacuum system, oil-sealed or dry, depending on the application
- For applications involving short cycles and/or for testing of large volumes

#### PHOENIX L300i Cart

- Modular and mobile system; the PHOENIX L300i is configured according to customer specifications depending on the demanded leak rate, timings and type of gas.

### Design Characteristics

#### PHOENIX L300i

- Newly designed operating panel and graphic display for easy and convenient operation
- Angled operating panel for easy visibility of the instrument status
- The use of exclusive special customized leak detector components result in an optimized performance
- Maintenance friendly concept – the mechanical connections have been separated from the electrical connections and have each been arranged in a protected connection strip
- Oil level glass at the housing for simple oil level checks
- Extremely long service life of the cathodes due to their Iridium/Yttrium coating
- The optional remote control unit is equally suited for right handers and left handers

# Maintenance-Friendly and Cost Effective



## + Mobile workplace systems

## + Cart versions

### Cost Effective

The PHOENIX L300i is ideally suited for the demanding tasks of industrial leak detection.

### Low Cost of Ownership

- User-friendly
- Quickly ready for operation
- Provides reliable measurement results
- Offers a high detection rate and high degree of reproducibility
- Equipped with a unique mass spectrometer
- Equipped with an ion source with two automatically switchable cathodes

### Maintenance-Friendly

The design of the PHOENIX L300i is such that all components can be accessed rapidly when maintenance becomes necessary.

The internal arrangement completely separates the mechanical from the electrical and electronic subassemblies. Thus mutual influencing and interferences are reliably avoided.

All subassemblies can be removed or replaced with ease, thereby reducing servicing downtime to a minimum.

### Workplace Versions

#### PHOENIX L340i

The PHOENIX L340i is a mobile leak testing station for testing of small series production parts in the vacuum or the sniffer mode. Based on its small footprint it fits through any standard doorway.

The integrated standard components comprise the PHOENIX L300i Modul, a power supply and controller.

Optionally, the PHOENIX L340i may be equipped with remote control.

- Mobile, convenient seated workplace
- Simple to operate
- Compact size, since only standard components are integrated
- High detection sensitivity for tracing tiny leaks
- Rapid entry in to the ready mode
- High pumping speed due to the separate backing pump
- Operation through the integrated front panel or via remote control (optional)



# PHOENIX L300i

Introducing new dimensions of productivity & reliability

## Smart Interface Technology



+ Remote control + Sniffer lines + LeakWare Software + Calibrated Leaks

## Accessories

### Remote Control

The RC 310 remote control unit with touch screen operation provides convenient control of the current leak detectors from the PHOENIX L300i series as well as predecessor models.

The RC 310 WL model allows wireless control and is supplied with a wireless transmitter and battery charging system. Should a wired operation be preferred, the RC 310 C with corresponding cable linkage is available.

- Color TFT 3.5-in. graphic display with touch screen for intuitive operation
- Up to 100 m wireless operation or up to 34 m with wired transmission
- Pushbuttons for important menu functions (Start, Stop, Zero, On/Off)
- Leak rate display selectable between numeric, bar graph, circular or trend display
- Data backup on internal 32 MB data logger (> 24 hours) or USB stick
- Ergonomic, rugged industrial design (IP42)
- Scroll function for measured data

- USB connection for data transfer and software updates
- Adjustable loudspeaker and headphone output
- Search function (paging) via audible signal
- Peak hold (max. value indication)
- For simultaneous detection of up to 10 leak detectors

### Sniffer Line SL 300/SL 301

Helium sniffer lines are used for testing objects with helium overpressure.

- Accurate pin-pointing of leaks
- Status LEDs red and green (SL 300)
- ZERO pushbutton (SL 300)
- Easy filter exchange
- Very fast response
- Extremely low detection limit  $< 1 \times 10^{-7}$  mbar l/s
- Rigid sniffer tip 120 mm
- Very rugged industrial design

### Helium Sniffer QT 100

For sniffer leak detection within larger distances up to 50 meters between test object and leak detector.

### LeakWare PC Software

Software for operating the leak detector through a PC as well as for displaying and processing the measured leak rate data. Hardware requirements: Windows Software > 486 DX, 8 MB RAM

### Partial Flow System

The PHOENIX L300i and MODUL can be supplemented by a partial flow system, providing the following benefits:

- Faster response times
- Ready to measure already at an inlet pressure of 1000 mbar
- More rapid venting of large test objects or in mass production

### Transport Case 300

For impact protected transportation or storage of the PHOENIX L300i; including strong carrying handles, plastic castors and a separate case for accessories.

### Calibrated Leaks

We provide a wide range of calibrated leaks for PHOENIX L leak detectors.

# Technical Data

## Ordering Information

Helium Leak Detector	PHOENIX	L300i	L300i Dry	L300i Modul
Lowest detectable helium leak rate				
Vacuum operation	mbar l/s	$\leq 5 \cdot 10^{-12}$	$\leq 3 \cdot 10^{-11}$	$\leq 5 \cdot 10^{-12}$ a) / $8 \cdot 10^{-12}$ b)
Sniffer operation	mbar l/s	$\leq 1 \cdot 10^{-7}$	$\leq 1 \cdot 10^{-7}$	$\leq 1 \cdot 10^{-7}$
Maximum measurable helium leak rate				
Vacuum operation	mbar l/s	> 0.1	> 0.1	> 0.1
Measurement ranges		12 decades	12 decades	12 decades
Maximum permissible inlet pressure	mbar	15	15	15
Pumping speed during pumpdown, 50 Hz/ 60 Hz	m <sup>3</sup> /h	2.5 / 3	1.6/1.8	depending on pump configuration <sup>c)</sup>
Helium pumping speed in the vacuum mode	l/s	> 2.5	> 2.5	> 2.5
Time constant for the leak rate signal	s	< 1	< 1	< 1
Time until ready for operation	min	$\leq 2$	$\leq 2$	$\leq 2$
Power consumption	VA	420	350	200 <sup>c)</sup>
Inlet flange		DN 25 KF	DN 25 KF	DN 25 KF
Dimensions (W x H x D)	mm	495 x 456 x 314	495 x 456 x 314	495 x 456 x 314
Weight	kg	40	35.5	30 <sup>c)</sup>

a) with rotary vane pump TRIVAC D 25 B 25 m<sup>3</sup>/h [50 Hz]

b) with scroll pump 30 m<sup>3</sup>/h

c) for the complete range of appropriate vacuum pumps, please refer to the Oerlikon Leybold Vacuum full line catalog, chapter leak detecting instruments.

Ordering Information	PHOENIX	L300i	L300i Dry	L300i Modul
<b>Helium leak detector</b>				
230 V, 50/60 Hz	EU model	250000V01	250001V01	250002V01*
115 V, 60 Hz	US model	251000V01	251001V01	upon request
100 V, 50/60 Hz	Japan model	251100V01	251101V01	upon request

CART 300, PHOENIX L340i, PHOENIX L320i Fab will be designed to customer requirements. Please contact us.

#### Accessories:

**Helium sniffer line** with rigid sniffer tip 120 mm

**SL 300** with LED and Zero button, 4 m cable

**SL 301**, 4 m cable

**QT 100 Helium sniffer**

**LeakWare**, data acquisition PC software

**Partial flow system**, 100 - 240 V, 50/60 Hz

Exhaust filter for partial flow system AF 16-25

Replacement ion source

**Transport case**

**Remote control**

**RC 310 C**, with connection cable (4 m)

**RC 310 WL** wireless,

  including wireless transmitter, battery charging power supply

  for integrated battery and additional connection cable (4 m)

**Wireless transmitter** with connection cable for additional leak detector operation

**Extension cable** for remote control (max. 3 extensions possible), 10 m

\* without backing pump. Alternatively oil sealed or dry forevacuum pump possible

**For detailed information and for the complete range of accessories, please refer to the Oerlikon Leybold Vacuum full line catalog.**



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