



# PHOENIX LEAK DETECTOR

Your trusted solution for finding leaks.



# The PHOENIX generation of leak detectors. Where precision meets speed, with your convenience in mind.

Often the success of any business depends on quality, and having the right tools and equipment is critical to ensuring top performance and output across R&D departments, as well as in fast-paced production and manufacturing facilities. We also see applications becoming more specialized, processes being more demanding, yet time for analysis and testing becoming less.

However, when it comes to vacuum system leak detection you can rely on Leybold and on the PHOENIX leak detectors, where precision meets speed, with your convenience in mind.

### A degree of precision

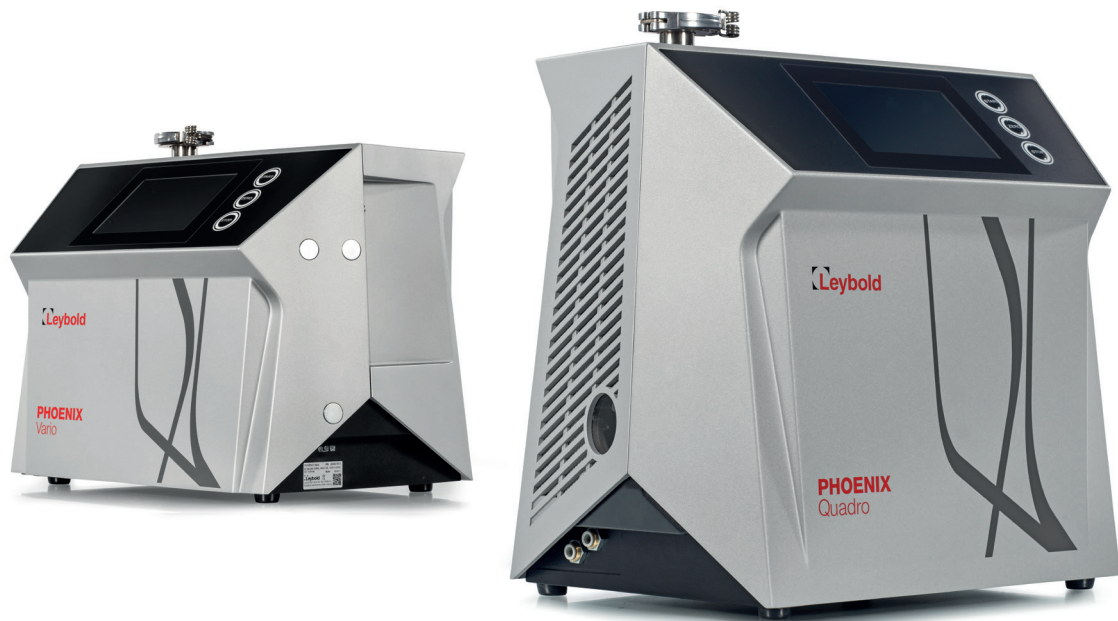
Whether you are in a research lab, or production of high-class goods, quality depends on how accurately you detect deviations. Now, help is at hand: the PHOENIX generation delivers the highest helium sensitivity for unbeatable reliability and stability.

### A level of speed

If you are looking to accelerate the leak test of your system or speed up quality control in manufacturing, time is of the essence. The PHOENIX leak detectors feature an improved measurement system with faster response times than ever before.

### A dimension of comfort and choice

The PHOENIX offers a choice of two main models, so you are sure to find the right leak detector for your needs, with simple operation, integrated touchscreen and Wi-Fi options. New software functions let you add an external display to monitor and run measurements from anywhere for added flexibility. And thanks to internal and external data logging, no measured value is ever lost.

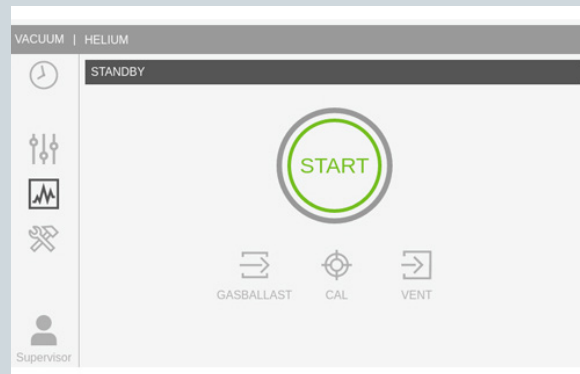


“The PHOENIX leak detector really wins you over with its outstanding accuracy, great performance and ease of use. It’s a leak detector that you enjoy working with – because it’s intuitive and gets you every leak.”

## Meet the PHOENIX

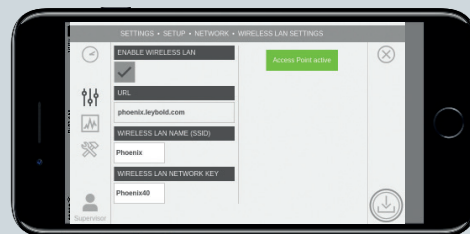
### Your benefits at a glance:

- Highest accuracy and reliability thanks to proven measurement system
- Fastest helium pumping speed allows most efficient measurements
- Consistency and convenience: Save all parameters and copy them to other PHOENIX leak detectors
- Innovative touchscreen with intuitive menu structure
- Handy and portable: very small dimensions and low weight
- Log in using Wi-Fi on your smartphone or tablet. No app or software needed!
- Easy internal and external data logging: no measured values are ever lost
- HDMI interface lets you check leaks from anywhere by adding external displays
- Find the perfect fit: two different models to better suit your needs



### A touch easier

Say goodbye to complicated menus on illegible displays. The PHOENIX has state-of-the-art multicolored touchscreens with an intuitive menu structure. Hello, ease of use!



### No fuss: easy login

The PHOENIX models are the only portable detectors on the market featuring easy login via Wi-Fi. Simply use your smartphone or tablet – no software or app to download.

### Extremely sensitive

All PHOENIX leak detectors feature an improved measurement system, with a new ULTRA mode for excellent helium sensitivity. Even the smallest leaks can be detected rapidly. The result: faster response times than ever before.





## Dozens of applications. Two strong solutions.

Whoever works with vacuum needs a leak detector. Ideally one that delivers precise results, time after time. One that offers easy data logging as well as remote operation. One that stands out by fitting in, seamlessly, to your system.

Whatever your application, our PHOENIX series has you covered.

Discover all the advantages of the latest generation!

### Research & Development

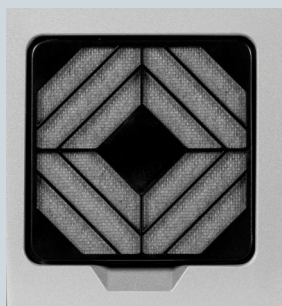
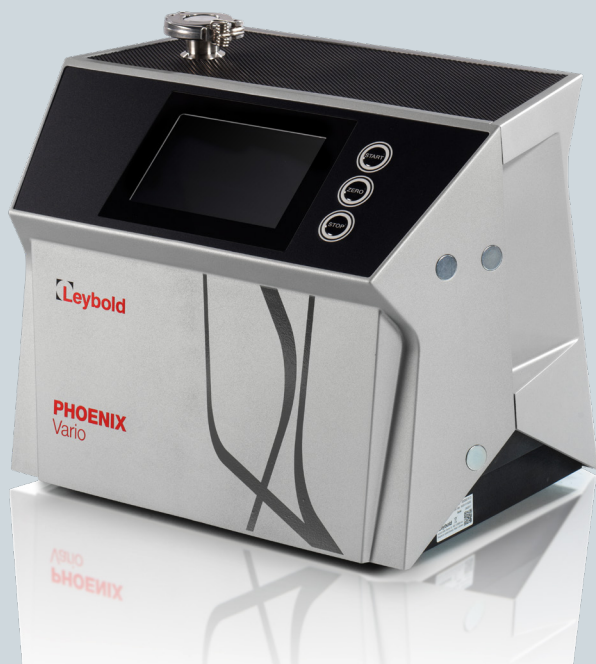
- Universities and institutes
- Research centers
- Labs
- R&D equipment manufacturing
- Compact systems enable optimum use of available space
- High mobility and flexibility
- Easy and intuitive operation
- Intelligent reminders and convenient data logging options
- Change easily between different users: Set up user profiles and log in quickly
- Change easily between different experiments: Create the test set-up and save up to 10 parameter sets
- Easy data analysis and documentation using a variety of interfaces

**Your best bet: PHOENIX Quadro or Vario on a mobile cart**

### UHV Applications

- Particle accelerators
- UHV components and systems
- Space simulation
- Smallest detectable leak rate of  $5 \times 10^{-12}$  mbar·l/s for all models
- Highest accuracy and reliability of measurements
- Very low background and intelligent zero function for quick measurements of low leak rates
- High pumping speed for fast measurements when it comes to large volumes
- Dry version meet the need for oil-free systems and processes

**PHOENIX Vario dry is an excellent choice**



The PHOENIX offers all the necessary connections for accessories including the sniffer line or the partial flow system. Furthermore, it has easily accessible USB ports and additional controlling interfaces.

We offer a range of interface modules that offer suitable communication standards for different needs. Choose between an I/O module, Profibus®, Profinet®, Devicenet® or Ethernet/IP.

The PHOENIX has an improved service and maintenance concept. The filter can be changed from the outside, without removing the cover. This lets **you save time and focus on your measurements!**

## Industrial Applications

- Industrial systems and machinery
- Metallurgy
- Industrial furnaces
- Electrical industry
- Highest pumping speed is perfectly suited for large volumes
- Harsh processes make robustness relevant: Proven industrial design with rugged components stands up to heavy use
- Big systems require remote control options: Use the RC 310 or the Wi-Fi function and log in with a smartphone or tablet
- Fast operation: Quick run-up and ready to start within seconds

**Your perfect fit: PHOENIX Vario**

## Industrial production

- Analytical instruments
- Medical devices
- Food and packaging
- Automotive and aviation
- Meet high quality expectations: Reliable measurements for consistent and highly accurate test results
- Ensure the highest level of safety: Reliable pass-or-fail decisions
- Greater efficiency: Save parameter sets for different test parts and upload them quickly and easy
- Convenient communication options and various interfaces
- Highest helium pumping speed for fast cycling

**PHOENIX Quadro dry is the ideal here**

## Semiconductor

- Semiconductor fabrication
- Flat panel display
- Time-saving measurements: Quick to start up, ready to go within seconds
- Small systems offer highest mobility in large facilities
- Outstanding accuracy and repeatability for reliable leak rate measurements

**Choose PHOENIX Quadro dry or PHOENIX Vario**

## PHOENIX Leak Detector

# Find your perfect PHOENIX

Meet our features and decide which one suits your application best.



### The PHOENIX Quadro and Quadro dry

- Available with oil-sealed or dry backing pump
- Detection sensitivity improved by turbo pump's optimized helium pumping speed
- Pumping speed during evacuation from 2.5 m³/h up to 3 m³/h
- More data flexibility: USB and bus interface options

### The PHOENIX Vario

- The modular version with a much smaller housing
- Space-saving and portable, very light in weight
- Ideal for systems integration or mobile operations (on a cart)
- Direct electrical connection to the external backing pump possible

Technical data	PHOENIX Quadro	PHOENIX Quadro dry	PHOENIX Vario
Smallest detectable helium leak rate			
Vacuum operation	$\leq 5 \cdot 10^{-12}$ mbar · l · s <sup>-1</sup>		$\leq 5 \cdot 10^{-12}$ mbar · l · s <sup>-1</sup>
Sniffer mode	$< 1 \cdot 10^{-9}$ mbar · l · s <sup>-1</sup> (*)		$< 1 \cdot 10^{-9}$ mbar · l · s <sup>-1</sup> (*)
Smallest detectable hydrogen leak rate			
Vacuum operation	$\leq 1 \cdot 10^{-8}$ mbar · l · s <sup>-1</sup>		$\leq 1 \cdot 10^{-8}$ mbar · l · s <sup>-1</sup>
Sniffer mode	$< 1 \cdot 10^{-7}$ mbar · l · s <sup>-1</sup>		$< 1 \cdot 10^{-7}$ mbar · l · s <sup>-1</sup>
Units of measurement (selectable)			
Pressure	mbar, Pa, atm, Torr		mbar, Pa, atm, Torr
Leak rate	mbar · l · s <sup>-1</sup> , Pa · m³ · s <sup>-1</sup> , Torr · l · s <sup>-1</sup> , atm · cc · sec <sup>-1</sup> , sft³/yr		mbar · l · s <sup>-1</sup> , Pa · m³ · s <sup>-1</sup> , Torr · l · s <sup>-1</sup> , atm · cc · sec <sup>-1</sup> , sft³/yr
Sniffer mode	ppm, g/a eq, oz/yr eq		ppm, g/a eq, oz/yr eq
Leak rate display area	mbar · l · s <sup>-1</sup>	$1 \cdot 10^{-12}$ to $1 \cdot 10^{-1}$	$1 \cdot 10^{-12}$ to $1 \cdot 10^{-1}$
Max. inlet pressure	mbar	15	15
with partial flow pump set	mbar	1000	1000
Pumping speed during evacuation process			Depending on chosen backing pump
50 Hz	m³ · h <sup>-1</sup>	2.5	3.0
60 Hz	m³ · h <sup>-1</sup>	3.0	3.0
Helium pumping speed in vacuum mode			
GROSS Modus	l/s	0.4	0.04
FINE Modus	l/s	1.2	1.2
ULTRA Modus	l/s	> 3.1	> 3.1
Time constant of the leak signal (blank flanged, 63% of the final value)	s	< 1	< 1
Run-up time (after switching on)	s	≤ 110	≤ 110
Mass spectrometer		180° magnetic sector field	180° magnetic sector field
Ion source		2 yttrium/iridium long-term cathodes	2 yttrium/iridium long-term cathodes
Detectable masses	amu	2, 3 and 4	2, 3 and 4
Backing pump flange			2 x DN 25 ISO-KF
Inlet flange	DN	25 ISO-KF	25 ISO-KF
Dimensions (W x H x D) mm		495 x 475 x 318	486 x 380 x 313
Weight	kg	41	35
Available languages		English, German, Chinese, Japanese (Katakana), Korean, Russian, French, Italian, Spanish and Polish	English, German, Chinese, Japanese (Katakana), Korean, Russian, French, Italian, Spanish and Polish

Order data	PHOENIX Quadro	PHOENIX Quadro dry	PHOENIX Vario
	Part no.	Part no.	Part no.
PHOENIX Quadro EU 230 V, 50/60 Hz	250000V02	–	
PHOENIX Quadro US 115 V, 60 Hz	251000V02	–	
PHOENIX Quadro JP 100 V, 60 Hz	251100V02	–	
PHOENIX Quadro 100 – 240 V, 50/60 Hz	–	250001V02	
PHOENIX Vario			250002V02

(\*) Depending on the used sniffer line and ambient conditions. Leak rate display after zero:  $1 \cdot 10^{-8}$  mbar·l/s when using the SL 300 or SL 301 Sniffer line.



Pioneering products. Passionately applied.