# LDS Arnova
# Argon & Air Leak Detector

**As economical as pressure testing.**
**As precise as tracer gas.**

INFICON

# Precision Redefined with Air and Argon

## The new benchmark in mass-production leak testing.

**INFICON introduces a breakthrough that eliminates the traditional trade-off between cost and performance: LDS Arnova delivers tracer-gas precision using everyday, the low cost gas Argon or even cost free ambient air**

**Experience the first system that truly offers pressure-testing economics with helium-class sensitivity.**

Manufacturers face rising quality requirements while helium costs and supply risks continue to fluctuate. LDS Arnova removes this dependency, delivering tracer-gas-level precision using low-cost, readily available gases such as argon or even ambient air.

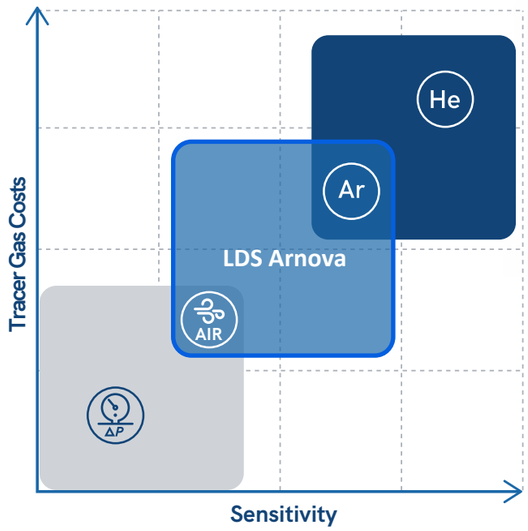
With regard to operational reliability and long-term cost control, LDS Arnova provides a future-proof way to increase testing performance while reducing exposure to volatile resources.

Built on the proven LDS3000 platform, LDS Arnova combines pressure-test affordability with tracer-gas sensitivity. It delivers up to 1 x $10^{-6}$ mbar·l/s detection, fast cycle times, and robust repeatability in industrial environments.

This makes it ideal for replacing pressure testing systems that lack sufficient accuracy or helium systems, which are often too precise for many applications and for which there have been no alternatives until now.

### ADVANTAGES AT A GLANCE

- ✓ Precision in Leak Detection: Best accuracy and repeatability for alternative tracer gas and air. ensuring accurate and reliable results.
- ✓ Effortless Integration: Benefit from a compact design and wide communication options, along with compatibility with the reliable and established LDS3000 interface logic, making integration fast and simple.
- ✓ Enhanced Throughput: Experience stable and fast cycle, leading to higher throughput and efficiency. The inclusion of the EcoBoost function further optimizes performance.
- ✓ Safe and Versatile Testing: Utilize safe, inert test gases like air and argon, without the need for special safety zones, while maintaining the best accuracy and repeatability for alternative tracer gases.




Comparison of sensitivity levels: Pressure testing vs. LDS gas leak detection.

### ROBUST, HIGH-EFFICIENCY TURBOMOLECULAR PUMP

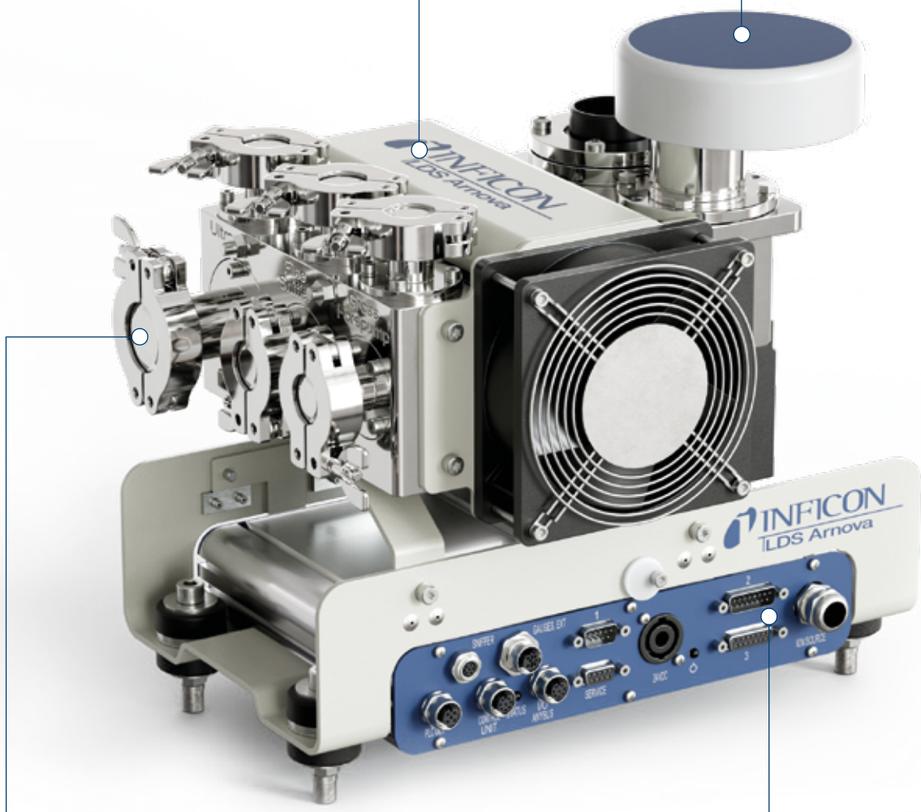
Engineered for peak performance in challenging environments.

Its robust design ensures reliable operation and minimal maintenance, while providing rapid pump-down and supporting precise leak detection.

### INFICON'S HIGH-PRECISION MASS SPECTROMETER

Engineered for maximum sensitivity and precision, the mass spectrometer at the core of the LDS3000 delivers outstanding performance.

Its advanced technology and robust design optimize production while maintaining high quality standards.




### CONNECTION BLOCK

A masterpiece of versatility and precision with its gross, fine, and ultra connections, it offers tailored solutions for a wide range of applications.

### INTEGRATED MSB BOX

In conjunction with the I/O 1000 and BM1000 modules, it offers versatile connection options for seamless integration with existing systems and efficient operation.

# Testing with Argon vs. Helium

## Argon vs. helium — The economical tracer-gas alternative

Alternative argon provides a powerful combination of availability, cost efficiency, and measurement stability, making it an ideal tracer gas for many helium-based applications. As a naturally occurring component of the atmosphere, argon is widely available and unaffected by supply shortages or market volatility. Its cost advantage is substantial—argon is typically dozens of times cheaper than helium—which dramatically lowers operating costs in high-volume production.

Despite being more economical, argon remains fully compatible with mass-spectrometric detection. LDS Arnova uses this to deliver tracer-gas-level sensitivity without the infrastructural complexity of traditional helium systems.

In addition, argon provides stable, repeatable measurement behavior. Its larger molecular mass (40 amu vs. helium's 4 amu) contributes to consistent diffusion characteristics, supporting reliable detection performance in industrial environments.

LDS Arnova leverages the proven control philosophy of the LDS3000 platform, ensuring that system integrators can implement it quickly and confidently.

**YOUR BENEFITS USING ARGON**

- ✓ Replaces helium leak detection for applications with leak-tightness requirements up to $1\times10^{-6}$ mbar·l/s
- ✓ Reduces production cost through significantly lower tracer-gas expense
- ✓ Increases production availability with a stable, widely available alternative tracer gas
- ✓ No investment, maintenance, or floor space needed for helium recovery systems
- ✓ Full backward compatibility: System can always be upgraded to an LDS3000 if performance requirements change

With its flexible communication interfaces and modular connectivity, LDS Arnova adapts naturally to existing production ecosystems.

Its durable design and long maintenance intervals help manufacturers achieve high uptime and stable long-term operation.

## Why Argon Works So Well as a Substitute for Helium

Argon integrates seamlessly into existing leak-testing processes while eliminating many of the drawbacks associated with helium systems. Its lower cost allows manufacturers to maintain frequent, high-volume testing without budget pressure.

Argon-based testing also simplifies infrastructure: there is no need for complex recovery systems, and production is safeguarded against helium price spikes or supply disruptions.

For applications that require stable and repeatable performance, but not the ultra-high sensitivity of deep-vacuum helium systems, argon offers the perfect balance of accuracy, availability, and operational efficiency.

With LDS Arnova, manufacturers gain a testing platform that is both economically sustainable and technically robust.

# Air as Tracer Gas - The Efficient alternative for Pressure Testing

## Using Air Instead of Pressure Testing — Precision Through Simplicity

Introducing air as a tracer gas revolutionizes the landscape of pressure testing by offering a solution that matches the cost-effectiveness of traditional methods while providing enhanced reliability and sensitivity. In applications where precision and consistency are paramount, air emerges as a more dependable choice, ensuring faster and more accurate results without increasing operational expenses.

Air, as a tracer gas, seamlessly integrates with mass-spectrometric detection systems, delivering stable and repeatable measurements. This compatibility ensures that industrial applications benefit from precise and consistent performance, making air not only a cost-effective choice but also a technically superior one.

**YOUR BENEFITS USING AIR**

- ✓ Increase product quality with fewer external influences (temperature, humidity, pressure)
- ✓ Higher accuracy and repeatability
- ✓ Higher throughput through reduced test times
- ✓ Reduced production space due to faster cycle times
- ✓ No vacuum system required for specimen evacuation

By leveraging air's inherent advantages, manufacturers can achieve high-quality outcomes with the same financial efficiency as traditional pressure testing methods.

## Air Testing for Efficient, Robust Production

Air integrates seamlessly into existing leak-testing processes while overcoming many of the limitations associated with traditional pressure testing methods.

As a cost-free resource, air allows manufacturers to conduct frequent, high-volume testing without financial constraints. Air-based testing simplifies infrastructure requirements, eliminating the need for complex systems and safeguarding production against the inefficiencies of traditional methods.

For applications that require stable and repeatable performance, air offers the perfect balance of reliability, availability, and operational efficiency.

Unlike pressure testing methods, which can be slow and less sensitive, air provides faster and more accurate results without increasing operational costs.

With LDS Arnova, manufacturers gain a testing platform that is both economically sustainable and technically robust, ensuring high-quality outcomes in mass production environments.

| TECHNICAL DATA | |
|---|---|
| Minimum detectable leak rate for Air:<br>Minimum detectable leak rate for Argon: | $1 \cdot 10^{-4}$ mbar l/s<br>$1 \cdot 10^{-6}$ mbar l/s |
| Units of measurement (options) | mbar l/s, Pa m3/s, atm cc/s, g/a, ppm |
| Maximum permissible inlet pressure:<br>"Gross" mode<br>"Fine" mode<br>"Ultra" mode | <br>18 mbar<br>0.9 mbar<br>0.2 mbar |
| Response time | < 1 s |
| Ion source | 2 yttrium/iridium long-life cathodes (3 year warranty) |
| Digital inputs/outputs | 10 inputs, 8 outputs (when used with I/O1000 module) |
| Control input | PLC-compatible (max. 35 V) |
| Lin/log recorder output | 0 - 10 V |
| Serial interface | RS232, RS485 or field bus systems |
| Dimensions (L x W x H) | 320 x 240 x 280 mm |
| Ambient temperature (operation) | 10 - 45°C |
| Warranty | 2 years (3 years on ion source) |

| ORDERING INFORMATION | |
|---|---|
| Base units | |
| **PRODUCT** | **CAT.-NO.** |
| LDS Arnova, base unit | 560-500 |
| IO1000 module (input/output module) | 560-310 |
| BM1000 bus module (Profibus)<br>Other bus modules upon request | 560-315 |
| Data cable (MSB-IO1000)<br>2 m cable length<br>5 m cable length<br>10 m cable length | <br>560-332<br>560-335<br>560-340 |
| **OPTIONS** | |
| CU1000 control unit | 560-320 |
| Snap-on mounting rail power supply unit 24 V, 10 A | 560-324 |
| Argon Calibration Leak Type TL4 | 561-501 |
| Customized leaks | upon request |

An IO1000 module or BM1000 module as well as a data cable are necessary for the operation of an LDS Arnova.
The data cables can be used for connecting to an IO1000 module or a BM1000 bus module and the CU1000 control unit.

ISO 14001
ISO 9001

## INNOVATION THROUGH PROVEN, PATENTED TECHNOLOGY

At INFICON, we know that technology leadership is not possible without innovation leadership. That is why we develop and implement pioneering solutions that enable our customers to master the future challenges of their industry with confidence.

INFICON Inspired by visions. Proven by success.

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Due to our continuing program of product improvements, specifications are subject to change without prior notice.
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