ASM 122 D

Portable dry leak detector
compact and powerful

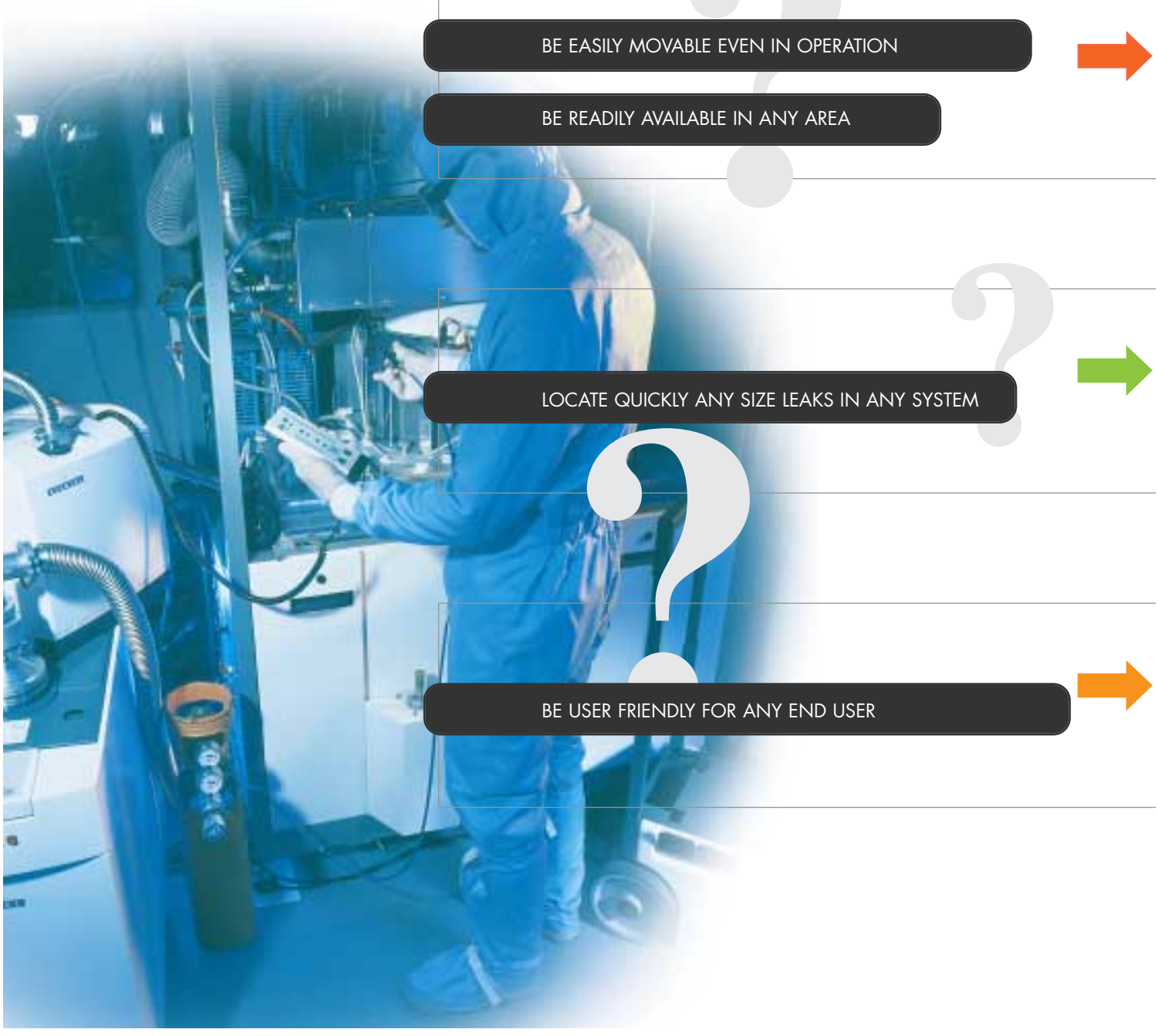
ALCATEL

ASM 122 D

An innovative portable leak detector concept specifically engineered to meet any maintenance requirements for clean applications

Leak testing a thin film system or a satellite test chamber is always a burden for maintenance people and quality managers.

Guaranteeing pollution free (hydrocarbon oil contamination for instance) inside the system to be tested is one of the mandatory requirements. Furthermore, the detector which is used has to be able to accommodate many essential needs such as performing high sensitivity leak testing within limited footprint:



- BE EASILY MOVABLE EVEN IN OPERATION
- BE READILY AVAILABLE IN ANY AREA
- LOCATE QUICKLY ANY SIZE LEAKS IN ANY SYSTEM
- BE USER FRIENDLY FOR ANY END USER

The innovative concept of the ASM 122 D makes it the ideal portable dry leak detector to meet any maintenance needs for clean applications.
It is recommended for a wide range of applications:

- Leak testing vacuum systems in the semiconductor industry
- Leak testing components (valves, filters, ...)
- Maintenance of system chambers in the research and developments laboratories (beam lines, vacuum systems, etc.)
- Clean environment operation (aerospace industry, instrumentation, medical and pharmaceutical industry, food industry, ...)

EASY TO MOVE
The ASM 122 D is a self contained unit integrated to a cart with a minimal footprint and exceptional maneuverability.

POWERFUL
The ASM 122 D offers unmatched performance in all test modes:

> Sniffing mode: The new auto-zero function ("floating-zero" method) delivers the ability of measuring leaks as small as 1.10^{-7} mbar.l/sec.
> Inboard testing mode:

- The 4 l/s (240 l/min.) helium pumping speed and the compression ratio of its high vacuum pumps provide ultra fast response and recovery time.
- Sensitivity of 5.10^{-12} mbar l/s.

EASY TO USE
A very comprehensive display control panel with direct access to integrated functions, makes this unit easy to operate for any end-user.

ASM 122 D

An innovative concept offering excellent maneuverability and compactness

One of the biggest issues regarding the operation of a leak detector as a maintenance tool is linked to the following:

- Its transportability and maneuverability capabilities (how to reach the area where the unit needs to be connected to ?)
- Its capability to be placed in very limited space area during the tests
- Its capability to be stored easily once the tests have been performed

So many issues which very often could not be solved...

... So many questions that Alcatel did answer with the ASM 122 D:

- **Maneuverability:**
the ASM122D is a self-contained unit integrated to a cart, which allows the detector to be moved effortlessly on a very long distance.

- **Large wheels** help the operator to move the trolley easily (ability to pass through various obstacles like stairs or irregular floors).

Furthermore, the complete set has been designed to be moved easily through narrow corridors.

- **Small footprint:**
the dimensions of the detector respond nicely to the question of storage in limited space areas.

- **Portability:**
the ASM 122 D is the lightest complete unit available on the market (29 kg / 64 lb.) allowing maneuverability and use by a single operator.

ASM 122 D

A ratio "performance / compactness" without equivalent

Compactness and size have always been criteria in detriment to performance: Not Anymore!
One of the goals of the Alcatel R&D team was to design a really compact and powerful dry leak detector which could meet requirements of the high-tech industries and research laboratories.
They have achieved this target by developing and integrating an unique concept which uses the latest innovations in the field of vacuum technology.

Vacuum-activated valves:
- Large diameter valves (offering excellent conductance) controlled by a vacuum buffer system
- Low power consumption
- Low noise and vibration
- Reinforced reliability (MTBF > 2,000,000 cycles)

New analyzer cell:
- 180° magnetic deflection mass spectrometer
- Patented amplification system based on an electron multiplier (multi channel plate concept) which provides unmatched stability and sensitivity.
- Two independent filaments for a better reliability and maintainability (automatic switch from one filament to the other with automatic auto-calibration for maximum up-time).

Compact secondary pump (ATH 30):
The hybrid turbo pump size allows an unique integration for optimized performance such as:
- Very high helium pumping speed (4 l/sec or 240 l/min.)
- Impressive performance in roughing mode

Diaphragm dry pump:
- Multi-stage compact package
- No particle generation ensuring total cleanliness of the parts to be tested
- Low consumption
- Low noise

ASM 122 D

A modern and user-friendly interface which meets every user profile

Operation

• Rugged remote control: very easy to use and easy to hold. The helium signal is displayed in two different ways : bargraph display to highlight the fast evolution of the signal and digital display to get a high resolution and a direct readout.

• Variable pitch audio alarm proportional to the helium signal amplitude for easy location of leaks in complex systems.

Settings and maintenance

• Comprehensive display panel: indicates the user mode, settings, maintenance information (preventive and corrective maintenance), all of which is password-protected.

Easy-to-use and effective integrated functions

Auto-calibration

• Auto-calibration with built-in temperature compensated calibrated leak

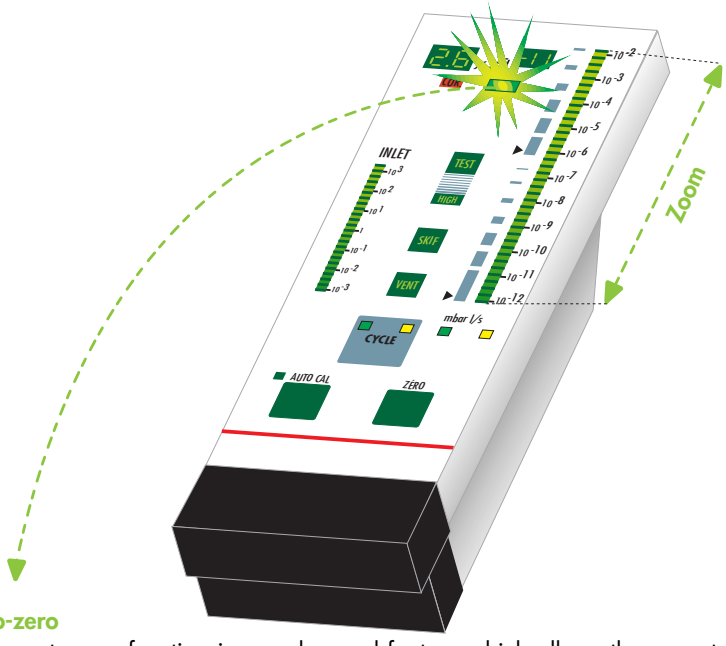
• Auto-calibration during the start-up sequence and the ability to activate periodic autocalibration

• All pertinent information related to the auto-calibration process and its settings

Signal correction

• Automatic correction processed by the detector through an external calibration

• Possibility to manually adjust the correction factor (for direct readout of the helium signal regardless of the leak rate unit)



Auto-zero

• The auto-zero function is an advanced feature which allows the operator to conveniently improve the sensitivity of the detector when the helium signal measurement becomes more difficult due to a high background level.

• The auto-zero function is even more helpful in sniffing mode, for suppressing the background signal due to the residual helium in the air (5 PPM) enhancing the sensitivity up to 1.10^{-7} mbar.l/s

•The principle of the function is to subtract the background in order to focus on the helium signal. The new method developed by Alcatel is based on a specific algorithm ("floating zero" method) which eliminates the display of erroneous results and guarantee to detect any size leaks.

All these functions are directly accessible by depressing one single key switch.

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Technical features information

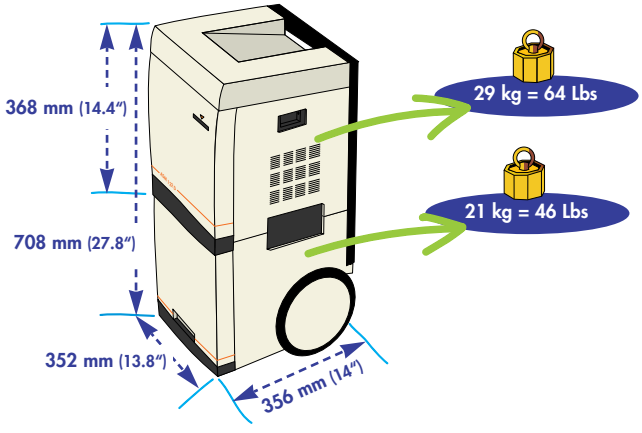
Specifications	
Minimum detectable helium leak	**5.10^{-12} atm.cc/s**
Measurement range	**from 1.10^{-12} to 10^{-2} atm.cc/s**
Maximum test pressure	**20 mbar**
Helium pumping speed at the inlet port	**4 l/s (240 l/min.)**
Start-up time (including auto-calibration)	**< 5 min.**

Integrated functions
• Auto-calibration (with built-in temperature compensated calibrated leak)
• Auto-zero (with "floating zero" method to ensure that the signal never goes negative)
• Automatic signal correction (external calibration or manually adjustable correction factor)
• Three hard vacuum test modes (massive leak, normal and high sensitivity)
• Audio alarm with variable pitch (90 dBA)

Equipment
Rugged remote control
Transport trolley

Dimensions	
Dimensions (detector only)	**368 x 352 x 356 mm (14.4" x 13.8" x 14")**
Weight (detector only)	**29 kg (64 lb.)**

Options et accessories
Metal seals
DN40 inlet flange adapter
Sniffer probe and associated accessories



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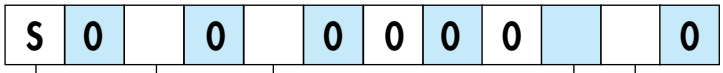
Ordering information



	Leak detector
	ASM 122 D
Code	S

	Seals for the vacuum module and analyzer cell	
	Elastomer	Metal
Code	R	P

The leak detector can be provided with: Elastomer seals (for the high vacuum, the inlet block as well as the spectro) as standard (**R**) or with metal seals for specific applications (**P**).

	Exhaust	
	DN 25	DN 40
Code	S	L

	Main power supply	
	110/130V - 50/60Hz	220/240V - 50/60Hz
Code	7	8

	Main power cable type				
	U.S.A.	France /Germany	U.K.	Italy	Switzerland
Code	1	2	3	4	5