

adixen

**Portable Dry Leak Detector**  
ASM 122 D



HELIUM LEAK DETECTORS

ALCATEL

# Portable Dry Leak Detector

## 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 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**



#### **EASY TO MOVE**

The ASM 122 D is a self-contained unit integrated to a cart with a minimal footprint and an exceptional manoeuvrability.

**LOCATE QUICKLY ANY SIZE  
LEAKS IN ANY SYSTEM**



#### **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 to measure leaks as small as  $1 \cdot 10^{-7}$  mbar.l/s.

> 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  $5 \cdot 10^{-12}$  mbar.l/s.

**BE USER-FRIENDLY  
FOR ANY END-USER**



#### **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.

# Portable Dry Leak Detector

## ASM 122 D

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, ...).



### An innovative concept offering excellent manoeuvrability 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 manoeuvrability to move through tight spaces.
- 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:

#### • **Manoeuvrability:**

The ASM 122 D is a self-contained unit integrated to a cart, which allows the detector to be moved effortlessly, even for long distances.

#### • **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 make it easy to store in limited spaces.

#### • **Portability:**

The ASM 122 D is the lightest complete unit available on the market (29 kg/64 lb.), for transportation and use by a single operator.

# Portable Dry Leak Detector

## ASM 122 D

### A "performance / compactness" ratio 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 the requirements of high-tech industries and research laboratories.  
They have achieved this target by developing and integrating a 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 31):

The hybrid turbo pump size allows a unique integration for optimized performance such as :

- Very high helium pumping speed (4 l/s or 240 l/min.)
- Impressive performance in roughing mode.



#### Diaphragm dry pump:

- Multistage compact package
- No particle generation, ensuring total cleanliness of the parts to be tested
- Low consumption
- Low noise.

# Portable Dry Leak Detector

## ASM 122 D

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

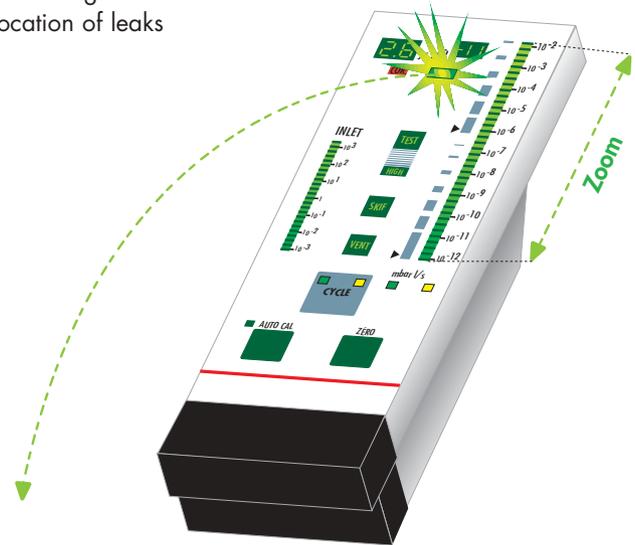


#### Operation

- Rugged remote control: very easy to use and easy to hold. The helium signal is displayed in two different ways : dynamic green/red bargraph 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 auto-calibration.
- 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.

# Portable Dry Leak Detector

## ASM 122 D

### Technical Specifications

Specifications	
Minimum detectable helium leak	5.10 <sup>-12</sup> atm.cc/s
Measurement range	from 1.10 <sup>-12</sup> to 10 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.
Power consumption	320 w

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 (gross leak, normal and high sensitivity)
Audio alarm with variable pitch (90 dBA)
Discrete and analog Input/Output + RS 232
Vocal synthesizer

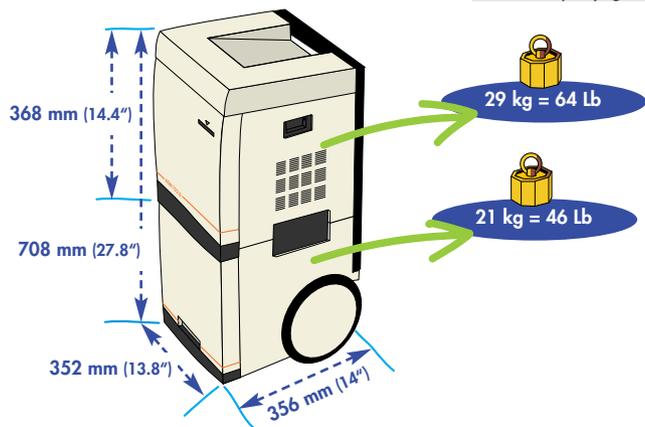
Equipment
Rugged remote control
Transport trolley

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
3 Masses
Metal seals
DN 40 inlet flange adapter
Measurement units : mbar.l/s - Pa.m <sup>3</sup> /s - Torr.l/s
4 user languages

Accessories	PART NUMBER
5 m Sniffer probe	SNC1E1T1
Dedicated sniffer probes	*
Helium spray gun	109951

\*For accessories, see "Accessories for helium leak detectors".



# Portable Dry Leak Detector

## ASM 122 D

### Ordering information

S 0 0 0 0

	<b>Leak detector</b>
	ASM 122 D
Code	S

	<b>Masses</b>	
	Helium	3 Masses
Code	0	3

3 Masses (3). This option allows the leak detector to detect masses 2, 3 and 4.

	<b>Seals for the vacuum module and analyzer cell</b>		The leak detector can be provided with: Elastomer seals (for the high vacuum, as well as the spectro) as standard (R) or with metal seals for specific applications (P). The elastomer seal is the standard configuration.
	Elastomer	Metal	
Code	R	P	

	<b>Exhaust</b>	
	DN 25	DN 40
Code	S	L

	<b>Measurement units</b>		
	mbar.l/s	Torr.l/s	Pa.m <sup>3</sup> /s
Code	M	T	P

	<b>Language</b>			
	French	English	German	Japanese
Code	A	B	C	E

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

	<b>Main power cable type</b>					
	U.S.A.	France/Germany	U.K.	Italy	Switzerland	Without plug
Code	1	2	3	4	5	7

**For example**  
You need ...

ASM 122 D    S  
Helium        O  
Elastomer    R  
DN 40        L  
Torr.l/s      T  
English       B  
110/130 V    7  
50/60 Hz     7  
U.S.A.        1

= S O R O L 0 0 T B 7 1 0

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