

# Leak Detection

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## PICO®

### THE WORLD'S SMALLEST MASS SPECTROMETER-BASED HELIUM LEAK DETECTOR

Welcome to the future of mass spectrometer-based helium leak detection. Weighing 7 Kg, the PICO® is truly the smallest mass spectrometer-based leak detector available in the world today. In the past, a need was demonstrated for a *truly* portable, lightweight, and reliable leak detector. Leak detection was accomplished with either a large, heavy instrument (typically more than 30 kg) which could not be easily transported, or with an instrument that was lightweight but unable to meet reliability and sensitivity requirements.

Incorporating advanced technology in the area of mass spectrometry and vacuum technology (patents pending), the PICO provides fast, contamination-free, leak detection. As a sniffing style helium leak detector, it detects leaks from pressurized lines or components with a minimum detectable leak rate of  $1 \times 10^{-7}$  atm-cc/s.

In addition to an ion trap mass spectrometer, the PICO has an integral vacuum system which incorporates a turbomolecular pump as well as a backing scroll pump. Aided by the small volumes of the unit, the PICO has a very fast response and clean-up time. Unique in its shape, the PICO is approximately 4 inches wide, 15 inches long, and 10 inches high. The device includes an extremely simple-to-use touch screen interface that displays the current helium leak rate as well as historical leak rate data. With an adjustable audio signal the instrument can be heard in very noisy environments often encountered in leak detection applications. The PICO also includes a three meter rugged probe with field replaceable filter. The unit also includes a "zero" feature that compensates for background levels of helium often observed in production areas. This lightweight, self-contained unit is made possible by miniaturization of both the turbo-scroll pump vacuum system and the ion-trap mass spectrometer (patents pending).

### Features & Benefits

- Lightweight and portable (7 Kg)
- $1 \times 10^{-7}$  atm-cc/s sensitivity
- Extremely simple to operate
- Integral vacuum system (Turbo/Scroll Pump)
- Quick response and clean-up time
- Rugged sniffing probe
- Self-protection for dirty environments
- Displays historical leak rate
- Quick Startup
- Patent Pending Technologies



# Specifications and Ordering Information



**Detectable Gases**  
**Theory of Operation**  
**Smallest Detectable Helium Leak Rate**  
**Response Time**  
**Input Pressure**  
**Sniffing Probe**

**Vacuum System**  
**User Interface**

**Audible Alarm**  
**Zero Function**  
**Units of Measure (selectable)**  
**Ambient Operating Temperature**  
**Weight**  
**Input Power**  
**Conformance Standards**

Helium  
 Mass spectrometry  
 $< 1 \times 10^{-7}$  atm-cc/s  
 < 1 second  
 Atmospheric  
 3 meter rugged probe with field-replaceable filter  
 Integral turbomolecular and scroll pump  
 Backlit touch-screen display with graphical leak rate trending  
 Adjustable  
 Suppression of background helium levels  
 atm-cc/s, mb l/s, Pa m<sup>3</sup>/s, torr l/s  
 +10° to +45°C  
 7 Kg  
 110-240 VAC, 50-60 Hz  
 CE Compliant to EMC Directive 2004/108/EC

**Ordering Code Example: MSSAHEAABCDD**

**PICO Dedicated Sniffing Leak Detector**

**Code**

MSSAHE

**Configuration**

MSSAHE

**Length of Sniffing Probe (AA)**

3 meter  
 5 meter  
 6 meter

3S  
 5S  
 6S

3S

**Communications (B)**

None  
 RS232

0  
 D

D

**Options (C)**

None

0

0

**Battery Operation (DD)**

None  
 Battery Operation

0  
 B1

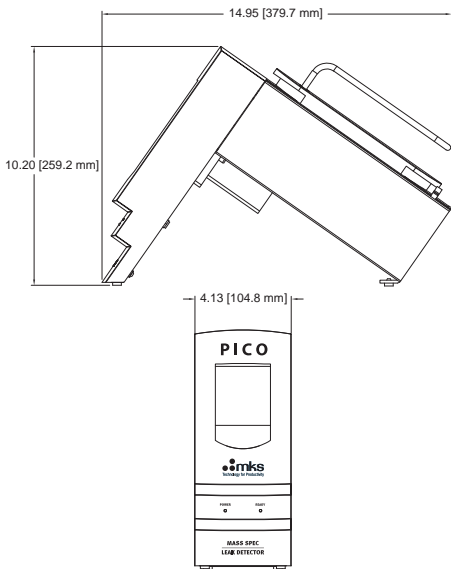
B1

**Accessories for PICO Dedicated Sniffing Helium Leak Detector**

Calibrated Helium Leak Standard (10 <sup>-5</sup> atm cc/s leak rate)	143-9993
Battery charger (2-bay)	131582-P1
MKS lithium ion battery	130942-P1
Probe filters, package of 25	129874-G1
Probe filters, package of 50	129875-G1

**Common Ordering Examples for PICO Dedicated Sniffing Helium Leak Detector**

MSSAHE3S0000	PICO Sniffer, 3m probe, AC operation, no options
MSSAHE3S00B1	PICO Sniffer, 3m probe, battery operation
MSSAHE3SD0B1	PICO Sniffer, 3m probe, battery operation, RS232



## Dimensional Drawing —

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).



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