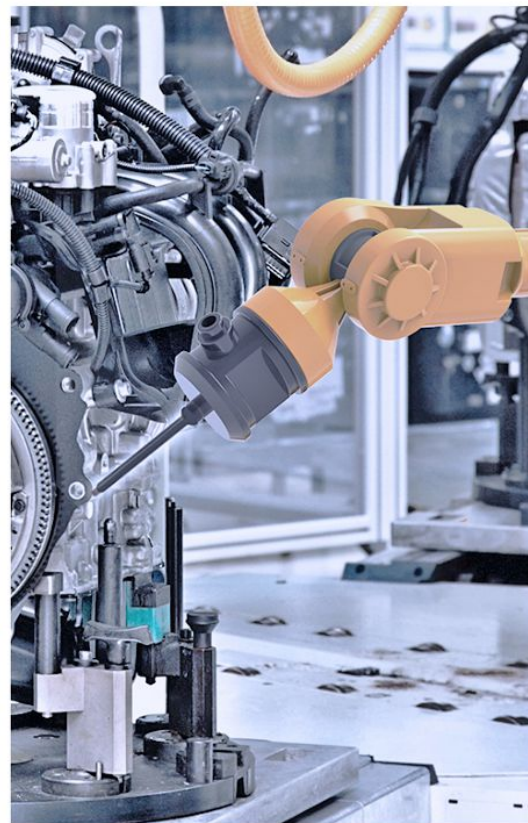


# Leak Detectors

Catalog 2022-2023



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# Applications

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## OVERVIEW

LEAK DETECTORS																						
	ELT3000	XL3000flex	Protec P3000 (XL)	Sensistor Sentrac	Sensistor Sentrac Strix Edition	Sensistor ISH2000	EXTRIMA	Sensistor XRS9012	Ecotec E3000	Ecotec E3000A	HLD6000	UL3000 & UL1000 Series	UL6000	LDS3000AQ	UL1000	LDS3000	Modul1000	T-Guard 2.0	Contura S400 /S600	IRwin	D-Tek Stratus	
<b>APPLICATIONS</b>																						
Semiconductor production									✓			✓	✓									
Automotive industry	✓	✓	✓	✓	✓	✓			✓		✓			✓	✓	✓	✓	✓			✓	
Aircraft industry				✓	✓	✓	✓			✓												
Air conditioning		✓	✓	✓	✓	✓		✓	✓		✓			✓	✓	✓	✓					✓
Refrigeration		✓	✓	✓	✓	✓		✓	✓		✓			✓	✓	✓	✓	✓				✓
Systems engineering				✓	✓	✓								✓		✓	✓	✓				
Public utilities							✓	✓													✓	
Food packaging				✓	✓															✓		
Garage service																						✓
3C*	✓	✓	✓									✓				✓						

\*3C = Communication, Computing, Consumer electronics

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# **Leak Detectors**

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# Leak Detectors

## Lithium Ion Battery Leak Detector

ELT3000 Lithium Ion Battery Leak Detector ..... B1

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XL3000flex Helium and Hydrogen Sniffer Leak Detector ..... B3  
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## Leak Detectors for System Integration

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## Service Tools for HVAC and Automotive

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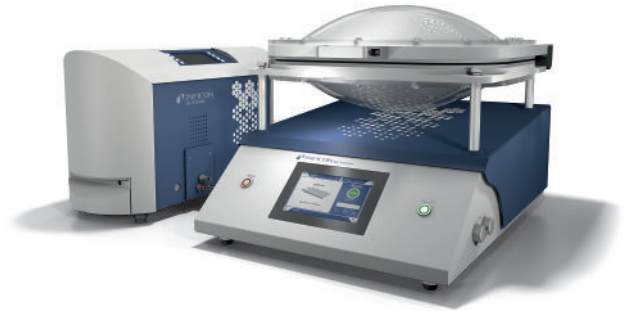


## Lithium Ion Battery Leak Detector

# ELT3000

Sensitivity, reliability and innovation – the modular ELT3000 system sets a new benchmark for battery leak testing. Lithium-ion batteries are used in a wide range of emerging technologies including prismatic cells, round cells, and pouch cells. The latter are used in many industries, for example by smartphone and tablet manufacturers or in the booming industry for e-mobility.

With the ELT3000, INFICON offers a unique test system for battery cells that helps you comply with the ISO 9000 standard. It is the only system that determines leakage directly, rather than indirect parameters (like pressure changes). Based on mass spectrometer technology it can find leaks 1,000 times smaller than the ones found with traditional pressure test methods. The new ELT3000 helps you to guarantee battery lifetimes of up to 10 years.



### ADVANTAGES

- **RELIABLE LIFETIME**

Leaks 1,000 times smaller than with traditional methods can be detected by the use of mass spectrometer technology allowing a battery cell lifetime of up to 10 years.

- **FUTURE-PROOF INVESTMENT**

The ELT3000 system is well-suited for prismatic cells, round cells and pouch cells. Even if you decide to go to different cell geometries, you can continue testing with the ELT3000.

- **SIMPLE TO USE AND TO INTEGRATE**

The easy testing procedure and the touch display make the ELT3000 simple and intuitive to use. No costly training courses are needed. The system can be fully integrated into automated production.

- **HIGHLY EFFICIENT**

Both test chamber designs allow for simultaneous testing of several cells in one testing cycle. In combination with short cycle times, the system allows for fast throughput testing.

### APPLICATIONS

- 3C Market (Computing, Communication, Consumer Electronics Industry)
- E-mobility industries

# ELT3000

## ORDERING INFORMATION

ITEM	PART NUMBER
Basic Leak Detector	
ELT3000 (Gas Detection Unit + Control Unit) 230 V, 50 Hz	600-001
ELT3000 (Gas Detection Unit + Control Unit) 110 V, 60 Hz	600-002
Test Chambers	
TC3000S Rigid Chamber ( 180 mm × 180 mm × 27 mm)	600-100
TC3000L Rigid Chamber ( 400 mm × 210 mm × 120 mm)	600-101
FTC3000 Flexible Chamber ( 400 mm × 350 mm)	600-102
Calibration Leaks	
E-Check (DMC)	600-105
ACCESSORIES	
I/O1000 Module (input / output module)	560-310
Data cable (I/O1000 / BM1000 to ELT3000)	
2 m	560-332
5 m	560-335
10 m	560-340
BM1000 Profibus module	560-315
BM1000 PROFINET I/O module	560-316
BM1000 Device Net module	560-317
BM1000 Ethernet/IP	560-318

## SPECIFICATIONS

Minimum detectable leak rate	$1 \times 10^{-6}$ mbar l/s (Helium equivalent leak rate)
Measurement range	Three decades
Leak rate units	mbar l/s, atm cc/s, Pa m <sup>3</sup> /s
Detection sensor	Quadrupole mass spectrometer (2 cathodes)
Time until ready for measurement	<180 s
Serial interfaces	USB 2.0; M12 (for connection I/O1000); RJ45 (network connection)
Interface via I/O1000 Modul	10 digital inputs; 8 digital outputs; RS232
Operating temperature	10° C to 40° C (50° F-104° F)
Type of protection	IP20
Dimensions Gas Detection (L × W × H)	610 × 300 × 380 mm (24 × 12 × 15 in.)
Dimensions Control Unit (L × W × H)	700 × 540 × 250 mm (27.6 × 13.7 × 6.4 in.)
Weight	65 kg (144.5 lbs)
Operating language	English, German, Korean, Chinese, Japanese

## Helium Sniffer Leak Detectors

# XL3000flex

The XL3000flex is a high-precision, innovative sniffer leak detector for the refrigeration, air conditioning and automotive industries. The INFICON High Flow Technology with 3,000 sccm, together with the worldwide unique mass spectrometer, guarantees the highest measuring sensitivity, even at longer distances. As a result, even with imprecise handling, leaks can be reliably detected, even if they are located in hard-to-reach places. When combined with various industry-standard communication interfaces, the XL3000flex is also ideal for robotics applications.



### ADVANTAGES

- **EXCEPTIONAL RELIABILITY**

Leaks are detected reliably even when the device is used imprecisely - through the INFICON high-flow Sniffer Leak Detector with 3000 sccm.

- **HIGH LEVEL OF PLANT AVAILABILITY**

Thanks to the highly sensitive mass spectrometer system, downtime due to sensor contamination is virtually ruled out even at high tracer gas concentration in the production environment.

- **MAXIMUM PRODUCTION RELIABILITY**

Our high-quality stainless-steel mass spectrometer sets new quality standards - with a 3-year warranty on the cathodes.

- **COST EFFICIENCY**

It is possible to reduce the helium concentration or use cheaper forming gas - thanks to the highly sensitive stainless steel mass spectrometer.

### APPLICATIONS

Manual or automatic leak-testing of subassemblies and during production of:

- Refrigerators
- Freezers
- Air conditioning systems
- Vehicle air conditioning systems
- Heating and ventilation systems
- Components for refrigeration and air conditioning systems
- Vehicle components and similar products

# XL3000flex

## ORDERING INFORMATION

ITEM	PART NUMBER
XL3000flex	520-200
Sniffer line	
SL3000XL-3: 3 m length	521-011
SL3000XL-5: 5 m length	521-012
SL3000XL-10: 10 m length	521-013
SL3000XL-15: 15 m length	521-014
Adapter for external sniffer line PROTEC P3000XL	521-015
Oil/water protection tip for SL3000XL	521-016
Filter oil/water protection tip	521-017
Sniffer tip	
ST312XL	521-018
FT312XL	521-019
ST385XL	521-020
FT385XL	521-021
FT250XL	521-022
Special filter cartridge for SL3000XL (25 units)	521-023
BM1000 bus module	
Profibus	560-315
Profinet	560-316
DeviceNet	560-317
EtherNet/IP	560-318
IO1000 module	560-310

## SPECIFICATIONS

Min. detectable leak rate for helium/hydrogen	
High flow	$2 \times 10^{-6}$ mbar l/s
Low flow	$2 \times 10^{-7}$ mbar l/s
Gas flow	
High flow	3,000 sccm
Low flow	300 sccm
Response time for high flow/low flow	<1 s
Ion source	Two longlife iridium filaments coated with yttrium oxide
Run-up time	150 s
Measurable gases	Helium, hydrogen
Power rating	280 VA
Power supply demand	100-120 V AC 50/60 Hz 230 V AC 50/60 Hz
Main fuses	2 × T6, 3 A 250 V
Type of protection	IP30
Interfaces	USB, RS232, RS485, fieldbus systems
Dimensions (L × W × H)	544 × 404 × 358 mm

## Helium Sniffer Leak Detectors

# Protec® P3000(XL)

INFICON Protec P3000 and Protec P3000XL helium sniffer leak detectors are specifically designed for full-time sniffing applications in demanding production environments.

The Protec P3000 (XL) enables sustained increase in productivity and reliability in the testing of subassemblies and tests during running production. Numerous features increase its user-friendliness and make it less sensitive to careless use and operator errors. It is also fast to make the best use of your available cycle time.



### ADVANTAGES

- **FAST AND RELIABLE**

Reliable localization of even the smallest leaks, with fast response times and without faulty measurements. Even short cycle times are used optimally.

- **COST EFFICIENCY**

The INFICON Wise Technology helium sensor does not need a vacuum, turbopump or maintenance. This lowers your operating costs and avoids downtimes.

- **LOW MAINTENANCE**

Maintenance efforts depend on the type of the Protec P3000 Series. For setup and maintenance work, the Protec P3000RC can be connected to an external control unit, while the sniffer line display is sufficient for daily operation. The Protec P3000XL is maintenance-free.

- **RELIABLE LEAKAGE DETECTION**

The INFICON High Flow at 3000 sccm reliably detects leakages, even in the case of imprecise handling.

- **COMPLETE OPERATOR GUIDANCE**

The I-Guide mode can be used to define the leak positions to be checked with time sequences and repetition rates. As a result, even the most inexperienced operator can efficiently detect leakages.

# Protec<sup>®</sup> P3000(XL)

## APPLICATIONS

The Protec P3000(XL) is ideal for all helium sniffing applications of pressurized components that need to be leak-tested.

### Refrigerating/air conditioning industries

- Evaporators
- Condensers
- Valves
- Compressors
- Testing of pre-assembled air conditioning systems, heat pumps and refrigerators and freezers before filling with refrigerant

### Automotive industry

- Brake lines
- Fuel lines
- Hydraulic components
- Motors
- Testing of pre-assembled air conditioning systems before filling with refrigerant

# Protec® P3000(XL)

## ORDERING INFORMATION

ITEM	PART NUMBER
Protec P3000 (base unit), 230 V, 50 Hz	520-001
100/115 V, 50/60 Hz	520-002
Protec P3000XL (base unit), 230 V, 50 Hz	520-003
100/115 V, 50/60 Hz	520-004
Remote-controlled version without display unit	
Protec P3000, RC, 230 V, 50 Hz	520-103
Protec P3000, RC, 110/115 V, 50/60 Hz	520-104
Protec P3000XL, RC, 230 V, 50 Hz	520-105
Protec P3000XL, RC, 110/115 V, 50/60 Hz	520-106
Display unit for Protec P3000RC	
Table top version	551-100
Rack version	551-101
Connecting cable for display unit	
5 m length	551-102
0.7 m length	551-103

Protec is a trademark of INFICON.

## ORDERING INFORMATION

ITEM	PART NUMBER
Sniffer line for Protec P3000 with integrated display and push-buttons	
SL3000-3, 3 m length	525-001
SL3000-5, 5 m length	525-002
SL3000-10, 10 m length	525-003
SL3000-15, 15 m length	525-004
Sniffer line for Protec P3000XL with integrated display and push-buttons	
SL3000XL-3, 3 m length	521-011
SL3000XL-5, 5 m length	521-012
SL3000XL-10, 10 m length	521-013
SL3000XL-15, 15 m length	521-014
Sniffer line adapter for system integration	
for Protec P3000	525-005
for Protec P3000XL	521-015
Sniffer tips for SL3000 (Protec P3000)	
ST 312, 120 mm, rigid	12213
FT 312, 120 mm, flexible	12214
ST 200, 200 mm, rigid	12218
FT 250, 250 mm, flexible	12266
ST 385, 385 mm, rigid	12215
FT 385, 385 mm, flexible	12216
FT 600, 600 mm, flexible	12209
ST 400, 400 mm, 45° angled	12272
Sniffer tips for SL3000XL (Protec P3000XL)	
ST312XL, 120 mm, rigid	521-018
FT312XL, 120 mm, flexible	521-019
ST385XL, 385 mm, rigid	521-020
FT385XL, 385 mm, flexible	521-021
FT250XL, 250 mm, flexible	521-022

# Protec® P3000(XL)

ITEM	PART NUMBER
PRO-Check test leak - optional (not included with delivery of Protec P3000)	521-001
Spare reservoir for PRO-Check	521-010
Calibrated leak with helium reservoir	
S-TL 4, leak rate range 1.0 - $1.2 \times 10^{-4}$ mbar l/s	122 37
S-TL 5, leak rate range 2.0 - $6.0 \times 10^{-5}$ mbar l/s	122 38
S-TL 6, leak rate range 6.0 - $8.0 \times 10^{-6}$ mbar l/s	122 39
Holder for sniffer line SL3000(XL)	525-006
Cover for test leak port	525-007
Water protection tip for SL3000	122 46
Oil/water protection tip for SL3000XL	521-016
Replacement filter for oil/water protection tip (100x)	521-017
Special filter cartridge for SL3000XL	521-023

## SPECIFICATIONS

	PROTEC P3000	PROTEC P3000 (XL)
Minimum detectable leak rate	$1 \times 10^{-7}$ mbar l/s	$1 \times 10^{-6}$ mbar l/s @ 3000 sccm $1 \times 10^{-7}$ mbar l/s @ 300 sccm
Measurement range	Five decades	Four decades @ 3000 sccm Five decades @ 300 sccm
Sensor response time		450 ms
Response time including sniffer line		<0.7 s
Leak rate units		mbar l/s; Pa m <sup>3</sup> /s; ppm
Refrigerant equivalent leak rates		g/a; oz/yr; lb/yr
Start-up time		approx. 5 min
Dimensions (W × D × H)		610 × 265 × 370 mm (24 × 10.4 × 14.6 in.)
Weight		27 kg (60 lb.)
Gas flow	300 sccm	300/3,000 sccm
Ambient temperature range		+10° to 45°C



## Hydrogen Sniffer Leak Detectors

# Sensistor® Sentrac

The Sensistor Sentrac Hydrogen Leak Detector is a modern leak detector for industrial use. The instrument, which uses a low-cost forming gas (5% hydrogen and 95% nitrogen) as the test gas, offers leak locating in a variety of situations both on the production and repair lines. Thanks to its unique ability to handle small and large leaks as well as high background levels of tracer gas, this leak detector is highly adaptable.

For added flexibility, the Sensistor Sentrac leak detector is available in both desktop and battery-operated models.



### ADVANTAGES

- **HIGHLY EFFICIENT**

Detect a wide range of leaks thanks to the unique combination of high sensitivity, high selectivity, great dynamic range and fast recovery time.

Suitable for both manual and robot-assisted leak detection.

- **COST EFFICIENCY**

Low total cost of ownership (TCO).

- **EASY TO USE**

Lightweight and easy to carry, ergonomically designed, intuitive interface.

- **LOW MAINTENANCE**

No pump, no maintenance.

Easy sensor change.

### APPLICATIONS

The combination of inexpensive tracer gas, flexible testing procedures and high reliability makes Sensistor Sentrac the optimal solution for applications in production, repair lines and maintenance.

- Automotive industry
- Aerospace
- RAC
- Packaging
- Medical
- Process

# Sensistor® Sentrac

## ORDERING INFORMATION

ITEM	PART NUMBER
Sensistor Sentrac, desktop unit including hand probe P60 and 3 m probe cable C21	590-900
Sensistor Sentrac, portable unit including hand probe P60 and 3 m probe cable C21	590-910
<b>ACCESSORIES</b>	
Hand Probe P60	590-890
Hand Probe P60 Flex	590-892
Robot Probe R50	590-921
Probe tip protection caps, 50 pack	591-273
Probe tip protection caps, 500 pack	590-625
Probe tip filter, 50 pack	591-234
Tracer gas filler TGF11, for controlled filling and evacuation of tracer gas in the object	
Standard version	590-558
Low pressure version	590-559
Sensistor ILS500 F leak detection filler	590-580
Sensistor ILS500 F leak detection filler, high pressure version	590-581
Probe cables C21	
3 m (9.8 ft)	590-161
6 m (19.6 ft)	590-175
9 m (29.5 ft)	590-165
Replacement sensor	590-292
Insert sensor H65, replaces the standard hand probe in automated tests, requires a Combox	590-250
Test leaks <sup>1)</sup>	on request
Combox60 for connecting PK50, H65, R50 to Sentrac	590-821

<sup>1)</sup> Please contact us for our range of matching test leaks.

## SPECIFICATIONS

Minimum detectable leak rate		
Detection Mode with P60 standard probe		$5 \times 10^{-7}$ mbar l/s or cc/s with 5% H <sub>2</sub>
Analysis Mode with P50 standard probe		0.5 ppm H <sub>2</sub> ; $5 \times 10^{-7}$ mbar l/s or cc/s with 5% H <sub>2</sub>
Start time		1 min
Calibration		External test leak or calibration gas
Operating time (Sentrac portable)		12 h at 20°C (68°F)
Charging time (Sentrac portable)		6.5 h at 20°C (68°F)
Inputs/outputs		25 pin, D-Sub with following interface: RS232, Audio line out, Analog out, Digital 3 in/4 out, USB (Slave), SD card reader
Maintenance		Maintenance-free
Power supply	Sensistor Sentrac desktop unit	100 – 240 V AC, 50/60 Hz, 2 A
	Sensistor Sentrac portable	Internal, rechargeable battery <sup>1)</sup> (Li-Ion)
Dimensions (W × H × D)	Sensistor Sentrac desktop unit	305 × 165 × 182 mm (12 × 6.6 × 7.2 in.)
	Sensistor Sentrac portable	330 × 200 × 280 mm (12.9 × 7.8 × 11 in.) with case
Weight	Sensistor Sentrac desktop unit	4.2 kg (9.2 lb.)
	Sensistor Sentrac portable	4.8 kg (10.5 lb.)

<sup>1)</sup> Charged, using adapter supplied, 100-240 V, 50/60 Hz, 0.3 A

## Hydrogen Sniffer Leak Detectors

# Sentrac Strix™ Edition

The Sentrac Strix Edition Hydrogen Leak Detector is designed for industrial production and maintenance leak detection applications. Based on the Sentrac Hydrogen Leak Detector, Sentrac Strix Edition brings the benefits of its predecessor to a higher level thanks to the all-new hand probe and sensor: Strix. The highly sensitive and selective Strix hydrogen sensor ensures quicker reaction and recovery times to find anything from small to large leaks without delay. Long sensor lifetime and its resilience to high background levels of gas minimize the risk for operator errors and for missing small leaks.

The Strix hand probe is light and robust, for maximum operator ergonomics. Thanks to its small probe tip, easy access is possible even on test components with complicated geometries. The hand probe has a multi-function button as well as a clear display providing leak detection information and facilitating use for the operator.



### ADVANTAGES

- Faster throughput for locating tasks
- Reduces risk of missing small leaks
- Finds and withstands the widest range of leak sizes
- Easier access on complicated geometries
- Truly intuitive search modes
- Resilient to high tracer gas backgrounds
- Longer sensor lifetime
- Lower cost of ownership

### APPLICATIONS

Suitable for a broad spectrum of production applications such as:

- Refrigeration
- Air Conditioning
- Automotive
- General industry

# Sentrac Strix™ Edition

## ORDERING INFORMATION

ITEM	PART NUMBER
Sentrac Strix Edition, desktop model (Incl. Strix Hand Probe and 3 m C21 probe cable)	590-830
Sentrac Strix Edition, portable, battery operated model (Incl. Strix Hand Probe and 3 m C21 probe cable)	590-840
<b>ACCESSORIES</b>	
Strix Hand Probe	590-730
Strix Flex Hand Probe	590-740
Test Leaks	See separate data sheet
<b>SPARE PARTS</b>	
C21 Probe cables	
3 m (9.8 ft)	590-161
6 m (19.6 ft)	590-175
9 m (29.5 ft)	590-165
Strix Sensor	590-290
Strix Probe Tip Protection Caps 50-pack	590-300
Strix Probe Tip Protection Caps 500-pack	590-305
Strix Probe Tip Filters 50-pack	590-310

## SPECIFICATIONS

Min. detectable leak (Locating Mode with Strix Hand Probe)		$5 \times 10^{-7}$ mbar l/s or cc/s with 5% H <sub>2</sub>
Min. detectable leak (Measuring Mode with Strix Hand Probe)		0.5 ppm H <sub>2</sub> ; $5 \times 10^{-7}$ mbar l/s or cc/s with 5% H <sub>2</sub>
Start time		30 sec
Calibration		External test leak or calibration gas
In- and outputs		25 pin, D-Sub with following interface: RS232, Audio line out, Analog out, Digital 3 in/4 out, 24 V DC, USB (Slave), SD card reader
Maintenance		Maintenance free
Power supply	Desktop model	100 – 240 V AC, 50/60 Hz, 2 A
	Battery model	Internal, rechargeable battery* (Li-Ion)
Dimensions (W × H × D)	Desktop model	305 × 165 × 182 mm (12 × 6.6 × 7.2 in.)
	Battery model	330 × 200 × 280 mm (12.9 × 7.8 × 11 in.) with case
Weight	Desktop model	4.2 kg (9.2 lb.)
	Battery model	4.8 kg (10.5 lb.)
Operating time (battery model)		12 hours (without screensaver)
Charge time (battery model)		6.5 hours

\*Charged using adapter supplied, 100-240 V, 50/60 Hz, 0.3 A

## Hydrogen Sniffer Leak Detectors

### Sensistor® ISH2000

The Sensistor ISH2000 Hydrogen Leak Detector is a robust instrument for professional leak detection. It is the best choice in environments where large leaks occur occasionally. For this unique test method, a low-cost forming gas (5% hydrogen and 95% nitrogen) is used as the test gas. This allows unsurpassed measuring properties to be combined with user-friendly technology, low cost, and low maintenance. The Sensistor ISH2000 is therefore the best choice for a wide range of production and maintenance applications. It is particularly suitable for detecting leaks from which fluids such as water, fuel or oil escape. With its unique capability to handle high gas concentrations, the Sensistor ISH2000 is superior in precisely pinpointing leak location, irrespective of leak size.



# Sensistor® ISH2000

## ADVANTAGES

- **HIGHLY EFFICIENT**

With its unique tolerance to high gas concentrations, the Sensistor ISH2000 is superior in precisely pinpointing leak location, irrespective of leak size.

- **COST EFFICIENCY**

The unique method involving the use of inexpensive forming gas (5 % hydrogen and 95 % nitrogen) as tracer gas combines unmatched measuring properties with user-friendly technology and low costs.

- **SIMPLE TO USE AND TO INTEGRATE**

Easy set-up, easy sensor replacement and intuitive leak detection.

- **LOW MAINTENANCE**

Low maintenance effort due to minimal service requirements.

## APPLICATIONS

Suitable for a broad spectrum of applications such as:

- Industry
- Automotive industry
- Aerospace
- Packaging
- RAC
- Medical
- Process

# Sensistor® ISH2000

## ORDERING INFORMATION

ITEM	PART NUMBER
Sensistor ISH2000, desktop unit, including hand probe P50	590-750
Sensistor ISH2000P, unit for panel mounting, for full or semi-automatic leak detection	590-760
<b>ACCESSORIES</b>	
Hand Probe P50	590-780
Hand Probe P50 Flex	590-790
Robot Probe R50	590-920
Sampling probe AP29ECO, for automatic leak-testing	
3 cc/s sample flow	590-035
1 cc/s sample flow	590-036
Tracer gas filler TGF11, for controlled filling and evacuation for controlled filling and evacuation of tracer gas in the object	590-558
Standard version	590-559
Low pressure version	
Sensistor ILS500 F leak detection filler	590-580
Sensistor ILS500 F leak detection filler, high pressure version	590-581
Probe cables C21	
3 m (9.8 ft.)	590-161
6 m (19.6 ft.)	590-175
9 m (29.5 ft.)	590-165
Insert sensor H65, replaces the standard hand probe in automated tests, requires a Combox	590-250
Test leaks <sup>1)</sup>	on request
Combox for connecting AP29ECO, H65 to ISH2000	590-820

<sup>1)</sup> Please contact us for our range of matching test leaks.

## SPECIFICATIONS

Minimum detectable leak rate	
Detection Mode with P50 standard probe	$1 \times 10^{-7}$ mbarl/s or cc/s with 5% H <sub>2</sub>
Analysis Mode with P50 standard probe	0.5 ppm H <sub>2</sub> ; $5 \times 10^{-7}$ mbarl/s or cc/s with 5% H <sub>2</sub>
Start time	1 min
Calibration	External test leak or calibration gas
Inputs/outputs	25 pin, D-Sub with status signals: 24 V DC/0.5 A, 9 pin, D-Sub with RS232 probe connector (Sensistor ISH2000P)
Maintenance	Maintenance-free
Power supply	
Sensistor ISH2000	100 – 240 V AC, 50/60 Hz, 2 A
Sensistor ISH2000P	24 V DC, 3 A
Dimensions (W × H × D)	
Sensistor ISH2000	275 × 155 × 170 mm (11 × 6 × 7 in.)
Sensistor ISH2000P	275 × 137 × 81 mm (11 × 5 × 3 in.)
Weight	
Sensistor ISH2000	3.9 kg (8.6 lb.) excl. probe and probe cable
Sensistor ISH2000P	1.7 kg (3.7 lb.)

## Hydrogen Sniffer Leak Detectors

### EXTRIMA®

The portable Extrima Ex certified hydrogen leak detector is the ultimate explosion-proof instrument for leak-testing in the toughest of environments, including hazardous locations such as Zone 0 (corresponding to Division 1). It is certified for use in Zone 0, classification Ex ia, IIC T3 with ATEX, IECEx, NEPSI and CSA certificates.

Extrima is designed to withstand rough handling in the field and has a shoulder strap for easy carrying. The ergonomically designed hand probe with a built in leak/no leak LED indicator, together with the auto-range function and short recovery time, allows for fast homing in on suspected leak areas and exact leak pinpointing and quantification. The recommended tracer gas is a low cost standard forming gas (5% hydrogen and 95% nitrogen). It is non-flammable, non-corrosive, non-toxic and environmentally friendly.



#### ADVANTAGES

- **HIGHLY EFFICIENT**  
High sensitivity and fast recovery allow for efficient operation.  
Robust enclosure for demanding field use.
- **COST EFFICIENCY**  
Extrima minimizes expensive downtime.
- **EASY TO USE**  
Portable, battery operated (more than 8 hours of use per charge).  
Sensor change in less than a minute.
- **LOW MAINTENANCE**  
Low and easy maintenance.

#### APPLICATIONS

- Process industry—e.g., pipe systems, valves and containers
- Aerospace—complete fuel systems, oxygen supply and fire extinguishing systems, both in production and maintenance
- Power production—hydrogen-cooled generators and fuel cells
- Offshore



# EXTRIMA®

## ORDERING INFORMATION

ITEM	PART NUMBER
EXTRIMA	
Ex certified hydrogen leak detector, complete with detector, probe cable CX21 3 m (9.8 ft), hand probe with flexible neck PX57 Flex, shoulder strap, charger 100-240 V AC, transport case, antistatic sensor caps, water-protective tape	590-600
<b>ACCESSORIES</b>	
Hand probe (rigid neck) PX57	590-606
Flex hand probe (flexible neck) PX57	590-607
Probe cable CX21,	
3 m (9.8 ft.)	590-260
5 m (16.4 ft.)	590-265
Antistatic Sensor Caps (50 pack)	590-270
Injection pads (10 pack)	
Small, 60 mm (2.3 in.)	590-615
Large, 150 mm (5.9 in.)	590-616
Injection fix kit	590-618
Injection panel	590-619
Complete gas injection kit	590-621
Sensor	590-292
Battery charger	591-656
Test leaks <sup>1)</sup>	on request

<sup>1)</sup> Please contact us for our range of matching test leaks.

## SPECIFICATIONS

Ex classification	Ex ia IIC T3
Temperature	-20° to 50°C (-4 to 122°F)
Humidity	95% RH (non-condensing)
Chemical resistance	JET-fuel and most common petroleum products
IP protection type	IP67, 30 min@1m (IEC 60529)
Dimensions (H × W × D)	128 × 240 × 167 mm (5.03 × 9.44 × 6.57 in.)
Weight (hand probe excluded)	4.5 kg (10 lb.)
Application (mines and dust excluded)	Zones 0, 1 and 2/Division 1 and 2 (hydrogen, JET-fuel, and other T1, T2 and T3 gases)
Sensitivity	
Analysis mode	0.5 PPM - 0.2% H <sub>2</sub>
Leak detection mode	5 × 10 <sup>-7</sup> cc/s (using 5% H <sub>2</sub> tracer gas)
Battery capacity	>8 h (full charge)

## Hydrogen Sniffer Leak Detectors

# Sensistor® XRS9012

The Sensistor XRS9012 Hydrogen Leak Detector is a fast, reliable and robust instrument for utilities leak detection such as telecom cables and water pipes. The Sensistor XRS9012 offers a highly sensitive and flexible leak detection system in a heavy-duty, smart and ergonomically designed package. For leak detection, a low-cost forming gas (5% hydrogen and 95% nitrogen) is used as the test gas. This unique test method combines unsurpassed localization properties with user-friendly technology, low cost, and low maintenance.



### ADVANTAGES

- **HIGHLY EFFICIENT**

Quick detection through high and adjustable sensitivity.  
Highly selective hydrogen sensor for reliable detection.

- **COST EFFICIENCY**

Proven method involving the use of inexpensive forming gas (5% hydrogen and 95% nitrogen) as tracer gas.

- **EASY TO USE**

Easy to carry and handle.  
Quick charging in the car (5 minutes for 20 minutes of operation).

- **LOW MAINTENANCE**

No moving parts, almost maintenance-free.

### APPLICATIONS

- Telephone cables—pressurized cables, buried or ducted
- All types of gas—and water pipelines
- Gas-filled power cables
- Gas stations
- Heating systems

# Sensistor® XRS9012

## ORDERING INFORMATION

ITEM	PART NUMBER
Sensistor XRS9012	
Hydrogen Leak Detector, complete with nylon case, Probe H21, 3 m (9.8 ft.) cable, line voltage input cable, waist belt, shoulder strap, earphones and cigarette lighter cable	590-012
<b>ACCESSORIES</b>	
Hand probe H21	590-200
Hand probe extension P12	590-080
Surface probe 8612	590-040
Ground probe 8212	590-020
Cable C21,	
3 m (9.8 ft.)	590-161
6 m (19.6 ft.)	590-175
9 m (29.5 ft.)	590-165
Battery (order three units for complete change)	591-294
Charger	591-300
12 volt charger adapter for cigarette lighter	591-361
Earphones	591-443

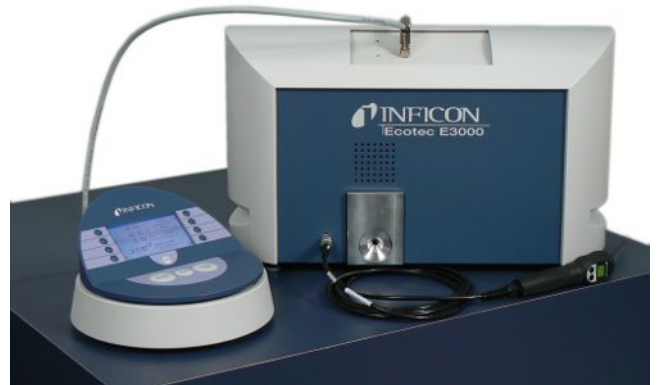
## SPECIFICATIONS

Sensitivity	0.7 ppm H <sub>2</sub> in air
Response time	<1 s
Warm-up time	<10 s
Outputs	10-LED bar graph indicator, speakers, earphone, standard 3.5 mm (1/8 in) jack, >8 ohms
Battery type	rechargeable lead batteries (gel electrolyte)
Battery capacity	13 hours at +20°C (68°F), 6 hours at -20°C (-4°F)
Maintenance	maintenance-free
Chargers	AC charger [100 – 240 V AC] car charger [9 – 15 V DC]
Casing	Aluminum
Protection	Waterproof (IP55)
Dimensions	250 × 120 × 85 mm (9.85 × 4.75 × 3.35 in.)
in carrying case:	260 × 220 × 95 mm (10.25 × 8.70 × 3.75 in.)
Weight	1.9 kg (4.2 lb.)
in carrying case:	2.5 kg (5.5 lb.)
Ambient temperature range	-20° to 50°C (-4 to 122°F)

## Sniffer Leak Detectors for Refrigerants and Fuels

### Ecotec® E3000

The Ecotec E3000 leak detector brings new levels of productivity and reliability to the final testing of refrigerators, freezers, automotive air conditioners and similar products. It is specifically designed for demanding production environments. Numerous features increase its user-friendliness and make it less sensitive to careless use and operator errors. It is also fast to make the best use of your available cycle time. Innovative design and robustness keep the cost of ownership down and ensure very high up-time.



# Ecotec® E3000

## ADVANTAGES

- **HIGHLY EFFICIENT**

Short cycle times: Thanks to high sensitivity all micro leaks can be found fast.

No cross sensitivity: IGS Mode (interfering gas suppression) ensures only leaks are detected.

Fast function check and calibration: The reference leak -ECO-Check- can be used either for function check or calibration of the E3000 at any anytime.

- **COST EFFICIENCY**

Low total cost of ownership (TCO). All components used in the Ecotec E3000 have been chosen for high reliability and long life.

- **SIMPLE TO USE AND TO INTEGRATE**

The operator is free to concentrate on the sniffing process after the initial set-up, since there is no need to access the base unit. All relevant messages will appear on the probe display, and all operator commands can be entered via the two push buttons on the probe handle.

A function check can easily and quickly be made at any time with the help of the built-in ECO-Check reference leak.

Easy and comfortable access to all leak testing sites thanks to the sniffer tip ergonomic design.

- **LOW MAINTENANCE**

Preventive maintenance can be performed with very little down time and is required very infrequently.

## APPLICATIONS

- Refrigerators and freezers
- Transportation refrigeration
- Cooling and refrigeration systems
- Air conditioning systems
- Water coolers
- Compressors and evaporators
- Halogen lamps
- Gas panels

# Ecotec® E3000

## ORDERING INFORMATION

ITEM	PART NUMBER
Ecotec E3000 Multigas Leak Detector	
230 V, 50 Hz	530-001
100/115 V, 50/60 Hz	530-002
Ecotec E3000, RC version	
230 V, 50 Hz	530-103
100/115 V, 50/60 Hz	530-104
Sniffer line with integrated display and push-buttons	
SL3000-3, 3 m length	525-001
SL3000-5, 5 m length	525-002
SL3000-10, 10 m length	525-003
SL3000-15, 15 m length	525-004
Sniffer line adapter for system integration	525-005
Sniffer tips	
ST 312, 120 mm, rigid	12213
FT 312, 120 mm, flexible	12214
ST 200, 200 mm, rigid	12218
FT 250, 250 mm, flexible	12266
ST 385, 385 mm, rigid	12215
FT 385, 385 mm, flexible	12216
FT 600, 600 mm, flexible	12209
ST 500, 500 mm, 45° angled	12272
Holder for sniffer probe	525-006
ECO-Check test leak, R134a <sup>1)</sup>	531-001
External display unit for Ecotec E3000RC	
Table top version	551-100
Rack version	551-101
Connecting cable for display unit, 5 m	551-102
Test leaks for refrigerants (2-5 g/a, 0.07-0.18 oz/y)	
R134a	12220
R600a	12221
R404A	12222
R152a	12227
R407C	12228
R410A	12229
R401a	12230
R1234yf	12235
R32 (2-8 g/a, 0.07-0.24 oz/y)	12236S
R290 (7-8 g/a, 0.25-0.28 oz/y)	12231
Test leaks for H <sub>2</sub> /forming gas (1.0-1.1 × 10 <sup>-4</sup> mbar l/s)	12322
Test leaks for refrigerants (10-14 g/a, 0.36 - 0.49 oz/yr)	
R134a (10-14 g/a, 0.36 - 0.49 oz/yr)	12240
R600a (14-18 g/a, 0.49 - 0.63 oz/yr)	12241
R404A (13-17 g/a, 0.46 - 0.60 oz/yr)	12242
R744 (CO <sub>2</sub> )	12275

<sup>1)</sup> Optional, not included with delivery of Ecotec E3000

# Ecotec<sup>®</sup> E3000

## SPECIFICATIONS

Minimum detectable leak rate	R134a	0.05 g/a (0.002 oz/yr)
	R600a	0.05 g/a (0.002 oz/yr)
	Helium	$1 \times 10^{-6}$ mbar l/s
Measurement range		0.05 – 999.99 g/a (0.002 – 99.999 oz/yr)
Sensor response time		0.3 s
Response time including sniffer line		0.8 s
Maximum number of simultaneously detectable gases		Four
Leak rate units		g/a; oz/yr; mbar l/s; Pa m <sup>3</sup> /s; ppm
Start-up time		<2 min
Dimensions (W × H × D)		610 × 370 × 265 mm (24 × 14.6 × 10.4 in.)
Weight		34 kg (75 lb.)
Gas flow		160 sccm
Ambient temperature range		+10 to 45°C

## Sniffer Leak Detectors for Refrigerants and Fuels

### Ecotec® E3000A

The Ecotec E3000A multigas leak detector is the reliable and low-cost solution for testing cooling circuits in airplanes. Simpler and measurably faster than conventional leak-testing methods, the Ecotec E3000A does not require evacuation. It simply “sniffs” for refrigerant leaks while the system is in use, reducing downtime and waste.

It comes with a library of more than 100 detectable gases including all refrigerants and heat transfer fluids used in Airbus airplanes as well as many other commonly used gases.

The Ecotec E3000A is officially recommended for use in the A340.



#### ADVANTAGES

- **HIGHLY EFFICIENT**

Short cycle times: Thanks to high sensitivity all micro leaks can be found fast.

No cross sensitivity: IGS Mode (interfering gas suppression) ensures only leaks are detected.

Fast function check and calibration: The reference leak -ECO-Check- can be used either for function check or calibration of the E3000A at any anytime.

- **COST EFFICIENCY**

Low total cost of ownership (TCO). All components used in the Ecotec E3000A have been chosen for high reliability and long life.

- **SIMPLE TO USE AND TO INTEGRATE**

The operator is free to concentrate on the sniffing process after the initial set-up, since there is no need to access the base unit. All relevant messages will appear on the probe display, and all operator commands can be entered via the two push buttons on the probe handle.

A function check can easily and quickly be made at any time with the help of the built-in ECO-Check reference leak.

Easy and comfortable access to all leak testing sites thanks to the sniffer tip ergonomic design.

- **LOW MAINTENANCE**

Preventive maintenance can be performed with very little down time and is required very infrequently.

#### APPLICATIONS

Leak-testing of

- Galley systems
- Transfer lines
- Main chiller system
- Air conditioning system and Fire extinguishing system



# Ecotec® E3000A

## ORDERING INFORMATION

ITEM	PART NUMBER
Ecotec E3000A including: 5 m sniffer line, power plug adapter for all major regions, 120 mm rigid sniffer tip, 385 mm flexible sniffer tip, built-in ECO-Check test leak, transportation case	
230 V, 50 Hz	530-101
100/115 V, 50/60 Hz	530-102

## SPECIFICATIONS

Minimum detectable leak rate	0.05 g/a (0.02 oz/yr)
Measurement range	0.5 – 50 g/a (0.02 – 1.76 oz/yr)
Response time	<1 s
Leak rate units	g/a; oz/yr; lb/yr; mbar l/s; Pa m <sup>3</sup> /s
Start-up time	<2 min
Max. no. of gases detected simultaneously	Four
Interfaces	RS232
Dimensions	580 × 260 × 350 mm (22.8 × 12.2 × 13.8 in.)
Weight	34 kg (75 lb.)
Gas flow	160 sccm
Ambient temperature range	+10 to 45°C
Software available in	English, German, Spanish, French, Italian, Portuguese, Chinese, Japanese (Katakana)
Warranty	Two years

## Sniffer Leak Detectors for Refrigerants and Fuels

### HLD6000

INFICON is taking a further step toward leak detection at the highest level with the HLD6000 refrigerant leak detector. It is setting new standards in user-friendly handling, reproducibility of measuring results and integration into local networks.

The newly developed, slim and ergonomically shaped sniffer line allows for more efficient leak detection. Furthermore, with its intuitive touchscreen display, the HLD6000 is even easier to operate than its predecessor the HLD5000. The HLD6000 also delivers the maximum in communication diversity. A USB interface as well as an optional I/O module and an optional fieldbus module are available for acquiring and using measurement data and integrating that data into local networks.



# HLD6000

## ADVANTAGES

- **HIGHLY EFFICIENT**

Detection system: The long-life infrared sensor offers both greater sensitivity and an extremely short response time, and has been specifically developed for the detection of refrigerants. This helps eliminate false alarms due to water, solvents or other contaminants.

Dual inlet system: The proven dual inlet system continually compares the background concentration and the measured gas flow, thus reducing false alarms to a minimum.

Optimized sniffer probe: The HLD6000 can be equipped with sniffer probes individually optimized to the gases to be detected. In addition to sniffer probes for CO<sub>2</sub> and for R600a/ R290, a universal Smart sniffer probe for halogen-based refrigerants is available.

- **COST EFFICIENCY**

Low total cost of ownership (TCO) for service and maintenance. The HLD6000 uses a wear-free sensor which maximizes user uptime.

- **SIMPLE TO USE AND TO INTEGRATE**

Especially slim and ergonomically designed sniffer probe with status and LED lights.

Intuitive touchscreen with leakage rate graph.

Newly designed COOL-Check holder to easily exchange internal test leak.

- **LOW MAINTENANCE**

The redesigned COOL-Check holder allows you to replace the built-in test leak quickly, precisely, and is easily changed by hand.

## APPLICATIONS

- Air conditioning systems
- Automotive air conditioning units
- Heat pumps, RAC components and similar products

# HLD6000

## ORDERING INFORMATION

ITEM	PART NUMBER
<b>BASE UNITS:</b>	
HLD6000 with R744 (CO <sub>2</sub> ) sniffer line and adapter for R744 (CO <sub>2</sub> ) calibration <sup>1)</sup>	510-025
HLD6000 with R600a/R290 sniffer line <sup>1)</sup>	510-028
HLD6000Plus with R600a/R290 sniffer line	510-128
HLD6000 with Smart sniffer line and COOL-Check® test leak	510-027
HLD6000Plus with Smart sniffer line and COOL-Check® test leak	510-127
The base units contain a sniffer line (4.8 m/15.5 ft.) and a standard sniffer tip (100 mm/3.9 in.).	
Sniffer lines to exchange with sniffer line (4.8 m/15.5 ft.)	
R744 (CO <sub>2</sub> ) sniffer lines	511-045
Smart sniffer line	511-047
Smart sniffer line plus	511-147
R600a/R290 sniffer line	511-048
R600a/R290 sniffer line plus	511-148
<b>OPTIONS, ACCESSORIES</b>	
I/O1000 module (input/output module)	560-310
BM1000 bus module	
Profibus	560-315
Profinet	560-316
DeviceNet	560-317
EtherNet/IP	560-318
Data cable (HLD6000-I/O1000)	
2 m cable length	560-332
5 m cable length	560-335
10 m cable length	560-340
Sniffer tip (100 mm/3.9 in.)	511-021
Sniffer tip (400 mm/15 in.)	511-024
Sniffer tip (400 mm/15 in.) pre-bent to half circle	511-022
Extension for sniffer tip:	
400 mm/15.7 in.	511-020
500 mm/19.7 in., 45° offset	511-029
Water protection tip	511-025
Extension for line cable, 4.8 m/15.5 ft.	511-040
Adapter for R744 (CO <sub>2</sub> ) calibration, included in HLD6000 base unit with R744 (CO <sub>2</sub> ) sniffer line	511-042
External test leaks	
R134a, (2-5 g/a, 0.07-0.18 oz/yr)	122 20
R600a, (2-5 g/a, 0.07-0.18 oz/yr)	122 21
R290, (7-8 g/a, 0.25-0.28 oz/yr)	122 31
R744(CO <sub>2</sub> ), (2-3.5 g/a, 0.07-0.12 oz/yr)	122 32
R1234yf, (2-5 g/a, 0.07-0.18 oz/yr)	122 35
R32, (2-8 g/a, 0.07-0.24 oz/yr)	122 36S
<b>CONSUMABLES:</b>	
Set of tip filter holders (20 units)	511-027
Set of filter cartridges (20 units)	511-018
Replacement COOL-Check® test leak <sup>2)</sup>	511-010

<sup>1)</sup> Without COOL-Check

<sup>2)</sup> Only for HLD6000 with universal Smart line; limited shelf life, purchase only when needed.

# HLD6000

## SPECIFICATIONS

Detectable refrigerants:	
with sniffer line for single gas detection	R600a/R290, R744 (CO <sub>2</sub> )
with universal Smart sniffer line	Halogen-based refrigerants
Minimum detectable leakage rate:	
with sniffer line for single gas detection	1.0 g/a/0.03 oz/yr
with universal Smart sniffer line	0.5 g/a/0.014 oz/yr
Response time	<1 s
Leakage rate units	g/a, mbar l/s, oz/yr, lb/yr, Pa m <sup>3</sup> /s
Warm-up time	<30 s
Digital inputs/outputs	10 inputs, eight outputs (for use with I/O1000 module)
Serial interface	RS232 (for use with I/O1000 module) or field bus systems (for use with Profibus module)
Dimensions (diameter; height)	266 mm, 365 mm (10.25 in, 14.4 in)
Weight	4.5 kg
Allowed operating temperature	+5 to 50°C (40 to 120°F)
Gas flow	320 sccm
Warranty	3 years

## Mobile Vacuum Leak Detectors

# UL6000 Fab

The UL6000 Fab is the most advanced leak detector in the semi industry, outperforming others in precision, durability and reliability. This industry-leading leak detector saves time throughout the testing sequence, and its intuitive handling helps maintenance teams in semi fabs find even the smallest leaks in record time. With a helium pumping speed of more than 36 Liters per second, the UL6000 Fab outperforms any other leak detector on the market by a minimum of 50%. As a result, the response time is much faster, an essential performance win for any maintenance team in semi fabs. The quicker leak indication makes it much easier to find small leaks faster and more reliably than ever before. Furthermore, due to a much faster background decline, the next leak check point can be tested much sooner for leak tightness by spraying helium, allowing the user to cover all test points in a significantly shorter time. As most leaks are comprised of multiple (up to hundreds) leak check points, expensive tool downtimes are shortened and, as an additional benefit, productivity increases. In summary, the reduced maintenance allows for shorter downtimes and increased productivity, leading to lower cost and reduced environmental impact of semi fabs at the same time.



**cTÜVus CERTIFIED  
(NRTL APPROVED)**

# UL6000 Fab

## ADVANTAGES

- **INNOVATIVE BOOSTER PUMP**  
Speed and precision, shorter response times and quicker helium removal, especially with large volumes.
- **VACUUM BACKING PUMP**  
Shortest pump-down time, very durable, requires minimal maintenance, resists water vapor pressure.
- **DURABLE SYSTEM**  
Extremely resistant against shock venting; requires only minimal maintenance.
- **I·CAL**  
Time-saving software algorithm; reduces noise to a minimum without missing details such as the slightest oscillations.
- **I·ZERO 2.0 – exclusively by INFICON**  
Low helium background in the briefest time; reliably detects even the smallest leaks.
- **MASSIVE MODE – exclusively by INFICON**  
Leak testing beginning at atmospheric pressure; spray method detects large leaks as well.
- **HYDRO·S – exclusively by INFICON**  
Eliminates the water content in the signal to quickly reach a low background at the beginning of the test.
- **I·CHECK**  
Measures helium concentration in the ambient air to ensure proper measuring conditions.

## APPLICATIONS

- Semiconductor manufacturing
- Flat screen manufacturing
- Solar cell manufacturing
- Aerospace

# UL6000 Fab

## ORDERING INFORMATION

ITEM	PART NUMBER
UL6000 Fab 100 to 230 V 50/60 Hz	550-220
<b>ACCESSORIES</b>	
DN63-ISO K Connection Kit (1x Bellow 1 m, 1x 90° elbow, 2x center ring, 2x clamp set)	551-225
DN63-ISO K/DN50 ISO KF Bellow 1 m	551-226
DN63-ISO K/DN40 ISO KF Bellow 1 m	551-227
Remote Control RC1000WL, wireless, incl. wireless transmitter	551-015
Remote Control RC1000C, wired, with 4m coiled cable	551-010
Vacuum Hose Holder (UL3000/UL6000 Fab)	551-202
SL3000-3, sniffer line 3 m length	525-001
SL3000-5, sniffer line 5 m length	525-002
SL3000-10, sniffer line 10 m length	525-003
Bracket for SL3000	551-203
SL200, Sniffer line + el. extension for UL6000	551-210
Helium Bottle Holder	551-201
IO1000 module	560-310
BM1000 Profibus module	560-315
BM1000 Profibus IO module	560-316
BM1000 DeviceNet module	560-317
BM1000 Ethernet/IP module	560-318
Data cable for IO1000, BM1000	
0.5 m	560-334
2 m	560-332
5 m	560-335
10 m	560-340

## SPECIFICATIONS

PROPERTY	VALUE
Min. detectable leak rate for helium (vacuum method)	$<5 \times 10^{-12}$ mbar l/s
Min. detectable leak rate for helium (sniffer mode)	$<5 \times 10^{-8}$ mbar l/s
Max. inlet pressure (MASSIVE mode)	atm (~1013 mbar)
Type of roughing pump	roots
Max. pumping speed of roughing pump	36 m <sup>3</sup> /h
Pumping Speed @100-1000 mbar pressure range	23
Pumping Speed @10-100 mbar pressure range	26
Pumping Speed @1-10 mbar pressure range	26
Max. Helium pumping speed (high_sensitive_mode_ULTRA)	>36 l/s
Max. Helium pumping speed DN63 reduced to DN40	~ 30 l/s
Response time for 50 l	1.4 s
Evacuation time to 1 mbar 50 l*	52 s
Evacuation time to 1 mbar 100 l*	104 s
Evacuation time to 1 mbar 500 l*	527 s
Evacuation time to 1 mbar 1000 l*	1054 s
Venting 50 l to atm.	16 s
Run up time for operation	<2 min
Time for Calibration	<30 s
Inlet Flange	DN63 ISO-K
Detectable Masses (ULTRATEST™ Sensor Technology)	2,3,4 (H <sub>2</sub> , <sup>3</sup> He, He)
Supply voltage	100 to 230 V 50/60 Hz
Max. Power Consumption	1500 VA
Typ. Power Consumption	700 VA
Weight	143 kg

\*extrapolated



## Mobile Vacuum Leak Detectors

# UL3000 Fab, ULTRA

No errors when maintaining your processing facilities. With the latest smart generation of our successful UL Series, you will reduce the maintenance for your processing facilities—and even more safely than ever before. Your processing equipment will remain free from contaminants during the leak detection. All the leaks will be reliably detected. After maintenance, the time-consuming pressure rise test will be passed with certainty. The UL3000 Fab helium leak detector is designed for every application where the greatest degree of cleanliness is required, such as the maintenance and production of semiconductor manufacturing equipment in cleanrooms.



cTÜVus CERTIFIED  
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# UL3000 Fab, ULTRA

## ADVANTAGES

- **SAVE TIME**

Save Time with I-CAL software algorithm for fast measurements in the range of  $10^{-9}$  to  $10^{-12}$  mbar l/s.

- **HIGHLY EFFICIENT**

I-ZERO 2.0 for fast background suppression. Minimize leak checking efforts through quick evacuation and response time.

- **COST EFFICIENCY**

Low total cost of ownership (TCO) enabled by robust ion source and counterflow vacuum system.

- **SIMPLE TO USE AND TO INTEGRATE**

Easy to use, operator-guided HMI with full color high resolution rotatable display.

## APPLICATIONS

- Semiconductor industry
- Solar industry
- Laser technology
- Medical technology
- And others such as electronics, accelerators, coating systems, gas supply systems, display tools, leak-testing of hermetically sealed electronic devices

# UL3000 Fab, ULTRA

## ORDERING INFORMATION

ITEM	PART NUMBER
ULTRATEST UL3000 Fab	550-200
ULTRATEST UL3000 Fab ULTRA (HYDRO•S, separate sniffer line SL3000 port)	550-260
<b>ACCESSORIES</b>	
RC1000 remote control, wired, incl. 4 m coiled cable	560-310
RC1000WL remote control, wireless, incl. wireless transmitter	560-315
Sniffer line SL200, 4 m length, incl. cable extension for electrical connection	551-210
Sniffer line SL3000 with integrated display (only for UL3000 Fab PLUS)	
3 m length	525-001
5 m length	525-002
10 m length	525-003
IO1000 module (chart recorder, RS232, RS485, Ethernet, digital IO)	560-310
BM1000 Profibus module	560-315
BM1000 Profibus IO module	560-316
BM1000 DeviceNet module	560-317
BM1000 Ethernet/IP module	560-318
Data cable (IO1000 to UL3000 Fab / -PLUS)	
0.5 m	560-334
5 m	560-335
10 m	560-340
Test Chamber TC1000	551-005
Helium bottle holder	551-201

## SPECIFICATIONS

	UL3000 Fab	UL3000 Fab ULTRA
Min. detectable leak rate for helium (vacuum method)		$<5 \times 10^{-12}$ mbar l/s
Min. detectable leak rate for helium (sniffer mode)		$<5 \times 10^{-8}$ mbar l/s
Max. inlet pressure		
MASSIVE mode		1,000 mbar
Pumping speed during evacuation	>32 m <sup>3</sup> /h	>36 m <sup>3</sup> /h
Helium pumping speed (high sensitive mode ULTRA)		4 l/s
Response time		<1 s
Time until ready for operation		<3 min
Detectable masses		2, 3, 4 (H <sub>2</sub> , <sup>3</sup> He, He)
Ion source	Two filaments, Iridium/Yttria oxide coated	
Test port	DN 25 KF	
Adjustable leak rate setpoints	Four	
Interface	2 × USB, Ethernet/LAN (prepared for USB WiFi Adapter for remote control with mobile devices)	
Supply voltages	100 – 240 V 50/60 Hz	
Power consumption	typ. 700 VA, max. 1500 VA	
Dimensions (L × W × H)	1050 × 472 × 987 mm (42 × 21 × 34 in.)	
Weight	118 kg	132 kg
Permissible ambient temperature range (during operation)	+10°C to 40°C	
Additional features	HYDRO S, separate sniffer line SL3000 port Scroll pump	

## Mobile Vacuum Leak Detectors

# UL1000 Fab

The standard in leak detection with stability and responsiveness on leaks down to  $10^{-12}$  atm/css. The INFICON UL1000 Fab mobile helium leak detector is specifically designed to meet the requirements of semiconductor applications. Making ease of use, leak detection efficiency and mobility within the fab environment system priorities, the UL1000 Fab provides an extremely fast leak rate response across all measurement ranges. The UL1000 Fab offers never before seen leak rate stability down to  $<5 \times 10^{-12}$  atm cc/s through an optimised vacuum architecture that combines high helium pumping speed and high inlet pressures. Proprietary software, I•CAL (Intelligent calculation algorithm of leak rates), allows you to forget long response times in low leak rate ranges as the UL1000 Fab responds quickly to all leak rate ranges. With the addition of the TC1000 Test Chamber accessory, the UL1000 Fab helium leak detector provides easy, fast and accurate testing of hermetically sealed parts like IC packages, quartz crystals and laser diodes (according to MIL-STD 883, Method 1014).



### ADVANTAGES

- **HIGHLY EFFICIENT**

Minimizes leak testing efforts through quick pump down and response time.

Avoids need for multiple leak tests by using selectable background suppression (I•ZERO).

- **COST EFFICIENCY**

Low total cost of ownership (TCO) enabled by robust two hot filament ion source (3 years warranty) and counterflow vacuum system.

- **SIMPLE TO USE AND TO INTEGRATE**

Enable easy access to maintenance areas with restricted space through maneuverable design.

Easy to use with rotatable display, optical and audible leak indication, and optional remote control.

- **LOW MAINTENANCE**

Low maintenance via a built-in test leak with auto calibration procedure.

# UL1000 Fab

## APPLICATIONS

Leak-testing of:

- Components
- Chambers
- Subassemblies

Used with:

- Semiconductor tools
- Flat panel display tools
- Leak-testing of hermetically sealed electronic devices

## ADVANCED SOFTWARE MENU AUTO LEAK TEST

This function controls the test cycle and allows entering of test parameters like:

- Measuring cycle time
- Leak rate setpoint
- Number of parts tested

The status of the test cycle can always be monitored on the display. The optional test chamber TC1000 (**TC1000 Test Chamber** [► 18]) turns the UL3000 in a user-friendly workstation for the testing of hermetically sealed parts.

The test starts automatically when the chamber lid is closed. Short cycle times are achievable ( $10^{-9}$  mbar l/s in <5 sec). The status of the test can always be monitored on the display. After the adjusted cycle time the test stops and the chamber will be vented. A selectable "Standby" mode keeps the chamber under vacuum while discontinuing the leak test. Protective functions prevent helium contamination by big leaks and ensure continuous operation.

# UL1000 Fab

## ORDERING INFORMATION

ITEM	PART NUMBER
ULTRATEST UL1000 Fab, 230 Volts, 50 Hz, EU line voltage plug	550-100A
ULTRATEST UL1000 Fab, 100/115 Volts, 50/60 Hz, US line voltage plug	550-101A
TC1000 test chamber incl. ESD wrist band	551-005
Test leak adapter for TC1000, DN 25 KF flange	200 001 797
RC1000C remote control, wired, including 4 m coiled cable	551-010
RC1000WL remote control, wireless, incl. wireless transmitter	551-015
Wireless transmitter for connection >2 leak detectors	551-020
Extension cable, 8 m for RC1000C	140 22
<b>ACCESSORIES</b>	
Toolbox with lock, attachable	551-000
Helium bottle holder	551-001
ESD mat	551-002
Sniffer line SL200, 4 m length	140 05

# UL1000 Fab

## SPECIFICATIONS

		PART NUMBER
Min. detectable leak rate for helium (vacuum mode)	$<5 \times 10^{-12}$ mbar l/s	
Min. detectable leak rate for helium (sniffer mode)	$<5 \times 10^{-8}$ mbar l/s	
Max. detectable leak rate for helium that can be displayed	0.1 mbar l/s	
Max. inlet pressure		
GROSS mode	15 mbar	
FINE mode	2 mbar	
ULTRA mode	0.4 mbar	
Pumping speed during evacuation	25 m <sup>3</sup> /h (17.6 cfm) at 50 Hz 30 m <sup>3</sup> /h (21.1 cfm) at 60 Hz	
Helium pumping speed		
ULTRA mode	2.5 l/s	
Time constant of the leak rate signal (blanked off, 63% of final value)	<1 s	
Pumpdown time until ready to detect leaks (background $5 \times 10^{-9}$ )		
Without additional volume	5 s	
At a test volume of 1 liter	10 s	
At a test volume of 10 liters	80 s	
Response time (for a leak rate of $10^{-9}$ mbar l/s)		
Up to a volume of 1 liter	<1 s	
Up to volume of 10 liters	<2 s	
Time until ready for operation	<3 min	
Detectable masses	2, 3, 4 amu, H <sub>2</sub> , <sup>3</sup> He, He	
Mass spectrometer	180° magnetic sector field	
Ion source	Two filaments, iridium/yttrium oxide-coated	
Calibrated leak TL7 (built-in) leak rate in the range	$10^{-7}$ mbar l/s	
Units of measurement (selectable)	mbar l/s, Pa m <sup>3</sup> /s, Torr l/s, atm cc/s, ppm, g/a (only in sniffer mode)	
Test port	25 KF	
Adjustable leak rate setpoints	Two	
Interface	RS 232	
In/outputs	PLC compatible for control and status information	
Chart recorder output	2 × 10 V	
Supply voltage	230 V (±10%) 50 Hz	550-500A
	115 V (±10%) 60 Hz	550-501A
	100 V (±10%) 50/60 Hz	550-501A
Power consumption	1100 VA	
Dimensions (L × W × H)	1068 × 525 × 850 mm (42 × 21 × 33 in.)	
Weight	110 kg (242 lb.)	
Type of protection	IP20	
Permissible ambient temperature (during operation)	+10°C to 40°C	

## Mobile Vacuum Leak Detectors

# UL1000

Speed, sensitivity and reliability for demanding leak detection applications. The INFICON UL1000 mobile helium leak detector is suitable for the demanding industrial leak detection applications. Providing fast, accurate and repeatable test results, testing flexibility, and high sensitivity in a low maintenance design, the UL1000 is ready to tackle the toughest leak detection jobs industry can offer. The UL1000 is optimized to provide quick, accurate results in any application from the leak checking of large vessels and systems to high—cycle, repetitive component testing—24 hours/7 days a week—in the toughest industrial environments. With the addition of the TC1000 test chamber accessory, the UL1000 helium leak detector provides easy, fast and accurate testing of hermetically sealed parts like IC packages, quartz crystals and laser diodes (according to MIL-STD 883, Method 1014).



### ADVANTAGES

- **HIGHLY EFFICIENT**

Using the special software algorithm I-CAL, the UL1000 provides accurate measurements at unsurpassed speed in all measurement ranges.

While other leak detectors must average the signal over long periods of time to ensure a stable leak rate, the UL1000 with I-CAL responds with unparalleled speed and stability even in the smallest leak rate ranges.

- **COST EFFICIENCY**

Low total cost of ownership (TCO) enabled by robust two hot filament ion source (3 years warranty) and counterflow vacuum system.

- **SIMPLE TO USE AND TO INTEGRATE**

Enable easy access to maintenance areas with restricted space through maneuverable design.

Easy to use with rotatable display, optical and audible leak indication, and optional remote control.

- **LOW MAINTENANCE**

Low maintenance via a built-in test leak with auto calibration procedure:



# UL1000

## APPLICATIONS

Leak-testing and quality control of all types of components including:

- Automotive components
- Refrigeration and air conditioning components and subassemblies
- Hermetically sealed electronic devices
- Heat exchangers

## ADVANCED SOFTWARE MENU AUTO LEAK TEST

This function controls the test cycle and allows entering of test parameters like:

- Measuring cycle time
- Leak rate setpoint
- Number of parts tested

The status of the test cycle can always be monitored on the display. The optional test chamber TC1000 (**TC1000 Test Chamber** [► 18]) turns the UL1000 in a user-friendly workstation for the testing of hermetically sealed parts.

The test starts automatically when the chamber lid is closed. Short cycle times are achievable ( $10^{-9}$  mbar l/s in <5 sec). The status of the test can always be monitored on the display. After the adjusted cycle time the test stops and the chamber will be vented. A selectable “Standby” mode keeps the chamber under vacuum while discontinuing the leak test. Protective functions prevent helium contamination by big leaks and ensure continuous operation.

# UL1000

## ORDERING INFORMATION

ITEM	PART NUMBER
ULTRATEST UL1000, 230 Volts, 50 Hz, EU line voltage plug	550-000A
ULTRATEST UL1000, 115 Volts, 60 Hz, US line voltage plug	550-001A
ULTRATEST UL1000, 110 Volts, 60 Hz, Japan line voltage plug	550-002A
TC1000 Test Chamber incl. ESD wrist band	551-005
Test leak adapter for TC1000, DN 25 KF flange	200 001 797
RC1000C remote control, wired, including 4 m coiled cable	551-010
RC1000WL remote control, wireless, incl. wireless transmitter	551-015
Wireless transmitter for connection >2 leak detectors	551-020
Extension cable, 8 m for RC1000C	140 22
<b>ACCESSORIES</b>	
Toolbox with lock, attachable	551-000
Helium bottle holder	551-001
ESD mat	551-002
Sniffer line SL200, 4 m length	140 05

# UL1000

## SPECIFICATIONS

		PART NUMBER
Min. detectable leak rate for helium (vacuum mode)	$<5 \times 10^{-12}$ mbar l/s	
Min. detectable leak rate for helium (sniffer mode)	$<5 \times 10^{-8}$ mbar l/s	
Max. detectable leak rate for helium that can be displayed	0.1 mbar l/s	
Max. inlet pressure		
GROSS mode	15 mbar	
FINE mode	2 mbar	
ULTRA mode	0.4 mbar	
Pumping speed during evacuation	16 m <sup>3</sup> /h (11.2 cfm) at 50 Hz	
Helium pumping speed		
ULTRA mode	2.5 l/s	
Time constant of the leak rate signal (blanked off, 63% of final value)	<1 s	
Pumpdown time until ready to detect leaks (background $5 \times 10^{-9}$ )		
Without additional volume	5 s	
At a test volume of 1 liter	10 s	
At a test volume of 10 liters	80 s	
Response time (for a leak rate of $10^{-9}$ mbar l/s)		
Up to a volume of 1 liter	<1 s	
Up to volume of 10 liters	<2 s	
Time until ready for operation	<3 min	
Detectable masses	2, 3, 4 amu, H <sub>2</sub> , <sup>3</sup> He, He	
Mass spectrometer	180° magnetic sector field	
Ion source	Two filaments, iridium/yttrium oxide-coated	
Calibrated leak TL7 (built-in) leak rate in the range	$10^{-7}$ mbar l/s	
Units of measurement (selectable)	mbar l/s, Pa m <sup>3</sup> /s, Torr l/s, atm cc/s, ppm, g/a (only in sniffer mode)	
Test port	25 KF	
Adjustable leak rate setpoints	Two	
Interface	RS 232	
In/outputs	PLC compatible for control and status information	
Chart recorder output	2 × 10 V	
Supply voltage	230 V (±10%) 50 Hz	550-000A
	115 V (±10%) 60 Hz	550-001A
	100 V (±10%) 50/60 Hz	550-001A
Power consumption	1100 VA	
Dimensions (L × W × H)	1068 × 525 × 850 mm (42 × 21 × 33 in.)	
Weight	110 kg (242 lb.)	
Type of protection	IP20	
Permissible ambient temperature (during operation)	+10°C to 40°C	

## Leak Detectors for System Integration

# LDS3000

With the LDS3000, INFICON is opening a new chapter in the success story of leak detection systems. The successor to the LDS2010 is setting new standards for accuracy, reproducibility of measurement results and speed of leak detection. The LDS3000 is extremely compact. The small dimensions 330 × 240 × 280 mm (13 × 9.45 × 11.1 in.) make it even easier to integrate it into leak detection systems. More importantly, the space requirements and installation expense have been reduced even further by dispensing with a 19" control module and improving the cabling considerably. In addition, there is an optional touch screen for easy operation and an optional field bus connection.



**cTÜVus CERTIFIED  
(NRTL APPROVED)**

# LDS3000

## ADVANTAGES

- **HIGHLY EFFICIENT**

Fast and optimized response times due to I·CAL.

- **COST EFFICIENCY**

Low total cost of ownership (TCO) enabled by robust two hot filament ion source (3 years warranty).

- **CLEVER INVESTMENT**

XL Sniffer Adapter converts the LDS3000 into a sniffer leak detector. Versatile communication through numerous analog and digital interface. LDS2010 compatibility mode. Significantly optimized cabling increases usage flexibility, even lengths of up to 30 m are possible.

Versatile communication through numerous analog and digital interface.

LDS2010 compatibility mode.

Significantly optimized cabling increases usage flexibility, even lengths of up to 30 m are possible.

- **SIMPLE TO USE AND TO INTEGRATE**

Fast and easy updates are possible through USB port.

Compact design allows individual, customized integration into leak testing system.

cTÜVus – Certified according to Canadian and US standards (NRTL approved)

## APPLICATIONS

The flexibility of the LDS3000 makes the instrument ideal for the integration into complex helium leak detection systems:

- Airbag parts
- Evaporators, condensers, compressors
- Valves, brake lines, fuel lines
- Hydraulic components and Motors

# LDS3000

## ORDERING INFORMATION (BASIC COMPONENTS)

ITEM	PART NUMBER
LDS3000 basic unit	560-300
I/O1000 module (input/output)	560-310
BM1000 bus module	
Profibus	560-315
Profinet	560-316
DeviceNet	560-317
EtherNet/IP	560-318
Data cable (MSB-I/O1000)	
2 m cable length	560-332
5 m cable length	560-335
10 m cable length	560-340

NOTE: An I/O1000 module or BM1000 module as well as a data cable are necessary for the operation of an LDS3000. The data cables can be used for connecting to an I/O1000 module or a BM1000 module and the CU1000 control unit.

## ORDERING INFORMATION (OPTIONS)

ITEM	PART NUMBER
CU1000 Control Unit	560-320
DIN rail power supply 24 V, 10 A	560-324
Internal test leak TL7	560-323
Pump module (complete, incl. connection accessories) TRIVAC D 4 B, 1-phase motor 230 V, 50/60 Hz	145 11
Sniffer valve	145 20
Sniffer line, incl. handpiece, with 200 mm sniffer tip	
3 m cable length	145 21
5 m cable length	145 22
10 m cable length	145 23
Replacement sniffer tip, 400 mm cable length	200 04 642
XL Sniffer Adapter	560-319
Diaphragm pump <sup>1)</sup>	560-330
External calibrated leak with 100% H <sub>2</sub> <sup>2)</sup>	12322
External helium calibrated leak	12237
Sniffer line to use in combination with the XL Sniffer Adapter	
SL3000XL-3, 3 m cable length	521-011
SL3000XL-5, 5 m cable length	521-012
SL3000XL-10, 10 m cable length	521-013
SL3000XL-15, 15 m cable length	521-014

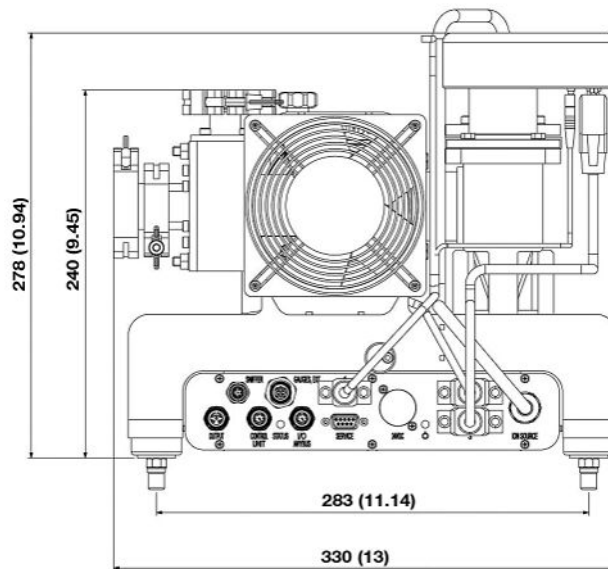
<sup>1)</sup> Recommended to use with the XL Sniffer Adapter.

<sup>2)</sup> Leak rate of calibrated leak corresponds to (95/5) forming gas leak rate.

# LDS3000

## SPECIFICATIONS

Minimum detectable leak rate	
GROSS mode	$\leq 1 \times 10^{-11}$ mbar l/s (> 5 l/s Helium pumping speed)
FINE mode	$\leq 5 \times 10^{-11}$ mbar l/s (1.7 l/s Helium pumping speed)
ULTRA mode	$\leq 1 \times 10^{-9}$ mbar l/s
SNIFFER mode	$\leq 1 \times 10^{-7}$ mbar l/s
Units of measurement (selectable)	mbar l/s, Pa m <sup>3</sup> /s, atm cc/s, g/a, ppm
Maximum permissible inlet pressure	
GROSS mode	18 mbar
FINE mode	0.9 mbar
ULTRA mode	0.2 mbar
Response time	<1 s
Ion source	Two longlife iridium filaments, yttrium-oxide coated
Vacuum connections	DN 16 KF/DN 25 KF
Digital inputs/outputs	10 inputs, eight outputs (when used with I/O1000)
Control input	PLC compatible (max. 35 V)
Chart recorder output lin/log	0 – 10 V
Interface	RS232, RS485 or field bus systems
Dimensions (L × W × H)	330 × 240 × 280 mm

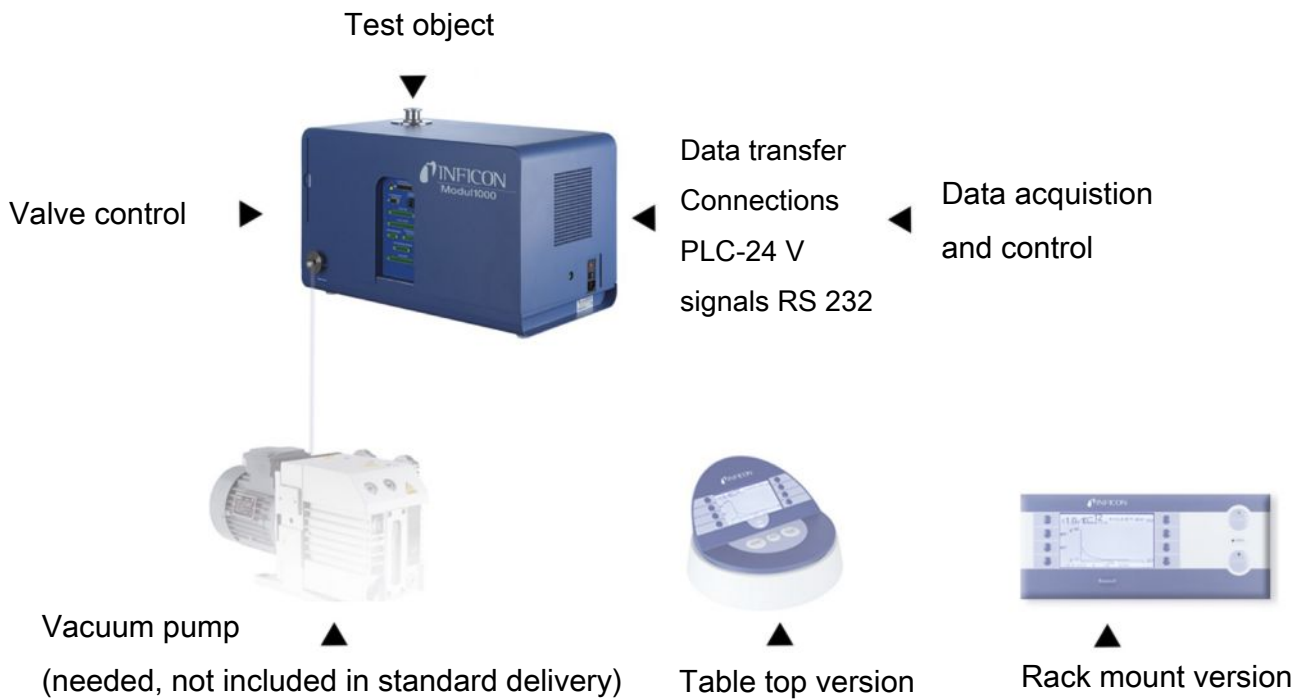


Dimensional drawing of the mass spectrometer module in mm (in)

## Leak Detectors for System Integration

### Modul1000

Building up a leak test bench was never easier. The Modul1000 is the world's first leak detector that fulfills jobs which are normally done by a PLC. The detector itself provides all necessary valves for a vacuum leak test and controls the complete leak test process from charging the test object with helium until venting of the test chamber.





# Modul1000

## ADVANTAGES

- **HIGHLY EFFICIENT**

Wide range detection system: from 0.1 to  $< 5 \times 10^{-12}$  mbar l/s.

Software algorithm I•CAL provides accurate test results in all measurement ranges.

Wide range power supply and integrated test leak.

- **COST EFFICIENCY**

Low cost of ownership. The ion source filament is designed for long life and is supported with a 3-year replacement guarantee to minimize costly unscheduled downtime and maintenance expenses.

- **FUTURE-PROOF INVESTMENT**

Supports any size of foreline pump.

- **SIMPLE TO USE AND TO INTEGRATE**

Compact design for easy integration in benchtop or rack systems. Compact design for easy integration in benchtop or rack systems.

Plug & play installation; flexible interfaces.

Flexible control via optional display unit, remote control, PLC or PC.

Storage of parameter settings for easy data transfer on an integrated, removable I•STICK.

- **LOW MAINTENANCE**

Low maintenance due to ion source filament and self-diagnostics capability.

## APPLICATIONS

The Modul1000 was especially designed for integration into medium automated test benches:

- Evaporators, condensers, compressors
- Valves
- Brake lines, fuel lines
- Hydraulic components
- Motors

# Modul1000

## ORDERING INFORMATION

ITEM	PART NUMBER
Modul1000, vacuum version	550-300A
Modul1000, vacuum and sniffer version	550-310A
Modul1000b, vacuum and sniffer version	550-330A
Display unit, table top use	551-100
Display unit for rack installation	551-101
Connecting cable for display unit	
0.7 m (2.3 ft)	551-103
5 m (16.4 ft)	551-102
Set of connecting plugs	551-110
Sniffer line SL200	140 05
Remote control RC1000C, wired including 4 m coiled cable	551-010
Remote control RC1000WL, wireless, incl. wireless transmitter	551-015
Wireless transmitter for connection >2 leak detectors	551-020
Extension cable, 8 m for RC1000C	140 22
TC1000 Test Chamber	551-005

## SPECIFICATIONS

Minimum detectable leak rate	
VACUUM mode	$<5 \times 10^{-12}$ mbar l/s
SNIFFER mode	$<5 \times 10^{-8}$ mbar l/s
Maximum inlet pressure	0.4 mbar 3 mbar (Modul1000b)
Operational mode	Wide range without crossover (12 decades)
Helium pumping speed at inlet	2.5 l/s 0.1 l/s (Modul1000b)
Ion source	Two longlife iridium filaments, yttrium-oxide coated
Start-up time	<3 min
Inlet port/fore-vacuum port	DN 25 KF
Power supply	100 – 240 V, 50/60 Hz
Control inputs	8 × PLC compatible, max. 35 V
Status/Valve control/trigger outputs	9/11/3 × relay contacts, max. 60 V AC/ 25 V DC / 1 A
Chart recorder output lin/log	2 × 0-10 V, programmable
Recommended fore-vacuum pump	2.5 - 16 m <sup>3</sup> /h, wet or dry
Dimensions (W × D × H)	535 × 350 × 339 mm (21.1 × 13.8 × 13.4 in.)
Weight	30 kg (66 lb.)

## Accumulation Leak Detector

# LDS3000 AQ

LDS3000 AQ is the first leak detector to use forming gas or helium in a simple accumulation chamber.

The LDS3000 AQ is very sensitive and can detect leaks down to the  $10^{-5}$  mbar l/s range. It will detect fluid leaks as reliably as helium vacuum leak—testing, but with costs practically as low as for air testing. The real differentiator: The new leak detector uses the cost-efficient forming gas or helium for accumulation leak — testing.



### ADVANTAGES

- **HIGHLY EFFICIENT**

With the accumulation method, INFICON is closing the gap between air and vacuum testing, while still achieving measurement results quickly and without any effect from temperature or moisture.

The minimum detectable leak rate is down to a range of  $10^{-5}$  mbar·l/s

- **FUTURE-PROOF INVESTMENT**

The ability to reliably perform leak testing not just with helium, but also with forming gas, means that you can be confident in the decision you take today.

Another special feature of the LDS3000 AQ is that with a simple change of operating mode, the leak detector can also be used for a vacuum system. One device that offers several solutions. With its variety of modern interfaces, the LDS3000 AQ already provides you with a future-proof solution today.

- **COST EFFICIENCY**

The LDS3000 AQ and the accumulation method allow customers to meet high quality requirements, save costs and minimize investment all at the same time.

- **SIMPLE TO USE AND TO INTEGRATE**

The special accumulation software of the LDS3000AQ allows customers to easily define the measuring period. Just a few parameters have to be entered, such as the chamber size, type of gas, leak rate etc., and the device then calculates a suggested measuring period, which simply has to be accepted.

# LDS3000 AQ

## APPLICATIONS

- Leak detection for room air conditioner components, refrigeration components or heating components
- Manufacturers of automotive gas lines, small heater coils, etc. that are now demanding greater leak tightness
- Leak detection involving warm, humid or large parts, where the pressure decay method is ineffective
- Other markets where helium vacuum leak detection has been considered too costly or complex

## ORDERING INFORMATION (BASIC COMPONENTS)

ITEM	PART NUMBER
LDS3000 AQ (incl. inlet system and special accumulation Software)	560-600
I/O1000 module (input/output)	560-310
BM1000 bus module	
Profibus	560-315
Profinet	560-316
DeviceNet	560-317
EtherNet/IP	560-318
Data cable (MSB-I/O1000)	
2 m cable length	560-332
5 m cable length	560-335
10 m cable length	560-340

NOTE: An I/O1000 module or BM1000 module as well as a data cable are necessary for the operation of an LDS3000. The data cables can be used for connecting to an I/O1000 module or a BM1000 module and the CU1000 control unit.

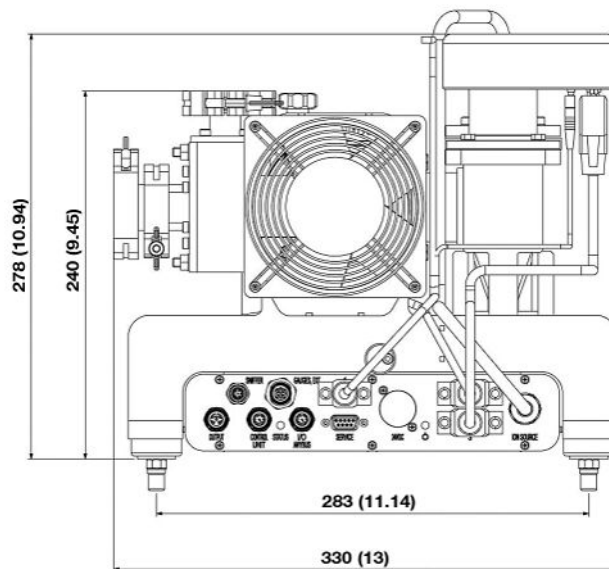
## ORDERING INFORMATION (OPTIONS)

ITEM	PART NUMBER
CU1000 Control Unit	560-320
DIN rail power supply 24 V, 10 A	560-324
Diaphragm pump LDS3000 AQ	560-630

# LDS3000 AQ

## SPECIFICATIONS

Minimum detectable forming gas or helium leak rate	$1 \times 10^{-5}$ mbar l/s
Measurement range	5 decades
Test chamber pressure	1 atm
Time constant of the leak rate signal	<1 s
Gas sensor	180° sector field mass spectrometer
Run-up time	<3 min
Field buses available	PROFIBUS, PROFINET, DeviceNet, EtherNet/IP
Connections	ISO-KF DN16
Control input	PLC compatible, max. 35 V
Status / trigger outputs	8 × relay contacts, max. 25 V AC/ 60 V DC/ 1 A
Chart recorder output lin/log	0 - 10 V
Dimensions (L × W × H)	330 × 240 × 280 mm



Dimensional drawing of the mass spectrometer module in mm (in)

## Accumulation Leak Detectors

# T-Guard2

COST EFFECTIVE, RELIABLE AND ALMOST MAINTENANCE-FREE

T-Guard2 Leak Detection Sensor closes the gap between costly hard vacuum helium leak detection and low sensitivity leak testing methods like water bath and pressure decay. There is no faster and more cost-effective way of repeatable leak testing in the measurement range of T-Guard2.



### ADVANTAGES

- **LOW OPERATING COST**

The INFICON Wise Technology helium sensor does not need a vacuum, turbo- pump, or maintenance.

- **NO LIMITATION OF PRODUCT PROPERTIES**

Even warm or humid objects, and those can not be well operated under vacuum can be leak tested.

- **SIMPLE AND LOW COST CHAMBER**

T-Guard2 works at atmospheric pressure, therefore there is no need for vacuum chambers and pumps.

- **FIND ALL LEAKS RELIABLY**

With INFICON Wise Technology leaks down to E-6 mbarl/s can be detected reliably.

- **EASY TO USE**

The intelligent software and optional display units supply easy operation through an intuitive menu structure.

- **FLEXIBLE CONTROL**

Choose between PLC, PC or optional display and Profibus.

### APPLICATIONS

- Wherever pressure decay and water bath systems are used or are not sensitive enough.
- Leak detection for water coolers and radiators. Big valves, e.g., for chemical applications.
- Manufacturers of automotive gas lines and tanks, small heater coils, etc. that are now demanding greater leak tightness.
- Leak detection involving warm, humid or large parts, where the pressure decay method is ineffective
- Other markets where helium vacuum leak detection has been considered too costly or too complex.

# T-Guard2

## ORDERING INFORMATION

ITEM	PART NUMBER
T-Guard2 Leak Detection Sensor	540-200
T-Guard2 Leak Detection Sensor with Profibus	540-201
<b>OPTIONS, ACCESSORIES</b>	
Control Unit, table top version	551-100
Control Unit, rack version	551-101
Cable 5 m for 551-100	551-102
Connecting cable ext. Control Unit, 0.7 m	551-103
Plug set	551-110
I-Stick	200001997

## SPECIFICATIONS

Minimum detectable leak rate	$1 \times 10^{-6}$ mbar l/s
Measurement range	Five decades
Test chamber pressure	1 atm
Maximum carrier gas flow	1,000,000 sccm
Probe gas flow Fine / Gross	180 sccm / 90 sccm
Time constant of the leak rate signal	<1 s
Helium sensor	WISE Technology™
Run-up time	<3 min
Hose connectors	6 mm
Control inputs	6 × PLC compatible, max. 35 V AC
Status / trigger outputs	8 × relay contacts, max. 60 V AC/ 25 V DC/ 1 A
Chart recorder output lin/log	2 × 0...10 V, programmable
Power supply demand / power consumption	24 V DC / 100 W
Type of protection	IP20
Dimensions (L × W × H)	272 × 130 × 272 mm (10.7 × 5.1 × 10.7 in.)
Weight	6.8 kg / 15 lbs
Noise level dB (A)	<56
Typical power consumption	<100 W
Recommended fore pump	Two-stage diaphragm

## Leak Detectors for Packaging

# Contura® Leak Tester Series S400, S600

The Contura S400 and the Contura S600 with extra-large flexible chamber use the pressure rise method in a flexible test chamber to reliably and non-destructively detect both extremely small leaks and gross leaks, therefore ensuring consistently high quality of food packaging.

During evacuation of the test chamber, the two highly flexible membranes adjust to fit the contour of the test specimen without damaging it. If there is a leak, gas flows out of the packaging into the evacuated test chamber.



### ADVANTAGES

- No tracer gas required
- Non-destructive testing
- Test sensitivity: detection of even the finest of leaks (hole sizes <math><10 \mu\text{m}</math>)
- Wide dynamic range: Include cross-leak detection
- Rapid and reliable leak-testing: measuring time: <math><12 \text{ sec}</math>
- Immediate and quantitative indication of leak rate
- Multiple possibilities for integrating into production lines
- Reduction in rates of complaint and processing costs
- Reinforcement of the image through always durable goods and defect-free packaging

### APPLICATIONS

- Leak testing of coffee capsules, food and pharmaceutical packaging
- Use in test laboratories or directly on the production lines
- Support of the new quality processes and newly installed packaging machines



# Contura<sup>®</sup> Leak Tester Series S400, S600

## ORDERING INFORMATION

ITEM	PART NUMBER
Contura S400	570-000
Contura S600	574-000
Additional test leaks	
Con-Check	571-000
Pac-Check	572-000
Calibration kit	573-000

## SPECIFICATIONS

	S400	S600
Usable chamber size (L × W × H)	400 × 350 × 200 mm (15.7 × 13.7 × 7.9 in.)	550 × 450 × 250 mm (21.7 × 17.7 × 9.8 in.)
Unit dimensions (L × W × H)	725 × 535 × 475 mm (28.5 × 21.0 × 18.7 in.)	800 × 780 × 420 mm (31.5 × 30.7 × 16.5 in.)
Weight	46 kg	61 kg
Test duration		<12 s
Smallest detectable (hole diameter)	<10 µm	10 µm
Calibration		Not necessary
Warm-up time		<1 min
Housing		Stainless steel, IP20D
Power supply		115 /230 V ± 10% / 50 Hz – 60 Hz
Interfaces		USB /n etwork / RS232 serial
Display		7 in. touchscreen
Barcode reader		User and product selection

## Natural Gas Leak Detectors

### IRwin®

IRwin® Methane Leak Detector is an innovative natural gas detector for easy gas pipes survey and gas leak detection. Developed in accordance with many national directives, as the DVGW (Deutscher Verband des Gas- und Wasserfaches) directive, this natural gas leak detector is portable and has explosion-proof models certified for use in Zone 0, classification Ex II 1G, Ex ia IIC T3 Ga, Intrinsically Safe Class I, Division 1, Groups A, B, C and D, T3.

The integrated proprietary IR sensor has a very short reaction and recovery time and also a high sensitivity. This prevents false alarms when searching for gas leaks. In addition, a correct and fast leak evaluation is ensured. The range is from 1 ppm to 100 Vol.%.



## IRwin®

### ADVANTAGES

- **HIGHLY EFFICIENT**

The specially developed gas chromatograph (GC) and sensor combination allows near realtime distinction between swamp gas and natural gas.

Improved efficiency with high sensitivity, fast reaction and short recovery time.

Accurate gas analysis enabled through improved IR-technology.

Automatic documentation of survey results.

- **COST EFFICIENCY**

This multi-function instrument efficiently operates on different surfaces and situations during survey, is highly sensitive, responds quickly and has a short recovery time.

- **EASY TO USE**

Thanks to quick install fittings, the user can easily apply the correct probe for the specific working situation.

Modular system for quick probe change.

- **LOW MAINTENANCE**

All needed items are easily carried – no need for extra trips to your vehicle.

Filter change done in the field with a minimum of tools.

### APPLICATIONS

- Natural gas pipelines (Distribution and Transmission)
- Biogas
- In-house gas lines
- Natural gas production companies
- Landfill Surface Emission Monitoring


**ORDERING INFORMATION**

ITEM	PART NUMBER
<b>INSTRUMENTS</b>	
IRwin S	580-000
IRwin SX	580-010
IRwin SXT	580-015
IRwin SXG	580-020
IRwin SXGT	580-030
<b>ACCESSORIES</b>	
IRwin Accessories Kit	580-712
Carpet Probe 'Mono Wheeler'	580-210
Bell Probe	580-300
Carpet (without locking mechanism)	580-211
Bell	580-301
Flexi Bell	580-305
Hand Probe	580-100
Hand Probe Flexible Extension	580-110
Rod, 850 mm (33.4 in.)	580-150
Short Rod, 600 mm (23.6 in.)	580-140
Extension Rod, 150 mm (5.9 in.)	580-160
Compact Rod	580-170
Bar Hole Probe, for 13–18 mm (0.5–0.7 in.) holes diameters	580-115
Swan Neck Probe	580-120
Extension Connector	580-220
Transport case	580-450
Transport Case for Compact Kit	581-314
Mat	580-127
Harness	580-405
Compact Kit	580-240
Protector Bell Assembly	581-932
ODFR, On Demand Flow Regulator US For C10 bottles 5/8"x18 UNF	580-230
ODFR, On Demand Flow Regulator DE for aerosol/minican 7/16"x28 UNEF	580-235



## SPECIFICATIONS

TYPE	IRwin S	IRwin SX	IRwin SXT	IRwin SXG	IRwin SXGT
<b>DETECTABLE GASES</b>					
Methane	CH <sub>4</sub>	CH <sub>4</sub>	CH <sub>4</sub>	CH <sub>4</sub>	CH <sub>4</sub>
Carbon dioxide	CO <sub>2</sub>	CO <sub>2</sub>	CO <sub>2</sub>	CO <sub>2</sub>	CO <sub>2</sub>
Ethane	C <sub>2</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>6</sub>	C <sub>2</sub> H <sub>6</sub>
Propane		C <sub>3</sub> H <sub>8</sub>	C <sub>3</sub> H <sub>8</sub>	C <sub>3</sub> H <sub>8</sub>	C <sub>3</sub> H <sub>8</sub>
Butane		C <sub>4</sub> H <sub>10</sub>	C <sub>4</sub> H <sub>10</sub>	C <sub>4</sub> H <sub>10</sub>	C <sub>4</sub> H <sub>10</sub>
Carbon monoxide			CO		CO
Oxygen			O <sub>2</sub>		O <sub>2</sub>
Hydrogen sulfide			H <sub>2</sub> S		H <sub>2</sub> S
Sensitivity	1 ppm to 100% CH <sub>4</sub>	1 ppm to 100% CH <sub>4</sub>	1 ppm to 100% CH <sub>4</sub>	1 ppm to 100% CH <sub>4</sub>	1 ppm to 100% CH <sub>4</sub>
Operating time	min. 8 h	min. 8 h	min. 8 h	min. 8 h	min. 8 h
Power supply	Lithium Ion battery, 100% in 4 h; fast charge in 3 h	Lithium Ion battery, 100% in 4 h; fast charge in 3 h	Lithium Ion battery, 100% in 4 h; fast charge in 3 h	Lithium Ion battery, 100% in 4 h; fast charge in 3 h	Lithium Ion battery, 100% in 4 h; fast charge in 3 h
IP protection type	IP54	IP54	IP54	IP54	IP54
Operating temperature	-20°C to 50°C (-4 to 122°F)	-20°C to 50°C (-4 to 122°F)	-15°C to 40°C (5 to 104°F)	-20°C to 50°C (-4 to 122°F)	-15°C to 40°C (5 to 104°F)
Storage temperature	-25°C to 70°C (-13 to 158°F)	-25°C to 70°C (-13 to 158°F)	-25°C to 70°C (-13 to 158°F)	-25°C to 70°C (-13 to 158°F)	-25°C to 70°C (-13 to 158°F)
Humidity	max. 95% RH, not condensing	max. 95% RH, not condensing	max. 95% RH, not condensing	max. 95% RH, not condensing	max. 95% RH, not condensing
Dimensions (W × H × D)	197 × 256 × 62 mm (7.7 × 10 × 2.4 in.)	197 × 256 × 62 mm (7.7 × 10 × 2.4 in.)	197 × 256 × 62 mm (7.7 × 10 × 2.4 in.)	197 × 256 × 62 mm (7.7 × 10 × 2.4 in.)	197 × 256 × 62 mm (7.7 × 10 × 2.4 in.)
<b>WEIGHT</b>					
Instrument	approx. 1.4 kg (3 lb.)	approx. 1.6 kg (3.5 lb.)	approx. 1.6 kg (3.5 lb.)	approx. 1.6 kg (3.5 lb.)	approx. 1.6 kg (3.5 lb.)
Instrument and probe system	approx. 3 kg (6 lb.)	approx. 3 kg (6 lb.)	approx. 3 kg (6 lb.)	approx. 3 kg (6 lb.)	approx. 3 kg (6 lb.)

## Service Tools for HVAC and Automotive

# D-TEK® Stratus

Find leaks in no time!

The D-TEK Stratus combines the outstanding leak detection capabilities of D-TEK Select and the gas cloud search of a portable monitor in a handheld device. Quickly determine the area where the leak is located using the large, easy-to-read LCD screen and then localize the leak with the same device! The D-TEK Stratus is the next big step in the world of refrigerant leak detection.

### APPLICATIONS

- Industrial AC and Refrigeration

More information about our service tools is available at

[www.inficonserVICETOOLS-europe.com](http://www.inficonserVICETOOLS-europe.com)

We will be happy to receive your request by e-mail at

[serVICETOOLS.europe@inficon.com](mailto:serVICETOOLS.europe@inficon.com)



### ADVANTAGES

- **HIGHLY EFFICIENT**

Sensitivity of 0.03 oz/year (1 g/year).

Innovative cloud hunter mode with ppm display - locates leaks faster than ever

Detects all CFCs, HCFCs, HFCs, and HFOs.

Sensitivity does not decrease over time.

- Fully redesigned infrared sensor:

- Longest sensor life in the industry
- Easy field replacement

- **COST EFFICIENCY**

With the cloud hunter and pinpoint modes, you have two leak detectors in one.

- **SIMPLE TO USE AND TO INTEGRATE**

Automatic and manual zero modes.

Rugged carrying case included.

- New lithium ion battery:

- Quick charge capability
- Easy field replacement

# D-TEK<sup>®</sup> Stratus

## ORDERING INFORMATION

ITEM	PART NUMBER
D-TEK Stratus	724-202-G11
Accessories and replacement parts	
Earphones	721-607-G1
TEK-Check R134a test leak	703-080-G10
Charger US and International)	721-606-G1
12 V DC car charger	721-605-G1
Lithium ion battery	721-702-G1
Battery charging station	721-610-G1
Battery charging station combination	721-604-G1
Needle probe extension	721-612-G1
Refrigerant sensor (detects CFCs, HFCFs, HFCs and HFOs)	721-701-G1
CO <sub>2</sub> sensor	Available soon
Filter cap	712-705-G1
Filter cartridges	712-707-G1
Transport case	724-700-G1

## SPECIFICATIONS

Contains	D-TEK Stratus Infrared sensor Lithium ion battery Replacement filter AC charger DC car charger Extra long probe Transport case Earphones
Compatible refrigerants	R22, R32, R134a, R404a, R407c, R410a, R422b, R448a, R449a, R452a, R452b, R507 (AZ50), R1234yf, CO <sub>2</sub> (requires CO <sub>2</sub> sensor) ammonia, SF6 and others
Energy source	Lithium ion battery (rechargeable) USB (useable when charging)
Battery life	~ 8 hours (cloud hunter mode) ~ 10 hours (leak detection mode)
Weight	490 g
Certificates	CE SAEJ2791 SAEJ2913 EN14624:2012 A2L certified
Probe length (standard probe)	38 cm
Warranty	2 years





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# **Accessories**

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# Accessories

## Gas fillers

Sensistor® ILS500 F Leak Detection Filler .....	C1
TGF11 Tracer Gas Filler .....	C3

## Test Leaks

Calibrated Test Leaks .....	C5
Sniffer Application .....	C8
Calibration Leaks for Sensistor Leak Detectors .....	C10
CalMate Adapter for Calibrated leaks .....	C11
Con-Check and Pac-Check .....	C12
Test Leaks with Gas Reservoir for Vacuum and Sniffer Applications .....	C13
Calibrated Test Leaks with Gas Reservoir for Vacuum Applications .....	C14

## Miscellaneous

Accessories Leak Detection Systems .....	C15
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## Gas Filler

# Sensistor® ILS500 F

The Sensistor ILS500 F is a tracer gas filler. This unit can be combined with both helium and hydrogen INFICON leak detectors. Available also in high pressure version, ILS500 F can perform a complete test sequence, from gas injection and evacuation to tooling connection and disconnection, gross leak test, vacuum decay test, pressure decay test, blockage test and recipe handling.



### ADVANTAGES

- Complete tooling and gas filling function for high-quality automatic leak detection.
- Eliminates the need for time-consuming manual tracer gas filling.
- Less operator dependence - full control over all test steps.
- Significantly improves test quality assurance.
- Compact unit, simple to combine with all INFICON leak detectors.
- Shorter cycle times.
- The system uses well proven and tested components and subsystems.

### APPLICATIONS

- Industry
- Automotive
- Packaging
- RAC
- Medical

# Sensistor® ILS500 F

## ORDERING INFORMATION

ITEM	PART NUMBER
ILS500 F versions	
Sensistor ILS500 F	590-580
Sensistor ILS500 FHP, high pressure model	590-581
ACCESSORIES	
No-Stop Maintenance Kit	590-680
No-Stop Maintenance Kit HP	590-685

## SPECIFICATIONS

Start time	37 s
Supplies	<p>Electrical:</p> <p>Mains Voltage: Single Phase, 85-260 V AC / 47-63 Hz</p> <p>Current: 1.0 A @ 100 V AC / 0.45 A @ 230 V AC</p> <p>Power Rating: 120 W max. / 33 W typical average</p> <p>Compressed Air:</p> <p>Standard Pressure version: 0.35 – 0.7 MPa (50 – 100 psi).</p> <p>High Pressure version: 0.5 – 0.7 MPa (70 – 100 psi)</p> <p>Peak Consumption @ 0.6 MPa (87 psi): 240 l/min (508 SCFH)</p> <p>Tracer gas:</p> <p>No corrosive, condensable nor oxidizing gas</p> <p>Standard Pressure version: 0.005 – 1.0 MPa (0.72 – 145 psi)</p> <p>High Pressure version: 0.02 – 3.0 MPa (3 – 435 psi)</p>
Pneumatic	<p>Evacuation:</p> <p>Max Vacuum: -85 kPa (-12.3 psi)</p> <p>Capacity: 0.4 s/l to -50 kPa (-7.2 psi), 1.5 s/l to -80 kPa (-11.6 psi)</p> <p>Filling:</p> <p>Capacity at 1 MPa supply: 0.1 s/l to 0.1 MPa (14.5 psi), 0.5 s/l to 0.6 MPa (87 psi)</p> <p>Tooling Output Valves:</p> <p>Valve type: Normally closed, 3/2 valve</p> <p>Qn: 160 std l/min.</p> <p>Cv: 0.16 USGPM/psi</p>
Environment	<p>Temperature: 10° to 40°C (50° to 100°F)</p> <p>Humidity: 85% RH (non-condensing)</p>
Dimensions (H × W × D)	295 mm × 275 mm × 330 mm (12 in. × 11 in. × 13 in.)
Weight	14.3 kg (31.5 lb.)
Communication ports	<p>Ethernet: RJ45 (Modbus)</p> <p>USB</p> <p>RS232: male, 9 pin, D-sub</p>
I/O Port Signals	Output Capacity: max. 0.5 A / output (max. 2.5 A total), 24 V DC logic

## Gas Filler

# TGF11

Leak testing with tracer gas requires filling your test object. The TGF11 Tracer Gas Filler is a stand-alone instrument which allows for easy and reliable tracer gas filling and evacuating. It ensures that the entire test object is filled with tracer gas at the right time and at the right pressure. It also evacuates the tracer gas after the test avoiding contamination of the work area.

The new user interface allows easy, intuitive control of the instrument reducing operating errors. The filler has no moving parts, thus minimizing maintenance expense, and is well-suited for use in industrial serial production.

The TGF11 is an accessory to INFICON hydrogen and helium leak detectors, such as Sensistor Sentrac Hydrogen Leak Detector.



### ADVANTAGES

- Ensured tracer gas filling in the entire test object
- Avoids background contamination
- Made for demanding industrial environments
- Dual port for filling and evacuating for short cycle times
- Minimal maintenance
- Easy set-up

### APPLICATIONS

- Industry
- Automotive
- Aerospace
- Packaging
- RAC
- Medical
- Process

# TGF11

## ORDERING INFORMATION

ITEM	PART NUMBER
TGF11 Tracer Gas Filler, including mains cord and USB cable	
Standard version	590-558
Low pressure version	590-559
<b>SPARE PARTS</b>	
Fuse 2A (minimum quantity 10 pcs)	591-578
Blanking plug (minimum quantity 10 pcs)	
6 mm (0.2 in.)	591-961
10 mm (0.4 in.)	591-962

## SPECIFICATIONS

Test pressure	
Standard version	0.3–10 barg (4.4–145 PSIG)
Low pressure version	0.05–2 barg (0.7–29 PSIG)
Supplies	
Connections	Push in fittings, OD 6, 10, 12 mm
Tracer gas pressure supply (standard version)	1–11 barg* (14.5–159.5 PSIG)
Tracer gas pressure supply (low pressure version)	1–4 barg* (14.5–58 PSIG)
Capacity**	
Evacuation time	0.8 s/l to -0.5 barg (-7.2 PSIG) 1.6 s/l to -0.7 barg (-10.1 PSIG) 2.5 s/l to -0.8 barg (-11.6 PSIG)
Maximum vacuum	-0.85 barg (-12.3 PSIG) (85% vacuum)
Communication interface	USB device RS232 PLC Input/Output Operator interface
Ambient temperature range	5° – 45°C (41° – 113°F)
Dimensions (W × H × D)	305 × 160 × 284 mm (12 × 6.2 × 11.1 in.)
Weight	9.5 kg (19.8 lb.)

All pressure specifications given relative to atmosphere (denoted by “g” for gauge)

\* At least 1 barg above tracer gas test pressure

\*\*The capacity depends on the connection to the test object

## Calibrated Test Leaks

# Calibrated Test Leaks

Manufacturers of helium leak-testing systems require calibrated leaks of various sizes with individually adjusted leak rates for the purpose of setting up and calibrating their systems.

Depending on the type of application, these calibrated leaks are either installed in the test sample as a master leak or are installed in the test chamber itself.

INFICON offers calibrated leaks which are capable of meeting the requirements concerning type and required leak rate.

These types of calibrated leaks are only available on request. Please use the order form on our website at [www.inficon.com](http://www.inficon.com) to provide feedback on feasibility as well as for all important ordering information.

### ADVANTAGES

- Various types adapted to different customer requirements
- Simple to operate
- Easy to install
- Ideal installation dimensions
- All calibrated leaks are supplied with a factory certificate indicating their leak rate



Calibrated leak with screw-in sleeve



Calibrated screw-in leak



Calibrated leak with cylindrical casing and VCO fitting



Calibrated leak with pin type casing



CONTURA Z integrated test leak

# Calibrated Test Leaks

## APPLICATIONS

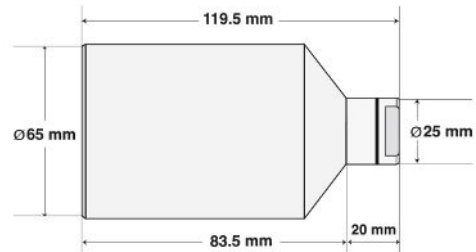
- As a master calibrated leak built directly into the test sample
- Directly installed on the test chamber
- Use as a calibrated leak for sniffer applications

## CALIBRATED INTEGRAL LEAK WITH HELIUM RESERVOIR

The integral helium test leak is for use in a vacuum test chamber and is designed for easy filling and refilling by the customer.

It is used for:

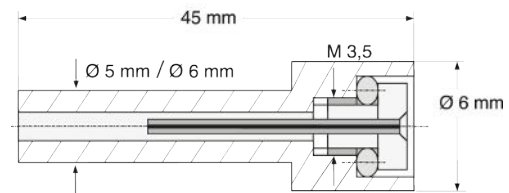
- Calibration of the vacuum system
- Evaluation of the machine factor for the system
- Verification of the test procedure
- Max. operating pressure: 1 bar against vacuum



CONTURA Z integral test leak

## CALIBRATED LEAK WITH PIN TYPE CASING

Helium calibrated leaks without gas reservoir (capillary type of leak) for sensitivity and signal response time determinations during vacuum leak detection. A purging valve with hose nozzle permits a rapid exchange of the gas in the dead volume.

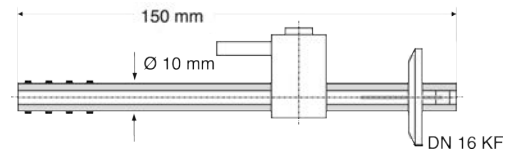


Calibrated leak with screw-in sleeve

## CALIBRATED LEAK WITH CYLINDRICAL CASING

The test gas connection is either by a VCO fitting or a 10 mm hose nozzle for flexible connections.

All calibrated test leaks for systems are designed for a max. working temperature of 80°C.



Calibrated leak with pin type casing and hose nozzle

## CALIBRATED LEAK WITH SCREW-IN SLEEVE

Used as a master leak to check the entire helium leak-testing system.



Calibrated leak with pin type casing and VCO fitting



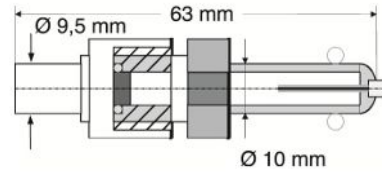
# Calibrated Test Leaks

## CALIBRATED SCREW-IN LEAK

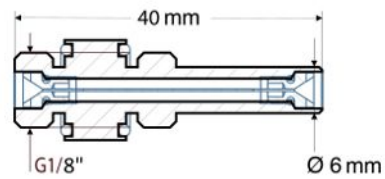
The calibrated screw-in leak is designed to prepare a test sample with a specific helium leak rate. In a leak detection system this master test sample can be used for

- Calibration of the vacuum system
- Evaluation of the machine factor for the system
- Verification of the test procedure

It is prepared with a fixed thread to allow a quick installation into a system. The thread can be on the pressure long side or the pressure short side, depending on the order.



Calibrated leak with cylindrical casing and VCO fitting



Calibrated screw-in leak

### ORDERING INFORMATION

CALIBRATED LEAK	LEAK RATE RANGE	MAX. OPERATING PRESSURE	PART NUMBER
CONTURA Z integral test leak	10 <sup>-2</sup> - 10 <sup>-6</sup> mbar l/s	1 bar against vacuum	143 15 S
Screw-in sleeve, 5 mm Ø	on request	20 bar – up to 40 bar <sup>1)</sup>	143 00
Screw-in sleeve, 6 mm Ø	on request	20 bar – up to 40 bar <sup>1)</sup>	143 16
Pin-type casing and hose nozzle	on request	6 bar	143 08
Pin-type casing and hose nozzle, TL 4	10 <sup>-4</sup> mbar l/s	6 bar	155 65
Pin-type casing and hose nozzle, TL 6	10 <sup>-6</sup> mbar l/s	6 bar	155 66
Pin-type casing and VCO fitting	on request	6 bar	143 04
Cylindrical casing and VCO fitting	on request	6 bar	143 12
Calibrated screw-in leak	on request	40 bar	143 20

<sup>1)</sup> Up to 40 bar if the capillary is glued in by the customer

#### On request:

Please visit the web form at "<http://www.inficon.com/lof>". With the Order Form you will get direct feedback about feasibility of the required calibrated leak. If the calibrated leak can be made a code is generated. Place the order to your INFICON dealer with the supplied code of the Order Form.

## Sniffer Application

# Sniffer Application

The function of these leaks is based on a special quartz capillary which is customized to deliver a specific reduced flow from a test gas reservoir. This type of calibrated test leak is available with different leak rates and test gases (Ordering Information [▶ 8]).

### ADVANTAGES

- Highly accurate and reliable due to the profile of the quartz capillary
- Metal-free capillary for low temperature dependence
- Inspection certificate (included) in accordance to DIN EN 10204:2004-3.1

### APPLICATIONS

- Determination of the nominal leak rate by comparison with a calibrated leak having a PTB certificate



### ORDERING INFORMATION

CALIBRATED LEAK	LEAK RATE RANGE	PART NUMBER
S-TL 4, with helium gas reservoir	$1.0-1.2 \times 10^{-4}$ mbar l/s	122 37
S-TL 5, with helium gas reservoir	$2.0-6.0 \times 10^{-5}$ mbar l/s	122 38
S-TL 6, with helium gas reservoir	$6.0-8.0 \times 10^{-6}$ mbar l/s	122 39
Forming gas	$2.0-2.2 \times 10^{-3}$ mbar l/s	123 22
<b>CALIBRATED SNIFFER TEST LEAKS FOR REFRIGERANTS</b>		
2-5 g/a, 0.07-0.18 oz/yr	R 134a	122 20
2-11 g/a, 0.07 – 0.39 oz/yr	R 134a	122 20S *)
10-11 g/a, 0.353 – 0.383 oz/yr	R 134a	122 40
2-5 g/a, 0.07-0.18 oz/yr	R 600a	122 21
2-20 g/a, 0.07 – 0.71 oz/yr	R 600a	122 21S *)
14-18 g/a, 0.49 – 0.63 oz/yr	R 600a	122 41
2-5 g/a, 0.07-0.18 oz/yr	R 404a	122 22
2-10 g/a, 0.07 – 0.18 oz/yr	R 404a	122 22S *)
10-15 g/a, 0.353 – 0.529 oz/yr		
13-17 g/a, 0.459 – 0.60 oz/yr	R 404a	122 42
2-5 g/a, 0.07-0.18 oz/yr	R152a	122 27
2-5 g/a, 0.07-0.18 oz/yr	R 407c	122 28
2-10 g/a, 0.07 – 0.353 oz/yr	R 407c	122 28S *)
10-15 g/a, 0.353 – 0.529 oz/yr		
2-5 g/a, 0.07-0.18 oz/yr	R 410a	122 29
2-10 g/a, 0.07 – 0.353 oz/yr	R 410a	122 29S *)
10-15 g/a, 0.353 – 0.529 oz/yr		
2-5 g/a, 0.07-0.18 oz/yr	R1234 YF	122 35
2-8 g/a, 0.07-0.282 oz/yr	R 32	122 36S
7-8 g/a, 0.25-0.28 oz/yr	R 290	122 31
10-14 g/a, 0.36-0.49 oz/yr	R 134a	122 40
2-3.5 g/a, 0.07 - 0.123 oz/yr	CO <sub>2</sub>	122 32
10-14 g/a, 0.353-0.494 oz/yr	CO <sub>2</sub>	122 75
2-5 g/a, 0.07 – 0.18 oz/yr	SF <sub>6</sub>	123 00
2-5 g/a, 0.07 – 0.18 oz/yr	R 1234ze	123 01
2-5 g/a, 0.07 – 0.18 oz/yr	R 245fa	123 04

# Sniffer Application

CALIBRATED LEAK	LEAK RATE RANGE	PART NUMBER
2-5 g/a, 0.07 – 0.18 oz/yr	R 452A	123 05
2-5 g/a, 0.07 – 0.18 oz/yr	R 448A	123 11
10-15 g/a, 0.353 – 0.529 oz/yr		
2-5 g/a, 0.07 – 0.18 oz/yr	R 452B	123 20
2-5 g/a, 0.07 – 0.18 oz/yr	R 454C	123 21
2-3 g/a, 0.07 – 0.106 oz/yr	R 454B	123 23
2-5 g/a, 0.07 – 0.18 oz/yr	R 513A	123 24
2-5 g/a, 0.07 – 0.18 oz/yr	R 450A	123 27
2-5 g/a, 0.07 – 0.18 oz/yr	R 438A	123 28

\*) Test leaks with customer-specific leak rate in the specified range

## Calibration Leaks for Sensistor Leak Detectors

# Calibration Leaks for Sensistor Leak Detectors

### The Easy Way to Test and to Calibrate—For Maximum Accuracy

To be able to correctly accept/reject test objects you need to measure to a set standard. You also need to calibrate your leak detector against a reliable reference leak. INFICON reference leaks for Sensistor industrial hydrogen leak detectors cover a wide range of leak rates to suit your specific application and include bigger leaks (Types A-C) and smaller leaks (Types E and G). Leak Type A is intended for accumulation testing only. All leaks are traceable to NIST, NMIJ, NPL, PTB, etc., through the Mutual Recognition Arrangement of the BIPM.



### TYPES AND CONNECTIONS

#### A, B and C

Sintered stainless steel leaks Target flow between  $5 \times 10^{-2}$  and  $5 \times 10^{-4}$  (Air)

#### E and G

Crimped metal capillary leaks Target flow between  $7 \times 10^{-5}$  and  $2 \times 10^{-5}$  (5% $H_2$ /95% $N_2$ )

Probe guide rings for hand probes included

### ADVANTAGES

- Suitable for industrial applications
- Easy to use
- Available in different leak rates
- Traceable to NIST, NMIJ, NPL, PTB, etc.

### APPLICATIONS

- Test and Calibration of Sensistor Industrial Hydrogen Leak Detectors

### ORDERING INFORMATION

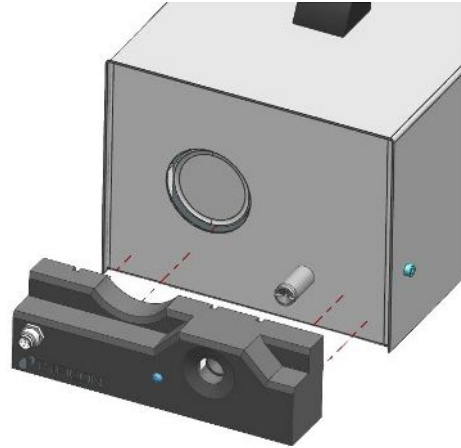
CALIBRATED LEAK	PART NUMBER
Calibration Leak Type A, $5 \times 10^{-2}$ mbarl/s @1bar	590-420
Calibration Leak Type B, $5 \times 10^{-3}$ mbarl/s @1bar	590-421
Calibration Leak Type C, $5 \times 10^{-4}$ mbarl/s @1bar	590-422
Calibration Leak Type E, 10g/a	590-427
Calibration Leak Type G, 3g/a	590-429

## CalMate Adapter for Calibrated leaks

# CalMate Adapter for Calibrated leaks

### CalMate calibration adapter

For inserting a sniffer tip into the opening of the CalMate calibration adapter to start a quick and easy calibration check or calibration in a sniffer leak detector, e.g. the XL3000flex.



### APPLICATIONS

- For adaption to a calibrated leak

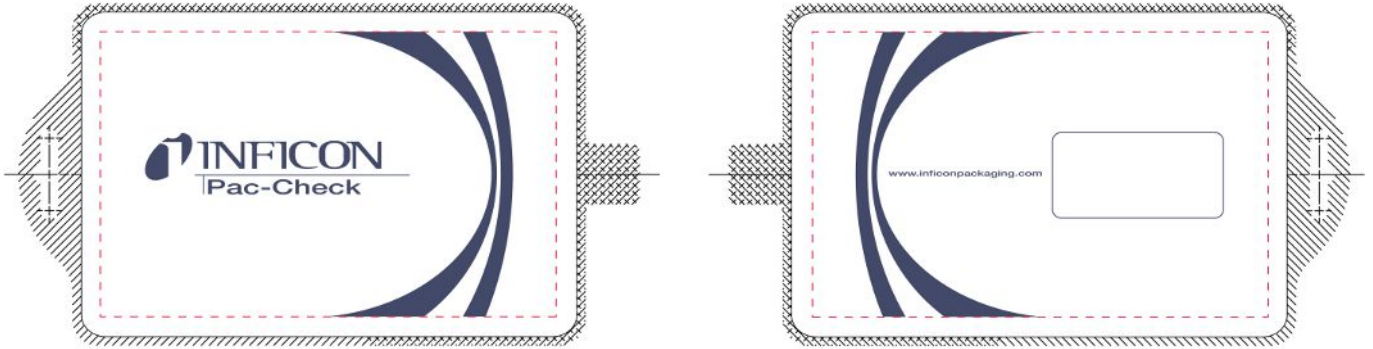
### ORDERING INFORMATION

CALIBRATED LEAK	PART NUMBER
CalMate connection cable 1 m	520-210
CalMate connection cable 3 m	520-215
Connecting cable CalMate to IO1000	520-220
IO1000 module	560-310

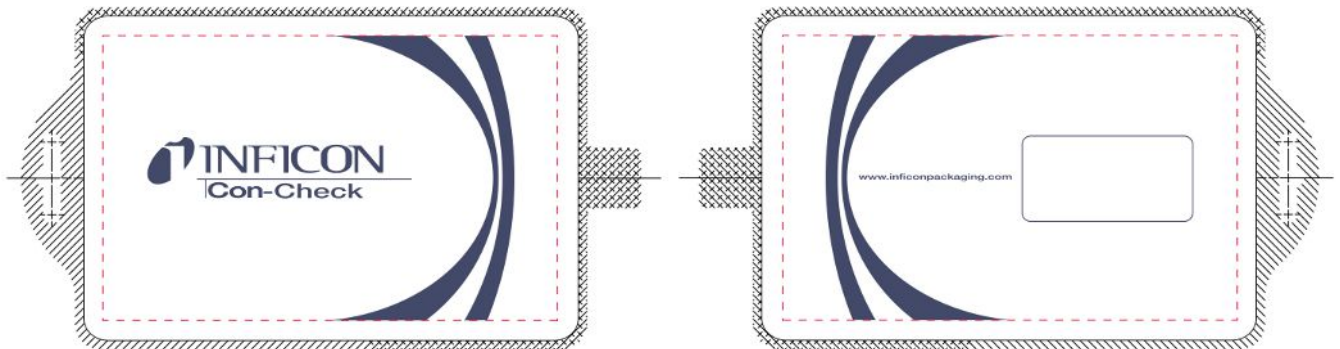
## Con-Check and Pac-Check

# Con-Check and Pac-Check

Con-Check and Pac-Check are used to test the function of Contura S400.



Test leak Pac-Check



Test leak Con-Check

### ORDERING INFORMATION

ITEM		PART NUMBER
Additional test leaks		
Con-Check	$(1.8 \pm 0.6) \times 10^{-2}$	571-000
Pac-Check	$2.25 \pm \times 10^{-1}$	572-000
Calibration kit		573-000

## Test Leaks with Gas Reservoir for Vacuum and Sniffer Applications

# Test Leaks with Gas Reservoir for Vacuum and Sniffer Applications

### TL3-5 AND TL4-6

Universal gas source for the fast insert in a variety of applications

Helium capillary leak for vacuum and sniffing applications. Adjustable leak rate in the range between  $10^{-3}$  to  $10^{-5}$  mbar l/s. Besides helium, which is included in delivery, the TL4-6 is also usable with different kind of gases.



### ORDERING INFORMATION

TEST LEAK	LEAK RATE RANGE	PART NUMBER
TL4-6, with helium gas reservoir	$10^{-4}$ to $10^{-6}$ mbar l/s	155 80
TL3-5, with helium gas reservoir	$10^{-3}$ to $10^{-5}$ mbar l/s	155 81

## Calibrated Test Leaks with Gas Reservoir for Vacuum Applications

# Calibrated Test Leaks with Gas Reservoir for Vacuum Applications

### TL7

Capillary leak with helium reservoir and manual valve. Leak rate range  $10^{-7}$  mbar l/s. Connecting flange DN 10 KF.

### TL8/TL9

Helium test leak with helium reservoir and manual valve. A special quartz bulb with a high helium permeation rate adjusts the constant gas flow. Connecting flange DN 10 KF.



#### ADVANTAGES

- Inured to pollution
- Metal-free flow reduction for low temperature dependence
- Inspection certificate (included) in accordance to DIN EN 10204:2004-3.1
- Highly accurate and reliable
- Determination of the nominal leak rate by comparison with a calibrated leak having a PTB certificate
- DAKKS certificate (optional) traceable to PTB

#### ORDERING INFORMATION

CALIBRATED LEAK WITH HELIUM RESERVOIR	LEAK RATE RANGE	PART NUMBER
TL 7 with hand valve, DAKKS calibrated	$10^{-7}$ mbar l/s	115 14
TL 7 for UL200/UL1000/UL5000, Modul1000	$10^{-7}$ mbar l/s	140 30
TL 8	$10^{-8}$ mbar l/s	165 57
TL 8, DAKKS calibrated	$10^{-8}$ mbar l/s	165 57DKD
TL 9	$10^{-9}$ mbar l/s	144 08



## Accessories Leak Detection Systems

# Accessories

### SNIFFER TOOLS

#### SPECIFIC SNIFFER LINES

### SNIFFER LINES FOR DETECTING SPECIFIC GASES

For use with the HLD6000 mobile leak detector.

- SMART sniffer line for R22, R32, R134a, R404A, R407C, R410A, R1234yf, R1234ze and 3 additional gases from the selectable gases that are verifiable by the device
- Sniffer line for R744 (CO<sub>2</sub>)
- Sniffer line for R600a and R290



SMART sniffer line

#### ORDERING INFORMATION

ITEM	PART NUMBER
SMART sniffer line (gas family of the HFC refrigerant)	511-047
R744 (CO <sub>2</sub> ) sniffer line	511-045
R600a/R290 sniffer line	511-048

#### SNIFFER LINE SL200

### HELIUM SNIFFER LINE SL200 FOR THE UL1000/5000 AND MODUL1000

Helium sniffers in connection with the UL1000, UL5000 and the Modul1000 leak detectors are used for leak-testing test samples which are pressurized with helium. Besides pinpointing the leaks, it is possible to determine the leak rate of the escaping helium.

- Sniffer line connects directly to the inlet port
- Very fast response time <1 s
- Extremely low detection limit <1 × 10<sup>-7</sup> mbar l/s
- Rigid 120 mm sniffer tip (included)
- Connecting flange DN 25 KF



Helium sniffer line SL200 P

#### ORDERING INFORMATION

ITEM	PART NUMBER
Helium sniffer line, SL200 P, 4 m long, straight handle with red/green LED for go/no-go indication, rigid sniffer tip 120 mm	140 05

# Accessories

## SL200, QT100 AND GAS SPRAY GUN

### HELIUM SNIFFERS QUICK-TEST™ QT100 FOR THE UL1000/5000 AND MODUL1000

- For greater distances up to 20 m between test object and leak detector
- Diaphragm pump for extracting the search gas
- Minimum detectable leak rate  $1 \times 10^{-6}$  mbar l/s
- Short response and decay times: 1 s at 5 m, 8 s at 20 m
- High sniffer velocity
- Built-in transformer for adaptation to any required power supply voltage 110–230 V AC



Helium sniffer QUICK-TEST QT100 with sniffer

### SEARCH GAS SPRAY GUN

The search gas spray gun with PVC hose (5 m long) is used for well aimed spraying of search gas at places where a leak is suspected.



Search gas spray gun

## ORDERING INFORMATION

ITEM	PART NUMBER
Helium sniffer QUICK-TEST QT100	155 94
Sniffer line for the QT100	
5 m	140 08
20 m	140 09
Search gas spray gun with rubber bladder	165 55
Rubber bladder (helium reservoir for spray gun) with hose clamp	200 206 239

## SPECIFICATIONS

FEATURE	SL200	QT100
Minimum detectable leak rate	$<10^{-7}$ mbar l/s	$10^{-6}$ mbar l/s
Supply voltage	-	110 – 220 V, 50/60 Hz
Signal response time, approx. at a length of		
5 m	<1 s	1 s
20 m	-	8 s
Connection flange	DN 25 KF	DN 25 KF
Weight	0.6 kg (1.32 lb.)	3.5 kg (7.72 lb.)

# Accessories

## SNIFFER LINE SL3000

### HELIUM SNIFFER LINE SL3000 FOR E3000, P3000, XL3000FLEX, UL3000 FAB PLUS AND UL3000 FAB ULTRA

- Detection limit  $< 2 \times 10^{-7}$  mbar l/s
- Gas flow, distance sensitivity 160 sccm
- Display with measurement view
- Acknowledge faults via buttons on the sniffer probe



Helium sniffer line SL3000

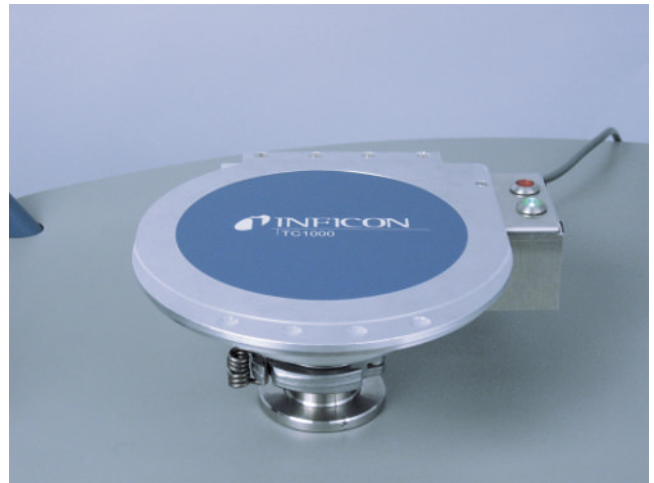
## ORDERING INFORMATION

ITEM	PART NUMBER
SL3000-3, sniffer line 3 m length	525-001
SL3000-5, sniffer line 5 m length	525-002
SL3000-10, sniffer line 10 m length	525-003
SL3000-15, sniffer line 15 m length	525-004

# Accessories

## TC1000 TEST CHAMBER

- Turns the UL-Devices and the Modul1000 into a reliable and user-friendly workstation for testing of hermetically sealed parts (also according to MIL-STD 843, Method 1014)
- Easy to install
- Maintenance-free
- Volume (hemispherical shape): approx. 430 ccm
- Upper diameter/depth: 130/40 mm
- Material: Aluminum alloy, low outgassing rate
- Weight: 2.5 kg
- Vacuum connection: DN 25 KF
- Integrated sensor switch to start test in combination with UL1000/UL1000 Fab and the Modul1000
- Clearly visible red/green LEDs to display test results
- Calibration by an external test leak is easy by using an optional adapter plate
- Protection of tested parts against static discharge by the standard ESD wrist band and an optional ESD mat (Cat. No. 551-002) for UL1000/UL1000 Fab



TC1000 Test Chamber



TC1000 in operation; exemplary menu function showed on the display

## ORDERING INFORMATION

ITEM	PART NUMBER
TC1000 test chamber incl. ESD wrist band	551-005
Test leak adapter for TC1000, DN 16 KF flange	200 001 797

# Accessories

## REMOTE CONTROL RC1000

- Up to 100 m wireless and up to 28 m wired operation of UL1000, UL1000 Fab, UL3000 Fab, UL5000 and Modul1000 leak detectors
- More than 8 hours battery lifetime
- Full color, 3.5 in touch screen display
- Push-buttons for basic operation features
- Leak rate displayed in digits, chart mode or bargraph mode
- Automatic or manual data recording
- Up to 24 hours storage of measured values
- Data copy via USB stick and download on PC
- Adjustable alarm threshold setting
- Robust design IP42
- Easy substitution of previous remote control version (Ref. No. 200 99 022)



## ORDERING INFORMATION

ITEM	PART NUMBER
RC1000C remote control, wired, including 4 m coiled cable	551-010
RC1000WL remote control, wireless, incl. wireless transmitter	551-015
Wireless transmitter for connection >2 leak detectors	551-020
Extension cable, 8 m for RC1000C	140 22

# Accessories

## CONNECTION COMPONENTS

When connecting accessories (helium sniffer probe and calibrated leaks) to a vacuum leak detector, the following reducers and components may be necessary:

## ORDERING INFORMATION

ITEM	PART NUMBER
PC software LeakWare	
DN 25/16 KF	211-281
DN 40/25 KF	211-283
DN 40/16 KF	211-282
Centering rings	
DN 16 KF	211-059
DN 25 KF	211-068
DN 40 KF	211-070
Clamping rings	
DN 16 KF	211-001
DN 25 KF	211-002
DN 40 KF	211-003

The following metal hoses are recommended to connect the leak detectors to systems:

NOMINAL WIDTH	LENGTH	PART NUMBER
DN 16 KF	1.0 m	211-338
DN 16 KF	0.5 m	211-336
DN 25 KF	0.5 m	211-340
DN 25 KF	1.0 m	211-342
DN 40 KF	1.0 m	211-346
DN 40 KF	0.5 m	211-344



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