

# 960 Auto-Test Leak Detectors

Varian's 960 series leak detectors have been specifically designed for high sensitivity and productivity testing environments. These units provide single button pass/fail test cycling and fully automatic spectrometer tuning and calibration. The "conventional" vacuum system arrangement in these machines uses a valving manifold that has been specially designed for fast cycle times and the maximum possible reliability.

In addition to the clear, front panel LED leak rate, pressure, and machine condition displays, information is also available on analog, parallel I/O, and RS-232 remote interfaces.

While the 960 leak detectors provide high sensitivity for detecting small leaks, they can begin testing at pressures as high as 700 mTorr. An atmospheric gross leak option allows searching for helium leaks with test port pressures as high as 760 Torr.

For testing of ultra-sensitive components and systems, an all-dry version of the 960 leak detector is available. It uses oil-free high vacuum and roughing/backing pumps for the cleanest possible operation.



## Features

- Fully automatic operation and spectrometer tuning
- Specially-designed high conductance valve manifold
- Standard gross leak valve allows testing to begin at 700 mTorr
- Parallel I/O and RS-232 remote interfaces available
- Long life liquid nitrogen trap
- Hand-held remote leak indicator option
- Turbo- and diffusion-pumped versions
- Totally dry vacuum pumped version available

## Benefits

- One button Pass/Fail testing
- Fully protected from the possibility of operator errors, air inrushes, and power failures
- Operator skill not required for spectrometer tuning, calibration, and zeroing
- Reduces pumpdown times for faster test cycling
- Proven reliability to over one million cycles
- No additional utility requirements
- Faster cycling by beginning test procedure at pressures higher than 100 mTorr
- Unit can be remotely controlled and provide complete real time testing data
- Enhances spectrometer sensitivity and cleanliness
- Provides leak rate indication up to 25 feet away
- Extra clean operation and fast starting with turbo pump
- Low cost with diffusion pump
- Non- contaminating to any item or system under test

## Technical Specifications

- Sensitivity

2 x 10<sup>-11</sup> atm cc/sec for helium

8 x 10<sup>-12</sup> atm cc/sec for air

- Response time

Less than 2 seconds for helium, in accordance with AVS Standard 2.1.

- Amplifier drift

Less than 2% of full scale of the most sensitive range, in accordance with AVS Standard 2.1.

- Noise level

Less than 2% of full scale, peak to peak, in accordance with AVS Standard 2.1.

- Leak indicator

A 50-segment bar graph indicator displays leak rates from 10 atm cc/sec to 1 x 10<sup>-11</sup> atm cc/sec automatically. The manual mode can also be used for any decade scale. A leak can also trigger an audible alarm whose frequency varies in proportion to the size of the leak.

- Spectrometer tube

The preamplifier is computer-optimized, temperature-stabilized, and solid-state. Programmed warm up minimizes start-up time. The tube is kept at a constant temperature at all times to maintain stability. The ion source has dual filaments of long-life, thoria-coated iridium. The service valve isolates the spectrometer tube for removal without shutting down the vacuum system.

- Turbomolecular pump

60 l/s maintenance-free ceramic bearing pump

- Diffusion pump

90 l/s stainless steel, air-cooled

- Rough pump

7 cfm (11.9 m<sup>3</sup>/h) direct-drive mechanical pump

Optional: Varian 11 cfm (18.7 m<sup>3</sup>/h) direct-drive mechanical pump

- Forepump

7 cfm (11.9 m<sup>3</sup>/h) direct-drive mechanical pump

- Automatic valve sequencing

Microprocessor-controlled valve operation provides automatic system cycling. The test and roughing valves are vacuum-actuated, requiring no air supply. Automatic shut down is achieved with a single switch function.

- Cold trap

Liquid hold capacity is 14 hours.

- Safety interlocks

The valve system design completely protects the high-vacuum system against pressure surges and power interruption.

- Test port

1-1/8" (28 mm) quick coupling.

- Power requirements

115 V and 230 V, 50/60 Hz (30/15 amps)

- Cabinet

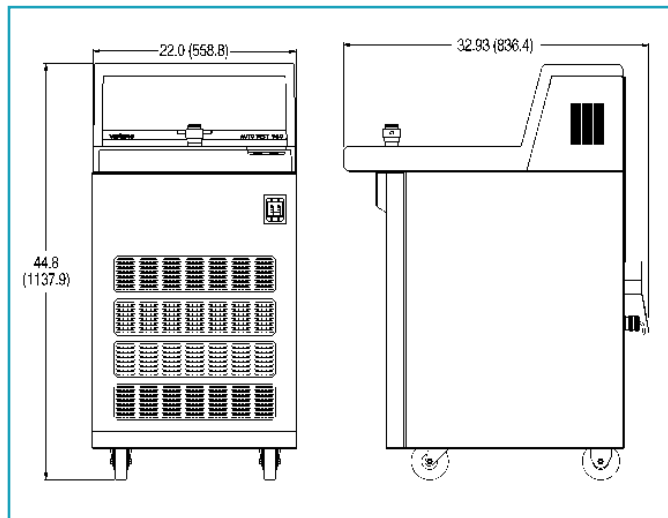
The front panel is removable to allow easy access to all components. Electronics are accessed from a hinged turret door and removable back panel. Cabinet is caster-mounted for mobility.

- Weight

- 435 lbs (198 kg) approx (net)

- 510 lbs (232 kg) approx (shipping)

## 960 Dimensions inches (mm)



## Ordering Information

Varian Part No.	Description
0960-L6900-301	960 Leak Detector, Diffusion Pumped, 115 V, 50/60 Hz
0960-L6900-302	960 Leak Detector, Diffusion Pumped, 230 V, 50/60 Hz
0960-L6910-301	960 Leak Detector, Turbo Pumped, 115 V, 50/60 Hz
0960-L6910-302	960 Leak Detector, Turbo Pumped, 230 V, 50/60 Hz
0960-L9060-301	960D Dry Leak Detector, Turbo Pumped, 115 V, 50/60 Hz
0960-L9060-302	960D Dry Leak Detector, Turbo Pumped, 230 V, 50/60 Hz

- Options\*

Varian Part No.	Description
0991-L5650-301	Remote leak rate indicator with 25' cord
0991-L5805-301	RS-232 for 960 leak detectors
0991-L5846-301	Upgrade from 7 cfm to 11 cfm roughing pump
0991-L5820-301	Auto Sequencer

\* See data sheet DS1251 for further information on options.

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