

990 CLD Auto-Line™ Helium Leak Detector

The Varian 990 CLD Auto-Line Leak Detector is a modular leak-testing package that can be integrated into any testing system. The electronics module of the 990 can be separated from the sensing module and vacuum pumps by as much as 15 feet, permitting a great degree of flexibility in your system design.

Every 990 CLD Auto-Line Leak Detector has a variety of electronic interfaces, making the setup of communications with a host computer or Programmable Logic Controller (PLC) as convenient as possible. For any testing system that incorporates helium leak-testing, the 990 CLD is the outstanding choice for precision leak-sensing.



Features

- V70 Turbomolecular pump
or
- V70 MacroTorr® Turbo/Drag pump
- Analog leak-rate output signal, 2 or 3V/decade
or
- 0-10 VDC linear (jumper selectable)
- Form "C" dry contact outputs
- 4 Non-volatile leak-rate set point outputs
- Standard opto-isolated (OPTO-22) digital inputs
- Electronics module mounts in standard 19-inch rack
- Sensing module can be located as far as 15 feet from the electronics module
- Rear panel pluggable screw terminal blocks

Benefits

- Highest sensitivity testing
- Fastest test cycle times
- Easy interfacing with a PLC or other devices
- Universal output interface including leak rate
- Simplified process control based on leak rate
- Versatile, safe inputs
- Allows external control of filament on/off and display range selection
- Standardized, simple installation
- High level of flexibility and modularity in your system design
- Reliable, solderless interface connectors

Technical Specifications

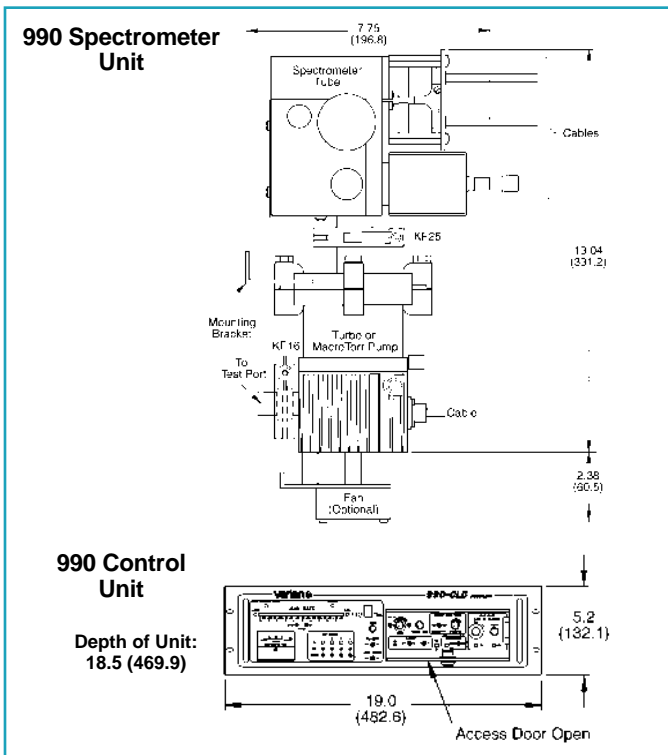
- Maximum test pressure
≤ 5 Torr (MacroTorr®), ≤ 500 mTorr (Turbo)
- Response time
< 0.5 second for helium in accordance with AVS Standard 2.1
- Typical recovery time
< 2 seconds to recover to below 20% of a 10⁻³ range leak
- Noise level
Less than 2% of full scale, peak-to-peak, in accordance with AVS Standard 2.1
- Leak indicator
50-segment LED bar graph. Seven sets of direct-reading sensitivity ranges, comprised of four decades in each range:
 - 10⁻⁹ – 10⁻⁶ atm cc/sec to 10⁻³ – 10⁰ atm cc/sec
- System I/O capabilities
 - Leak rate: DC logarithmic, selectable, 2 or 3 volts/decade or linear 0 – 10 V
 - Opto-22 input for filament on/off and display range control. Field-changeable 2.5 – 28 VDC, or 35 – 60 VDC, or 120 VAC
 - Form "C" dry contact outputs for pressure threshold, filament status, turbo status.

- Four independent Form "C" dry contact leak rate set points
 - 250 VAC, 28 VDC, 6 amps maximum
 - High-impedance audio output
- Spectrometer tube pressure output: 0 – 10 VDC
- Audio alarm
Built-in speaker with volume control and an output jack for remote speaker
- Sensing tube
The entire tube can be quickly removed for maintenance by its KF25 quick-disconnect. Disposable, all-welded ion source with dual thoriated-iridium filaments. Removable magnet structure for easy cleaning.
- High-vacuum pump
Fan-cooled turbomolecular pump or turbomolecular/drag pump.
- Power requirements
120 V (220 V) 50/60 Hz, single-phase, 0.5 kW max.
- Main electronics console
19" W x 17" D x 5¼" H (483 x 432 x 133 mm); Lockable front hinged door provides access to calibration controls.
- Weight
 - 50 lb (23 kg) approx. net
 - 60 lb (27 kg) approx. shipping

Common Applications

The rack-mounted 990 CLD is intended for applications in which the leak detector components are integrated into a system. Thus, once the instrument is installed and connected to pumps and valves, it is expected that it will remain fixed to that location. Typical applications are production systems in which leak detection becomes part of the process.

990 Spectrometer & Control Unit inches (mm)



Ordering Information

The Varian 990 Component Leak Detector includes the spectrometer tube, controller unit, and high-vacuum pump. Order interconnection cables and OPTO modules separately.

Component Leak Detector

Varian Part No.	Description
L990-0000-0T-120	w/Turbopump and controller, 120 VAC
L990-0000-0T-220	w/Turbopump and controller, 220 VAC
L990-0000-MT-120	w/MacroTorr pump and controller, 120 VAC
L990-0000-MT-220	w/MacroTorr pump and controller, 220 VAC
L990-0000-00-120	Basic 990 w/o high-vacuum pump, 120 VAC
L990-0000-00-220	Basic 990 w/o high-vacuum pump, 220 VAC

■ Cables

0981-L9023-305	Interconnection cable, 5' long
0981-L9023-310	Interconnection cable, 10' long
0981-L9023-315	Interconnection cable, 15' long

■ Optional OPTO Modules

(Two modules required for remote filament on/off and three required for remote display range selection)

0981-6491-50-005	OPTO-22 module, 120 VAC
0981-6491-50-010	OPTO-22 module, 35 – 60 VDC
0981-6491-50-015	OPTO-22 module, 2.5 – 28 VDC
0981-6491-50-020	OPTO-22 module, 220 VAC

■ Backing/Roughing Vacuum Pumps

0981-K9905-401	3.2 CFM (90 l/m) two-stage mechanical pump, 50/60 Hz
0981-K9905-411	7 CFM (200 l/m) two-stage mechanical pump, 50/60 Hz
0981-K9905-421	11 CFM (300 l/m) two-stage mechanical pump, 50/60 Hz
0981-K9905-431	16 CFM (450 l/m) two-stage mechanical pump, 50/60 Hz

Varian can also provide other roughing pumps, valve blocks, calibrated leaks, and gross leak testing options. Contact Varian for further details.

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