

Pfeiffer ASM 340 Helium Leak Detector

The Pfeiffer ASM 340 Helium Leak Detector is for **dry systems only!** Users may only use the detector on vacuum systems or parts that have not been pumped with oil-based pumps. If you need to leak-check a wet system, you must use the CCMR's Varian 979 leak detector. The leak detector is charged on an hourly basis in FOM and should be activated immediately when it is taken from the lab.

You will need an additional authorization code in order to operate the detector controller. E-mail Darrah Johnson-McDaniel (dj378@cornell.edu) and Steve Kriske (kriske@cornell.edu) to discuss your planned use of the detector and receive the code.

The ASM 240 is designed to detect and/or quantify a possible installation or component leak by searching for the presence of a tracer gas in the pumped gases.

- Only He or 95/5 (a mixture of 95% Nitrogen and 5% Hydrogen) tracer gases may be used.
- The vacuum systems or part to be tested must be clean and dry.
- Make sure the detector is in an environment free of tracer gas.
- Never move the detector once the turbo pump is running.

Switching on the ASM 340 detector and logging in

1. Move the detector to the location where you are going to use it and then lock the wheels in place. If you need to move the detector, you'll need to turn it off and then move it.
2. Plug the power cord from the cart into a standard wall outlet and turn on the main power switch on the cart.
 - a. Make sure the scroll pump turns on.
3. Turn on the power switch on the side of the detector.
4. Wait until the standby screen appears.
5. To change the access level, press and hold the home key until the settings menu appears.
 - a. -> Config -> Password -> type in the access password you received -> Access/Password -> type the password again -> User Level -> Full Access
 - b. Now you have full access to the system.

Starting a test:

The test method should be chosen depending on the part to be tested. See <https://www.pfeiffer-vacuum.com/en/products/leak-detection/leak-detectors/multipurpose/asm-340/15010/asm-340-90-130-v-for-japan-us-power-cable> for more details.

There are two possible test methods: hard vacuum or sniffing.

To access the test menu there are two options, you can press and hold the home key to access the test menu, or you can press the pages button to cycle through the options displayed at the bottom of the screen.

Hard Vacuum Test:

1. Select the 'hard vacuum' test method.
2. Set the test mode.
3. Set the reject set point if necessary (the hard vacuum reject point defines the acceptance set point for parts that are "accepted/rejected" in a hard vacuum test).
4. Set the detector to standby mode.
5. Prepare the vacuum systems or part to be tested.

- a. Spray method
 - i. Connect the vacuum systems or part to be tested to the leak detector inlet port.
 - b. Bombing method
 - i. Place the part to be tested in a pressurized gas tracer chamber.
 - ii. Remove the part to be tested from the chamber and place it in another vacuum chamber connected to the leak detector inlet port.
6. Start test by pressing the Start/Standby button.
 - i. Spray tracer gas on the points of the vacuum systems or part that are likely to leak.
 - ii. Be careful not to spray too much tracer gas when leak testing- it can cause the background of the detector to rise significantly
 7. The various test stages are displayed on the main screen. To see a plot of the leak detection or a schematic of the system cycle through the screens using the home button.
 - a. When the detector has reached the most sensitive test mode, wait for the measurement to stabilize - the measurement displayed corresponds to the measured leak rate.
 - b. Stop the test by pressing the Start/Standby button.

Sniffing Test:

1. Select the "Sniffing" test method.
2. Set the reject set point (the sniffing reject point defines the acceptance set point for parts that are "accepted/rejected" in a sniffing test).
3. With the leak detector in Stand-by mode, connect the sniffing probe to the provided connector and select Standard probe.
4. Start test by pressing the Start/Standby button.
5. Slowly scan, with the sniffer probing the areas with potential leaks - the displayed leak rate varies in the presence of a detected leak (quantitative value of the measured leak rate).
6. Stop test by pressing the Start/Standby button.

Recommended shutdown procedure:

1. Place the blanked-off flange on the inlet port.
2. In the test menu, check
 - a. That the 'hard vacuum' method is selected
 - b. That the air inlet valve is set to operate
3. Start a test by pressing the Start/Standby button in order to evacuate the system.
4. Make sure that the inlet valve is active.
5. Stop the test (i.e. enter standby mode) by pressing the Start/Standby button again.
6. Turn the power switch off on the detector.
7. Wait for the control panel to turn off.
8. Turn the power switch off on the cart.
9. Unplug the power cable.