



Model 8066

LeakHunter Plus™



Description

The Matheson Model 8066 is a truly universal leak detector. Extensive R&D efforts have resulted in a multi-functional leak detector specially engineered to perform superbly in both portable and benchtop applications. It is designed to both locate and measure a wide variety of gas leaks quickly, precisely and cleanly.

The LeakHunter Plus™ is so universal that it replaces three previous Matheson models by combining the best features of the Model 8065 Leak Hunter, the Model 8067 Quantitative Leak Detector and the Model 8017 Benchtop Leak Detector. Moreover, its advanced electronic design improves upon these products by producing more sensitive, more stable and more accurate readings.

As a portable detector, the 8066 offers the convenience and flexibility of either one or two handed operation. The probe easily attaches to the body of the instrument giving you a free hand. Or, simply detach the flex-and-stay probe to gain access to even the most difficult to reach places. Even pinpoint leaks in areas where several connections are grouped together. The flex-and-stay probe allows you to bend the probe to sniff around obstacles. An extension flex-and-stay probe is also included to extend your reach. The rechargeable NiCad batteries (included with charger) provide four hours of portable operation.

As a benchtop detector, the 8066's detachable probe allows you to position the body of the unit on the bench and perform leak detection procedures with just the probe in hand. The body's no-slip feet and a built-in incline stand make for a stable setup and easy viewing. The 8066's power adapter enables continuous AC operation; there's no need to periodically recharge the batteries.

The LeakHunter Plus™ can be used to simply locate leaks so they can be corrected, or it can be used to also measure how big they are. The following features make it an excellent quantitative leak detector:

- Calibration data for thirteen gases is stored in memory. At the touch of a button, the appropriate calibration data is selected depending upon the target gas to be detected.
- Leak rates are displayed in a large LCD readout. The user easily switches between units of cc/sec, cc/min, ft³/min or ppm.
- A peak hold function records and displays the maximum leak rate encountered as the probe passes through the suspect leak area.
- Built-in autoranging automatically adjusts the instrument's sensitivity to the leak rate.

The 8066 is highly sensitive and able to locate leaks too small to bubble with a soap solution. And as the detector cell is located in the probe itself, it exhibits excellent response and recovery times. Great attention has also been paid to ergonomics and durability, and the 8066's controls have been kept simple so it can be operated with little or no training.

Applications

- **In the Laboratory:** Instruments such as chromatographs and GC/MS, reaction vessels, sampling cylinders, research apparatus, manifolds, regulators, and valves.
- **In the Plant:** Pressurized containers and storage vessels, piping, process and gas transfer lines, pilot plant reactions, tracer studies, refrigeration systems.
- **On Production Lines:** Quality assurance procedures in manufacturing, welds, seals and connectors, valves, waterproof enclosures, refrigeration and air conditioning units and military equipment.
- **In the Hospital:** Medical gas systems and piping, fittings and apparatus.
- **In the Field:** Tracer studies, helium and CO₂ pipelines, refrigeration lines.
- **Environmental Compliance:** Fugitive emissions.

CAUTION. The 8066 is not designed as intrinsically safe and should not be used to detect leaks of combustible gases which may exceed their lower explosive limit (LEL).





Model 8066

LeakHunter Plus™ (continued)

Gases Detected

The LeakHunter Plus™ will detect any gas that has a thermal conductivity that differs from that of the ambient air on which it was zeroed. The larger the difference, the greater the sensitivity. As the instrument will normally be zeroed in ambient air comprised mostly of nitrogen and oxygen, the 8066 will not be very sensitive to leaks of these gases. A gas may have a higher or lower thermal conductivity than air and thus produce a positive or negative reading on the display.

The LeakHunter Plus™ groups gases with similar thermal conductivities into one of four Gas Groups. Each of the Groups has a calibration curve stored in memory. While the 8066 will detect any gas with a thermal conductivity different from air, the thirteen gases in the table below have been tested for sensitivity and assigned to a particular Gas Group.



Minimum Detectable Leak Concentration

Group	Gas	Pos/neg	cc/sec	cc/min	ft ³ /min	ppm
1	Hydrogen	+	8.10E-06	4.9E-04	1.7E-08	1.3E+02
	Helium	+	1.00E-05	6.0E-04	2.1E-08	1.6E+02
	Sulfur Hexafluoride	+	1.0E-04	6.4E-03	2.2E-07	1.8E+03
2	Neon	+	5.80E-05	3.5E-03	1.2E-07	9.3E+02
	Xenon	-	5.81E-05	3.5E-03	1.2E-07	9.3E+02
3	R11	-	6.84E-05	4.1E-03	1.5E-07	1.0E+03
	R12	-	7.90E-05	4.7E-03	1.7E-07	1.3E+03
	R21	-	7.98E-05	4.8E-03	1.7E-07	1.3E+03
	R22	-	9.46E-05	5.7E-03	2.0E-07	1.5E+03
4	Methane	+	1.06E-04	6.4E-03	2.2E-07	1.8E+03
	Argon	-	1.37E-04	8.2E-03	2.9E+07	2.2E+03
	CO ₂	-	1.53E-04	9.2E-03	3.2E-07	2.4E+03
	Water Vapor	-	1.75E-04	1.1E-02	3.7E-07	2.8E+03

Note: e.g.: 1.00E-05 = 1 x 10⁻⁵

Specifications

Detection Principle:	Dual cell micro volume thermal conductivity
Power:	1 x size 9V NiCad battery. (Alkaline battery, not included, may be substituted)
Charger/Adapter:	115V: Combination charger/AC adapter 220V: Charger only
Operating Time:	4 hours NiCad; 9 hours alkaline
Response Time:	Approximately 1 second
Recovery Time:	Approximately 1 second
Audio:	Fixed volume, variable frequency proportional to leak rate
Diagnostics:	Low battery indicator Detector cell failure alarm
Temperature:	32° F - 113° F (0° C - 45° C)
Operating:	Storage: 14° F - 122° F (-10° C - 50° C)
Humidity:	0-90% RH non-condensing
Size:	Console: 6.75" L x 3" W x 1" D (172 mm x 77 mm x 26 mm) Probe: 8" L x 1.75" D (204 mm x 28 mm)
Weight	15.5 ounces (440 gm) Including case: 3.3 lb (1.5 kg)
Warranty:	1 year

Ordering Information

Model Number	Description
8066	LeakHunter Plus™ Complete with "Flex-and-Stay" Standard and Extension Probes, 115 VAC Adapter/Charger w/NiCad Battery, Durable Carrying Case
8066-220	Same as above except with 220 VAC Charger in Lieu of Charger/Adapter
8066-02	Calibrated Leak Hardware
8066-03	Replacement Standard Probe
8066-04	Replacement Extension Probe
8066-05	Replacement 115 VAC Charger/Adapter
8066-06	Replacement 220 VAC Charger