

# INFRAIRAN SPECIFIC VAPOR ANALYZER



**PORTABLE ANALYZERS FOR  
PRACTICAL AND COST-EFFECTIVE  
ON-SITE AMBIENT AIR MEASUREMENTS**

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**SF<sub>6</sub>  
Isoflurane  
IPA  
R-134a**

**Perchloroethylene  
N<sub>2</sub>O  
Carbon Tetrachloride  
Specific Freons**

**CO<sub>2</sub>  
Toluene  
CO  
HFE-7100**

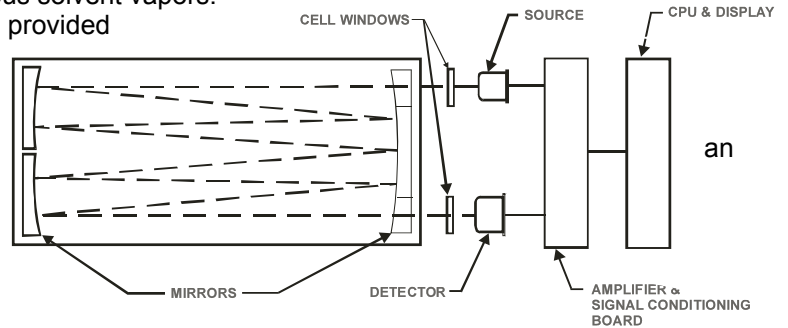
The **InfraRan Specific Vapor Analyzer** is a single-beam, factory-calibrated, infrared photometer designed specifically for easy, on-site ambient air measurements of a specific gas or gases. The analyzer's user-friendly software prompts the operator through the analysis and real-time concentration levels are displayed in either parts per million (ppm) or percent (%) depending on the calibration range. The InfraRan Analyzer provides a reliable, maintenance-free method for dedicated measurement of a particular gas or gases.

## PRINCIPLE OF OPERATION

The InfraRan Specific Vapor Analyzer is a single-beam infrared photometer designed for measuring of a particular gas or gases. It is ideal for measuring single or multiple anesthetic gases, SF6 for ASHRAE 110 evaluations or leak detection, single or multiple refrigerant gases, and various solvent vapors.

The analyzer can be purchased to measure other gases provided they have an infrared absorption band in the infrared region from 2.5 - 14.5  $\mu\text{m}$ .

An integral sample pump draws a gas sample into an optical transmission cell where it absorbs energy from infrared beam. A filter and detector convert the infrared intensity, at the wavelength selected by the filter, to an electronic signal. An embedded microprocessor converts the infrared absorbance to a concentration of the target gas and is displayed in appropriate units (typically ppm or percent).



**Schematic Representation of InfraRan Analyzer**

## TYPICAL GASES AND MEASUREMENT RANGES

Gas	Recommended Measurement Range (ppm)
Acetone	0 - 1000
Carbondioxide (absolute)	0 - 3000
Carbon Monoxide	0 - 100
Carbon Tetrachloride	0 - 25
Desflurane	0 - 50
General Hydrocarbons (hexane)	0 - 500
Isoflurane	0 - 50
Isopropyl Alcohol	0 - 500
Methylene Chloride	0 - 100
Nitrous Oxide	0 - 100
Perchloroethylene	0 - 50
R 114	0 - 2000
R 12	0 - 2000
R 134A	0 - 2000
R 236 fa	0 - 2000
Sevoflurane	0 - 50
Sulfur Hexaflouride (SF <sub>6</sub> )	0 - 5
Toluene	0 - 200

The InfraRan Specific Vapor Analyzer is ideal for measuring a single gas and can be factory calibrated for most infrared-absorbing gases. The gas or gases to be measured and their respective concentration ranges must be specified at the time of purchase. This chart is a list of typical gases and measurement ranges. For additional available gases and measurement ranges, contact us at [info@wilksir.com](mailto:info@wilksir.com). Standard multi-gas models are also available for refrigerant or anesthetic gas measurements.

### LIGHTWEIGHT & PORTABLE

The analyzer weighs 18 lbs. and with its internal battery power, the InfraRan Analyzer is a truly portable instrument. It can run up to 8 hrs. on its battery pack, and includes internal data logging for added measurement and record keeping convenience. No additional equipment is necessary since all of the supplies that are required for monitoring are included.

### EASY TO USE

The InfraRan Specific Vapor Analyzer is factory calibrated so that no chemical standards are needed by the user to calibrate the analyzer. Its user-friendly, menu-driven software and easy-to-read display prompt the user through all aspects of the analysis - enabling both non-technical personnel, as well as those with an infrared gas analysis background, to make fast, accurate measurements.

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### **LOW MAINTENANCE**

The InfraRan provides a reliable, maintenance-free method for dedicated monitoring of a specific gas or vapor. Its design combines a hardware/electronic/software package with a measurement principle that can be easily applied to meet a variety of application needs.

### **ECONOMICAL MONITORING**

The InfraRan Analyzer uses a non-destructive measuring principle and only requires a source of power for operation. The analyzer does not require the use of any consumable items other than zero gas and particulate filters, which eliminates the need for purchasing a large quantity of supplies to keep the InfraRan Analyzer operable. With its menu-driven software, direct reading display, and simple controls, minimal - if any - training is required to operate the analyzer. Thus, monitoring costs with the InfraRan Specific Vapor Analyzer are very low compared to other analytical methods or instrumentation.

### **FAST RESPONSE**

Response to 90% is less than 10 seconds. A stable maximum concentration takes less than 30 seconds. Since the air sample is continuously delivered to the cell by means of a built-in sampling pump, the analyzer outputs real-time concentration data, allowing personnel to be alerted to potential hazards before they become serious.

### **CALIBRATION**

The InfraRan Analyzer is factory calibrated for the specific gas(es) for which it is being purchased. The calibration of the InfraRan Specific Vapor Analyzer is very stable and recalibration should not be required more than once a year.

For recalibration, the analyzer should be returned to Wilks Enterprise where we have a laboratory set-up capable of generating at least five concentrations of the specific gas (es) in air that cover the full analysis range, as well as computer acquisition and processing. Please contact us for details and pricing.

### **DATA LOGGING**

Data logging is standard on all InfraRan Analyzers, with the exception of the 4-Gas Refrigerant model. The data logging interval is adjustable from 1 second to 2 minutes. The data logging memory capacity results in the following file size and corresponding total logging time:  
2300 lines  
38.3 min (@1sec/interval) to 76.6 hrs (@ 120 sec/interval).

The download function of the InfraRan Analyzer produces a report as a formatted text file. Alternatively, an Excel spreadsheet is available that produces an Excel workbook with improved formatting and conversion of all data to numeric values that allow further processing.

## **SPECIFICATIONS**

<b>Power requirements (Battery Charger - External Operating Supply)</b>	<b>120 - 220 VAC - 50/60 Hz</b>
<b>Battery Pack Rechargeable Nickel Metal Hydride</b>	<b>12V; 9 Ah capacity</b>
<b>Dimensions</b>	<b>15" x 7.3" x 7.5" (381 mm x 185 mm x 191 mm)</b>
<b>Mass</b>	<b>18 lbs. (8.2 kg)</b>
<b>Enclosure</b>	<b>High Impact Polymer</b>
<b>Type</b>	<b>Single Beam Infrared Spectrophotometer</b>
<b>Optics</b>	<b>Cell 1st Surface Gold &amp; Pyrex; Photometer, Fixed Band Pass Filters (specific to the gas or gases to be measured)</b>
<b>Cell Pathlength</b>	<b>6.0 Meter (256") is used for most gases - for high concentrations of specified gas or gases, a 1.2 meter or 16 cm cell may be used</b>
<b>Sample Cell Volume</b>	<b>0.45 liters (0.0159 ft<sup>3</sup>)</b>
<b>Sample Flow</b>	<b>10 liter per min (21.2 ft<sup>3</sup>/hr)</b>
<b>Gas Purge</b>	<b>5 Cell Volumes for 99% purge of cell (approx 5 sec @ 10 liters/min)</b>
<b>Measurement Cycle</b>	<b>Display updated every second</b>
<b>Source</b>	<b>Thin film on diamond-like carbon support</b>
<b>Communications Data Port</b>	<b>USB and RS232 for connection with PC</b>
<b>Concentration Alarm</b>	<b>High &amp; Low (selectable by user)</b>
<b>Display</b>	<b>Vacuum Fluorescent - 8 lines x 40 character Plasma Display</b>
<b>Keypad</b>	<b>20 Key Tactile Keypad</b>