

IAQRAE

The only IAQ Monitor with VOC Measurement

The IAQRAE is the only Indoor Air Quality (IAQ) monitor to combine a Photo-Ionization Detector (PID) with traditional measures of IAQ like Temperature, Humidity, Carbon Dioxide (CO₂) and a user-selected toxic gas sensor in one 1-5 sensor package. The PID gives the IAQRAE the ability to measure 0-500 ppm of VOCs (Volatile Organic Compounds) with 0.01 ppm (10 ppb) resolution.

RAE's advances in PID technology give IAQ investigators an ultra-sensitive VOC detective tool providing immediate insight and diagnosis. The IAQRAE provides consultants, safety & hygiene professionals and building managers with a reliable, affordable, accurate and instantaneous means of directly measuring VOCs so that problems can be quickly identified and fixed. Traditional IAQ monitors that measure just temperature, humidity and CO₂ will miss this important indoor contaminant.

CO₂ monitors are very popular for IAQ surveys. But CO₂ is only a secondary measurement tool for IAQ. If one dilutes the air enough to reduce CO₂ levels it often solves the IAQ problem. However, high levels of CO₂ do not necessarily indicate high levels of VOCs. The PID in the IAQRAE compliments its CO₂ sensor by providing a direct measurement tool for VOCs that would never be noticed if only CO₂ were measured.

Standard Features

- Continuous monitoring of VOCs 0-500 ppm with 0.01 ppm (10 ppb) resolution with PID sensor
- Continuous monitoring CO₂ 0-20,000 ppm with 10 ppm resolution
- Continuous measurement of Temperature and Relative Humidity
- Toxic sensor socket accepts CO, H₂S, SO₂, NO, NO₂, Cl₂, HCN, NH₃ and PH₃ sensors
- Built in diaphragm pump for sampling
- At least 48 hours continuous operation from built-in Li-Ion battery
- 24/7 continuous operation when plugged into wall charger
- Interchangeable Li-Ion or alkaline battery pack
- Data easily downloaded with ProRAE Suite software
- Large digital display & keypad

Sources of VOCs

- Cleaning and Maintenance Supplies
- Carpets, Fabrics, Finishes, Furniture and Building Materials
- Office Equipment (copiers, printers)
- Microbial Contamination (mold, fungus, etc.)
- Human Occupancy (exhalation and perfume)
- Renovations
- Vocational Training Shops & Art Rooms
- Pesticides



Specifications

Sensor Specifications

Gas Monitor	Range	Resolution
VOCs	0.01 - 9.99 ppm	0.01 ppm
	10.0 - 99.9 ppm	0.1 ppm
	100 - 500 ppm	1 ppm
Carbon Dioxide	0 - 20,000 ppm	10 ppm
Carbon Monoxide	0 - 500 ppm	1 ppm
Hydrogen Sulfide	0 - 100 ppm	1 ppm
Sulfur Dioxide	0 - 20.0 ppm	0.1 ppm
Nitric Oxide	0 - 250 ppm	1 ppm
Nitrogen Dioxide	0 - 20.0 ppm	0.1 ppm
Chlorine	0 - 10.0 ppm	0.1 ppm
Hydrogen Cyanide	0 - 100 ppm	1 ppm
Ammonia	0 - 50 ppm	1 ppm
Phosphine	0 - 5.0 ppm	0.1 ppm
Temperature	32.0°-122.0° F (0-50.0°C)	0.1° F or C
Humidity	5 - 95% RH	1% RH

Detector Specifications

Size	9.25"L x 5.0"W x 9.25"H (23.5 x 13 x 23.5cm)
Weight	8 lbs (3.6 kg) with battery pack
Sensors	Up to five sensors (VOC, CO ₂ , Temperature, Humidity and one toxic), 10.6 eV PID sensor for VOC, Non-Dispersive Infrared (NDIR) for CO ₂ , electrochemical sensor for toxic gas, polymer capacitive for humidity and thermistor for temperature (temp & humidity sensors are located in housing on top of monitor)
Battery	Rechargeable, 7.4V/7.2Ah, Lithium-ion battery pack with built in charger (less than 10 hours charge time) or a 6 C-cell alkaline battery pack
Operating Hours	At least 48 hours continuous operation on Li-Ion (typical) on a charge (continuous when plugged into charger)
Display	2 line, 16 digit LCD
Keypads	1 operation and 2 programming keys
Direct Readout	Instantaneous values (up to 5), sensor name, high and low values, battery voltage and elapsed time
Alarm	95 dB buzzer (user enabled) and flashing red LED to indicate exceeded preset limits <ul style="list-style-type: none">• High: 3 beeps and flashes per second• Low: 2 beeps and flashes per second• STEL and TWA: 1 beep and flash per second• Alarms automatic reset or with latching manual override• Optional plug in pen size vibration alarm
Datalogging	Optional 20,000 points (7 days on VOC, CO ₂ , Temp, Humidity and Toxic at 2.5 minute intervals)
Communication	Upload data to PC and download monitor setup from PC through RS-232 link to serial port on PC
Calibration	<ul style="list-style-type: none">• VOC, Toxic: Two-point field calibration for zero and standard reference gas• CO₂: Two-point field calibration for zero and standard reference gas• Humidity: Two-point field calibration• Temp: One-point field calibration
Sampling Pump	Internal integrated diaphragm pump with programmable "duty-cycle" for PID self-cleaning during long continuous run times (24/7)
Low Flow Alarm	Auto shut off pump at low flow condition
Temperature	32° to 104°F (0 to 40°C)
Humidity	0% to 95% relative humidity (non-condensing)
Attachment	Shoulder strap, optional tripod/wall mounting bracket
Warranty	Lifetime on non-consuming components (per RAE Standard Warranty), 2 years for CO ₂ , CO, and H ₂ S sensors, 1 year all other sensors, 1 year pump, 1 year battery, 1 year for 10.6eV PID lamp

IAQRAE Accessories

Monitor Only Includes:

- Sensors as specified
- Calibration adapter
- Operation and Maintenance Manual
- Shoulder strap
- Rechargeable Lithium-ion battery pack
- 110/240 V AC/DC Wall Adapter
- Spare alkaline battery pack
- 3" Inlet probe
- 10 spare external filters
- Hard transport case with pre-cut foam
- Sampling Wand with 10' of self-coiling Teflon tubing
- Tool Kit

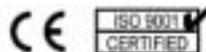
Optional calibration kit also includes:

- Mix Gas in a 34L cylinder (50 ppm CO, 5000 ppm CO₂, 20.9% O₂, balance N₂)
- Isobutylene gas in a 34L cylinder (for units with PID)
- Calibration Regulator (*female*) and tubing

Datalogging Monitors also include:

- Software ProRAE Suite Package for Windows 98, NT, 2000 and XP
- Computer interface cable

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