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 IAQ parameters like Temperature, Humidity, Carbon Dioxide (CO_2) 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 proven PID technology gives IAQ investigators an ultra-sensitive VOC detection tool, delivering 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. Problems can be quickly identified and fixed. Traditional IAQ monitors that only measure temperature, humidity and CO_2 will miss important indoor contaminants such as molds and VOCs a from construction, renovation and office activities.

CO_2 monitors are very popular for IAQ surveys. But CO_2 isn't a contaminant - it is only a secondary measurement of IAQ. If one dilutes the air enough to reduce CO_2 levels it often solves the IAQ problem. However, low levels of CO_2 do not necessarily equate to low levels of VOCs. The PID in the IAQRAE compliments the CO_2 sensor providing direct measurement of VOCs - compounds that would otherwise go undetected.

Key Features

- Continuous monitoring of VOCs 0-500 ppm with 0.01 ppm (10 ppb) to 1 ppm resolution with PID sensor
- Continuous monitoring of CO_2 0-20,000 ppm with 10 ppm resolution
- Continuous measurement of Temperature and Relative Humidity
- Toxic sensor socket accepts CO, H_2S, SO_2, NO, NO_2, Cl_2, HCN, NH_3 or PH_3 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 Traning Shops & Art Rooms
- Pesticides

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ISO 9001 CERTIFIED

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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
Sulfer 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 sensor 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 a 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)
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 • 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	• VOC, Toxic: Two-point field calibration for zero and standard reference gas • CO_2: 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 122°F (0 to 50°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_2S 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-inch inlet probe
- 10 spare external filters
- Hard transport case with pre-cut foam
- Sampling Wand with 10 feet of self-coiling Teflon tubing
- Tool Kit

Optional calibration kit also includes:

- Mixed gas in a 34L cylinder *(50 ppm CO, 5000 ppm CO_2, 20.9% O_2, balance N_2)*
- Isobutylene gas in a 34L cylinder (for units with PID)
- Calibration Regulator and tubing

Datalogging monitors also include:

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

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