



# MultiRAE

Wireless Portable Six-Gas Monitor With Advanced VOC Detection Capability



The MultiRAE is the most advanced portable chemical detector on the market. The MultiRAE delivers the broadest PID sensor range in its class and the versatility to support over 25 intelligent interchangeable sensor options (such as PID, NDIR for combustibles and CO<sub>2</sub>, ammonia, chlorine, formaldehyde, and phosphine) to fully meet the monitoring needs in a variety of applications, including industrial hygiene, personal protection, leak detection, and HazMat response.

The MultiRAE's wireless capability elevates worker protection by providing safety officers real-time access to instrument readings and alarm status from any location<sup>1</sup> for better visibility and faster incident response.

- Highly versatile and customizable for different applications
- Man Down Alarm with real-time remote wireless notification
- Easy maintenance with replaceable sensors, pump, and plug-and-play battery
- Fully automatic bump testing and calibration with AutoRAE 2<sup>2</sup>

## KEY FEATURES

Wireless. Versatile. Proven.

- Wireless access to real-time instrument readings and alarm status from any location<sup>1</sup>
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Over 25 interchangeable sensor options, including 0.1 to 5,000 ppm PID
- Intelligent sensors store calibration data, so they can be swapped in the field<sup>3</sup>
- Extensive on-board gas libraries (190 VOCs and 55 combustible gases)
- Largest display in its class
- Continuous datalogging (6 months for 5 sensors, 24x7)

## APPLICATIONS

- Industrial hygiene, personal protection, and multi-gas leak detection in industries such as:
  - Aviation (wing tank entry)
  - Chemical
  - Environmental
  - Oil and gas
  - Pharmaceutical
  - Shipping / marine
- HazMat response
- Clandestine drug labs






MultiRAE used for worker exposure monitoring at an oil refinery



### SPECIFICATIONS

#### Instrument Specifications<sup>5</sup>

|   |  |
|---|--|
| Size  | 7.6" H x 3.8" W x 2.6" D (193 x 96.5 x 66 mm)  |
| Weight  | 31 oz. (880 g)   |
| Sensors   | Over 25 intelligent interchangeable field-replaceable sensors including PID for VOCs, electrochemical sensors for toxic gases and oxygen, combustible LEL and NDIR sensors, and CO <sub>2</sub> NDIR sensor  |
| Battery Options, Runtime <sup>6</sup> and Recharge Time | - Rechargeable Li-ion (~12-hr. runtime, < 6-hr. recharge time)<br>- Extended duration Li-ion <sup>2</sup> (~18-hr. runtime, < 9-hr. recharge time)<br>- Alkaline adapter with 4 x AA batteries (~6-hr. runtime)  |
| Display   | Monochrome graphical LCD display (128 x 160) with backlighting. Automatic screen "flip" feature.   |
| Display Readout   | - Real-time reading of gas concentrations; PID measurement gas and correction factor; battery status; datalogging on/off; wireless on/off and reception quality.<br>- STEL, TWAA, peak, and minimum values   |
| Keypad Buttons  | 3 operation and programming keys (Mode, Y/+, and N/-)  |
| Sampling  | Built-in pump. Average flow rate: 250 cc/min. Auto shutoff in low-flow conditions  |
| Calibration   | Automatic with AutoRAE 2 Test and Calibration System <sup>2</sup> or manual  |
| Alarms  | Wireless remote alarm notification; audible (95 dB @ 30 cm), vibration, visible (flashing bright red LEDs), and on-screen indication of alarm conditions<br>- Man Down Alarm with pre-alarm and real-time remote wireless notification   |
| Datalogging   | Continuous datalogging (6 months for 5 sensors at 1-minute intervals, 24/7)<br>- User-configurable datalogging intervals (from 1 to 3,600 seconds)   |
| Communication and Data Download                         | - Data download and instrument set-up and upgrades on PC via charging and PC comm. cradle, travel charger, or AutoRAE 2 Automatic Test and Calibration System <sup>2</sup><br>- Wireless data and alarm status transmission via built-in RF modem (optional)   |
| Wireless Network  | ProRAE Guardian Real-Time Wireless Safety System   |
| Wireless Frequency                                      | ISM license-free bands   |
| Wireless Range (Typical)                                | MultiRAE to RAELink3 Mesh or RAELink3 Z1 Mesh modems ~ 33 feet (10 meters)   |
| Operating Temperature                                   | -4° to 122°F (-20° to 50°C)  |
| Humidity  | 0% to 95% relative humidity (non-condensing)   |
| Dust and Water Resistance                               | IP-65 rating   |
| Hazardous Location Approvals                            | CSA:  Class I, Division 1, Groups A, B, C and D, T4<br>ATEX:  0575  II 2G Ex ia d IIC T4 Gb<br>IECEX: Ex ia d IIC T4 Gb |
| CE Compliance (European Conformity)                     | EMC directive: 2004/108/EC. R&TTE directive: 1999/5/EC. ATEX directive: 94/9/EC  |
| EMI/RFI <sup>6</sup>                                    | No effect when exposed to 0.43mW/cm <sup>2</sup> RF interference from a 5-watt transmitter at 12"  |
| Performance Tests                                       | MIL-STD-810G compliant. LEL CSA C22.2 No. 152; ISA-12.13.01  |
| Languages   | Arabic, Chinese, Czech, Danish, Dutch, English, French, German, Indonesian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, and Swedish  |
| Warranty  | - Two years on non-consumable components and catalytic LEL, CO, H <sub>2</sub> S, and O <sub>2</sub> sensors<br>- One year on all other sensors, pump, battery, and other consumable parts   |

1 Additional equipment and/or software licenses may be required to enable remote wireless monitoring and alarm transmission.

2 Contact RAE Systems for availability.

3 RAE Systems recommends calibrating sensors on installation.

4 A two-gas combination sensor is required for a 6-gas configuration.

5 Specifications are subject to change.

6 Specification for non-wireless monitors.

#### Sensor Specifications<sup>5</sup>

| PID Sensors  | Range                        | Resolution       |
|--|------------------------------|------------------|
| VOC 10.6 eV (HR)   | 0 to 5,000 ppm               | 0.1 ppm          |
| VOC 9.8 eV <sup>2</sup>  | 0 to 1,000 ppm (benzene)     | 0.1 ppm          |
| Combustible Sensors  | Range                        | Resolution       |
| Catalytic LEL  | 0 to 100% LEL                | 1% LEL           |
| NDIR (0-100% LEL Methane)  | 0 to 100% LEL                | 1% LEL           |
| NDIR (0-100% Vol. Methane)                                       | 0 to 100% Vol.               | 0.1% Vol.        |
| Carbon Dioxide Sensor  | Range                        | Resolution       |
| Carbon Dioxide (CO <sub>2</sub> ) NDIR                           | 0 to 50,000 ppm              | 100 ppm          |
| Electrochemical Sensors  | Range                        | Resolution       |
| Ammonia (NH <sub>3</sub> )                                       | 0 to 100 ppm                 | 1 ppm            |
| Carbon Monoxide (CO)   | 0 to 500 ppm                 | 1 ppm            |
| Carbon Monoxide (CO), Ext. Range                                 | 0 to 2,000 ppm               | 10 ppm           |
| Carbon Monoxide (CO), H <sub>2</sub> -comp.                      | 0 to 2,000 ppm               | 10 ppm           |
| Carbon Monoxide (CO) + Hydrogen Sulfide (H <sub>2</sub> S) Combo | 0 to 500 ppm<br>0 to 200 ppm | 1 ppm<br>0.1 ppm |
| Chlorine (Cl <sub>2</sub> )                                      | 0 to 50 ppm                  | 0.1 ppm          |
| Chlorine Dioxide (ClO <sub>2</sub> )                             | 0 to 1 ppm                   | 0.03 ppm         |
| Ethylene Oxide (EtO-A)   | 0 to 100 ppm                 | 0.5 ppm          |
| Ethylene Oxide (EtO-B)   | 0 to 10 ppm                  | 0.1 ppm          |
| Ethylene Oxide (EtO-C), Ext. Range                               | 0 to 500 ppm                 | 10 ppm           |
| Formaldehyde (HCHO)  | 0 to 10 ppm                  | 0.05 ppm         |
| Hydrogen Cyanide (HCN)   | 0 to 50 ppm                  | 0.5 ppm          |
| Hydrogen Sulfide (H <sub>2</sub> S)                              | 0 to 100 ppm                 | 0.1 ppm          |
| Hydrogen Sulfide (H <sub>2</sub> S), Ext. Range                  | 0 to 1,000 ppm               | 1 ppm            |
| Methyl Mercaptan (CH <sub>3</sub> -SH)                           | 0 to 10 ppm                  | 0.1 ppm          |
| Nitric Oxide (NO)  | 0 to 250 ppm                 | 0.5 ppm          |
| Nitrogen Dioxide (NO <sub>2</sub> )                              | 0 to 20 ppm                  | 0.1 ppm          |
| Oxygen (O <sub>2</sub> )   | 0 to 30% Vol.                | 0.1% Vol.        |
| Phosphine (PH <sub>3</sub> )                                     | 0 to 20 ppm                  | 0.1 ppm          |
| Sulfur Dioxide (SO <sub>2</sub> )                                | 0 to 20 ppm                  | 0.1 ppm          |

### ORDERING INFORMATION (MODEL: PGM-622X)

- Wireless<sup>1</sup> and non-wireless configurations are available
- Refer to the Portables Pricing Guide for part numbers for monitors, accessories, sampling and calibration kits, gas, sensors, and replacement parts

#### CORPORATE HEADQUARTERS

**RAE Systems, Inc.**  
3775 North First Street  
San Jose, CA 95134 USA  
raesales@raesystems.com

DS-1070-02

#### WORLDWIDE SALES OFFICES

**USA/Canada** 1.877.723.2878  
**Europe** +45.86.52.51.55  
**Middle East** +00971.4.440.5949  
**China** +86.10.5885.8788-3000  
**Asia Pacific** +852.2669.0828