



# environmental SCIENCE

AND TECHNOLOGY

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## MultiRAE Pro

### Wireless Portable Multi-Threat Radiation and Chemical Detector

The MultiRAE Pro is the industry's only portable wireless multithreat monitor. The MultiRAE Pro's ability to simultaneously detect gamma radiation and toxic industrial chemicals (TICs/ TIMs) enables responders to reduce the equipment footprint and achieve greater agility when operating downrange.

The MultiRAE Pro's optional wireless capability improves safety by providing commanders and safety officers real-time access to instrument readings and alarm status from any location<sup>1</sup> for better situational awareness and faster incident response.

### Key Features

#### Wireless. Versatile. Proven.

- Device management with Honeywell Sotera™
- All-in-one monitoring capabilities for radiation, VOCs, oxygen, toxic and combustible gases, up to 6 threat types at a time<sup>2</sup>
- Over 25 interchangeable sensor options, including parts-per-billion PID and gamma radiation
- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Intelligent sensors store calibration data, so they can be swapped in the field<sup>3</sup>
- Large graphical display with easy-to-use, icon-driven user interface

### APPLICATIONS

- Civil defense (search and rescue)
- Homeland security
- HazMat response
- Military
- Semiconductor manufacturing
- Environmental



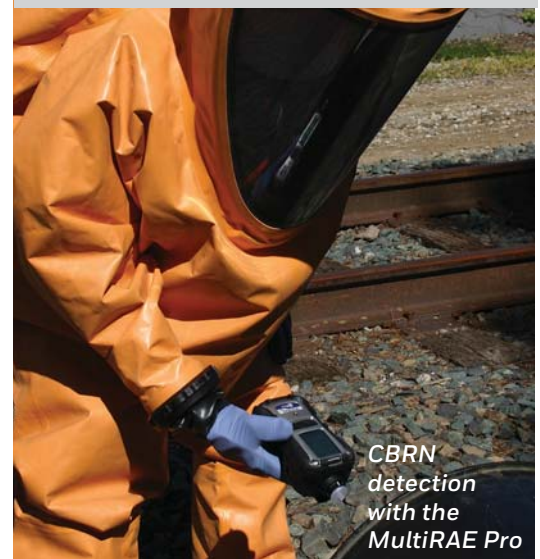
Detector of choice for government agencies and top HazMat teams worldwide

Highly versatile and customizable

Man Down Alarm with real-time remote wireless notification

Compliant with MIL-STD-810G and 461F performance standards

Fully automatic bump testing and calibration with AutoRAE 2



CBRN detection with the MultiRAE Pro

# MultiRAE Pro Specifications

Instrument Specifications <sup>4</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 gamma radiation, ppb and ppm PID sensors 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>5</sup> and Recharge Time	- Rechargeable Li-ion (~12-hr. runtime, < 6-hr. recharge time) - Extended duration Li-ion (~18-hr. runtime, < 9-hr. recharge time) - 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; - Man Down Alarm on/off; visual compliance indicator; battery status; datalogging on/off; wireless on/off and reception quality. - STEL, TWA, 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 or manual
Alarms	Wireless remote alarm notification; multi-tone audible (95 dB @ 30 cm), vibration, visible (flashing bright red LEDs), and on-screen indication of alarm conditions - 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) - 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 desktop charging and PC comm. cradle, travel charger, or AutoRAE 2 Automatic Test and Calibration System - Wireless data and alarm status transmission via built-in RF modem (optional)
Wireless Network	ProRAE Guardian Real-Time Wireless Safety System or EchoView Host-based Closed-Loop System
Wireless Range (Typical)	MultiRAE Pro to RAELink3 [Z1] Mesh modem ~330 feet (100 meters) MultiRAE Pro to EchoView Host, RAEMesh Reader or RAEPoint ~660 feet (200 meters) MultiRAE Pro to Access Point ~ 330 feet (100 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 ingress protection rating
Safety Certifications	CSA: Class I, Division 1, Groups A, B, C and D, T4 Class II, Division 1, Groups E, F, G T85°C ATEX: 0575 II 1G Ex ia IIC T4 Ga 2G Ex ia d IIC T4 Gb with IR Sensor installed I M1 Ex ia I Ma IECEX: Ex ia IIC T4 Ga Ex ia d IIC T4 Gb with IR Sensor installed I M1 Ex ia I Ma IECEX/ANZEX: Ex ia IIC T4 Ga Ex ia d IIC T4 Gb with IR Sensor installed Ex ia I Ma
EMI/RFI <sup>6</sup>	EMC directive: 2004/108/EC
Performance Tests	MIL-STD-810G and 461F 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, Swedish, and Turkish
Warranty	- Three years on Liq O <sub>2</sub> sensors - Two years on non-consumable components and catalytic LEL, CO, H <sub>2</sub> S, and O <sub>2</sub> sensors - One year on all other sensors, pump, battery, and other consumable parts
Wireless Frequency	ISM license free band. IEEE 802.15.4 Sub 1GHz Wi-Fi 802.11 b/g
Wireless Approvals	FCC Part 15, CE R&TTE, Others <sup>4</sup>
Radio Module	Supports RM900A

Sensor Specifications <sup>4</sup>		
Radiation Sensor	Range	Sensor Type
Gamma	0 to 20,000 µRem/h (dose rate)	1cc CsI (TI) scintillator with photodiode
PID Sensors	Range	Resolution
VOC 10.6 eV (Ext. Range)	0 to 5,000 ppm	0.1 ppm
VOC 10.6 eV (ppb)	0 to 2,000 ppm	10 ppb
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
Ammonia (NH <sub>3</sub> HR) Ext. Range	0 to 500 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 0 to 200 ppm	1 ppm 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
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
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.
Liq Oxygen (O <sub>2</sub> )	0 to 30% Vol.	0.1% Vol.
Phosphine (PH <sub>3</sub> )	0 to 20 ppm	0.1 ppm
Phosphine H (PH <sub>3</sub> H)	0 to 20 ppm	0.1 ppm
Sulfur Dioxide (SO <sub>2</sub> )	0 to 20 ppm	0.1 ppm

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

<sup>2</sup> A two-gas combination sensor is required for a 6-gas configuration.

<sup>3</sup> RAE Systems recommends calibrating sensors on installation.

<sup>4</sup> Specifications are subject to change.

<sup>5</sup> Specification for non-wireless monitors.

<sup>6</sup> Please contact RAE Systems for specific wireless approvals.

## Ordering Information

**(MODEL: PGM-6248)**

- 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

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Datasheet\_MultiRAE\_Pro\_DS1068\_09  
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