MultiRAE Pro

Wireless Portable Multi-Threat Monitor for Radiation and Chemical Detection

The MultiRAE Pro is the industry's first wireless multi-threat detection tool that combines advanced simultaneous monitoring capabilities for gamma radiation and multiple chemical threats in one highly portable instrument.

The MultiRAE Pro's wireless capability elevates safety by providing commanders real-time access to instrument readings and alarm status from any location[1] for better visibility and faster incident response.

- **World's first wireless portable multi-threat monitor**
- **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[2]**

KEY FEATURES

Wireless. Versatile. Proven.

- All-in-one continuous monitoring capabilities for radiation, VOCs, oxygen, toxic and combustible gases, up to 6 threats at a time[3]
- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions[1]
- Over 25 interchangeable sensor options, including parts-per-billion PID
- Intelligent sensors store calibration data, so they can be swapped in the field[4]
- Large graphical display with easy-to-use, icon-driven user interface

APPLICATIONS

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

CBRN detection with the MultiRAE Pro

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SPECIFICATIONS

Instrument Specifications[5]

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_2 NDIR sensor
Battery Options, Runtime[6] and Recharge Time	- Rechargeable Li-ion (~12-hr. runtime, < 6-hr. recharge time) - Extended duration[2] 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; 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[2] 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 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
Wireless Frequency	ISM license-free bands
Wireless Range (Typical)	MultiRAE Pro 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/IP-67 (when off) rating
Hazardous Location Approvals	CSA: cSPus Class I, Division 1, Groups A, B, C and D, T4 ATEX: CE 0575 Ex II 2G Ex ia d IIC T4 Gb 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[6]	No effect when exposed to 0.43mW/cm^{2} 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_2S, and O_2 sensors - 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 A two-gas combination sensor is required for a 6-gas configuration.
4 RAE Systems recommends calibrating sensors on installation.
5 Specifications are subject to change.
6 Specification for non-wireless monitors.

Sensor Specifications[5]

Radiation Sensor	Range	Resolution
Gamma	0 to 20,000 µREM/h 1 µREM to 4.29 REM (dose range)	1 µREM/h

PID Sensors	Range	Resolution
VOC 10.6 eV (HR) VOC 10.6 eV (ppb) VOC 9.8 eV[2]	0 to 5,000 ppm 0 to 2,000 ppm 0 to 1,000 ppm (benzene)	0.1 ppm 10 ppb 0.1 ppm

Combustible Sensors	Range	Resolution
Catalytic LEL NDIR (0-100% LEL Methane) NDIR (0-100% Vol. Methane)	0 to 100% LEL 0 to 100% LEL 0 to 100% Vol.	1% LEL 1% LEL 0.1% Vol.

Carbon Dioxide Sensor	Range	Resolution
Carbon Dioxide (CO_2) NDIR	0 to 50,000 ppm	100 ppm

Electrochemical Sensors	Range	Resolution
Ammonia (NH_3)	0 to 100 ppm	1 ppm
Carbon Monoxide (CO) Carbon Monoxide (CO), Ext. Range Carbon Monoxide (CO), H_2-comp.	0 to 500 ppm 0 to 2,000 ppm 0 to 2,000 ppm	1 ppm 10 ppm 10 ppm
Carbon Monoxide (CO) + Hydrogen Sulfide (H_2S) Combo	0 to 500 ppm 0 to 200 ppm	1 ppm 0.1 ppm
Chlorine (Cl_2)	0 to 50 ppm	0.1 ppm
Chlorine Dioxide (ClO_2)	0 to 1 ppm	0.03 ppm
Ethylene Oxide (EtO-A) Ethylene Oxide (EtO-B) Ethylene Oxide (EtO-C), Ext. Range	0 to 100 ppm 0 to 10 ppm 0 to 500 ppm	0.5 ppm 0.1 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_2S) Hydrogen Sulfide (H_2S), Ext. Range	0 to 100 ppm 0 to 1,000 ppm	0.1 ppm 1 ppm
Methyl Mercaptan (CH_3-SH)	0 to 10 ppm	0.1 ppm
Nitric Oxide (NO)	0 to 250 ppm	0.5 ppm
Nitrogen Dioxide (NO_2)	0 to 20 ppm	0.1 ppm
Oxygen (O_2)	0 to 30% Vol.	0.1% Vol.
Phosphine (PH_3)	0 to 20 ppm	0.1 ppm
Sulfur Dioxide (SO_2)	0 to 20 ppm	0.1 ppm

ORDERING INFORMATION (MODEL: PGM-624X)

- Wireless[1] 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