

# Radiation and Chemical Detection Monitor



## **RAE Systems MultiRAE Pro**

The MultiRAE Pro is the industry's first wireless multi-threat detection tool that combines continuous monitoring capabilities for gamma radiation, volatile organic compounds (VOCs), toxic, combustible gases, and oxygen, with Man Down Alarm functionality in one highly portable instrument.

The MultiRAE Pro's wireless capability elevates worker protection to the next level by providing safety officers real-time access to instrument readings and alarm status from any location for better visibility and faster incident response.

### **FEATURES**

- World's first wireless<sup>1,3</sup> 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 automated bump testing and calibration with AutoRAE 2<sup>1</sup>
- All-in-one continuous monitoring capabilities for radiation, VOCs, oxygen, toxic and combustible gases, up to 6 threats at a time<sup>4</sup>
- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Over 30 interchangeable sensor options, including parts-per-billion PID
- Intelligent sensors store calibration data, so they can be swapped in the field<sup>2</sup>
- Large graphical display with easy-to-use, icon-driven user interface

### **APPLICATIONS**

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



**CALL GEOTECH TODAY (800) 833-7958**

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## RAE Systems MultiRAE Pro

### SPECIFICATIONS

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

<b>Size</b>	7.6" H x 3.8" W x 2.6" D (193 x 96.5 x 66 mm)
<b>Weight</b>	31 oz. (880 g)
<b>Sensors</b>	Over 30 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
<b>Battery Options</b>	<ul style="list-style-type: none"> <li>- Rechargeable Li-ion (~12-hr. runtime, &lt;6-hr. recharge time)</li> <li>- Extended duration Li-ion (~18-hr. runtime, &lt;9-hr. recharge time)</li> <li>- Alkaline adapter with 4 x AA batteries (~6-hr. runtime)</li> </ul>
<b>Display</b>	Monochrome graphical LCD display (128 x 160) with backlighting. Automatic screen "flip" feature.
<b>Display Readout</b>	<ul style="list-style-type: none"> <li>- Real-time reading of gas concentrations; PID measurement gas and correction factor; battery status; datalogging on/off; wireless on/off and reception quality.</li> <li>- STEL, TWA, peak, and minimum values</li> </ul>
<b>Keypad Buttons</b>	3 operation and programming keys (Mode, Y/+, and N/-)
<b>Sampling</b>	Built-in pump. Average flow rate: 250 cc/min. Auto shutoff in low-flow conditions
<b>Calibration</b>	Automatic with AutoRAE 2 Test and Calibration System <sup>1</sup> or manual
<b>Alarms</b>	<ul style="list-style-type: none"> <li>- Wireless remote alarm notification; multi-tone audible (95 dB @ 30 cm), vibration, visible (flashing bright red LEDs), and on-screen indication of alarm conditions</li> <li>- Man Down Alarm with pre-alarm and real-time remote wireless notification</li> </ul>
<b>Datalogging</b>	<ul style="list-style-type: none"> <li>- Continuous datalogging (6 months for 5 sensors at 1-minute intervals, 24/7)</li> <li>- User-configurable datalogging intervals (from 1 to 3,600 seconds)</li> </ul>
<b>Communication and Data Download</b>	<ul style="list-style-type: none"> <li>- Data download and instrument set-up and upgrades on PC via charging and PC comm. cradle, travel charger, or AutoRAE 2 Automated Test and Calibration System<sup>1</sup></li> <li>- Wireless data and alarm status transmission via built-in RF modem (optional)</li> </ul>
<b>Wireless Network</b>	RAE Systems Dedicated Wireless Network
<b>Wireless Frequency</b>	ISM license-free bands
<b>Wireless Range (Typical)</b>	656 feet (200 meters)
<b>Operating Temperature</b>	-4° to 122°F (-20° to 50°C)
<b>Humidity</b>	0% to 95% relative humidity (non-condensing)
<b>Dust and Water Resistance</b>	IP65/IP67 (when off) rating
<b>Hazardous Location Approvals</b>	CSA: CSAUS 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
<b>CE Compliance (European Conformity)</b>	EMC directive: 2004/108/EC. R&TTE directive: 1999/5/EC. ATEX directive: 94/9/EC
<b>EMI/RFI</b>	No effect when exposed to 0.43mW/cm <sup>2</sup> RF interference from a 5-watt transmitter at 12"
<b>Performance Tests</b>	MIL-STD-810F compliant. LEL CSA C22.2 No. 152; ISA-12.13.01
<b>Languages</b>	Arabic, Chinese, Czech, Danish, Dutch, English, French, German, Indonesian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, and Swedish
<b>Warranty</b>	<ul style="list-style-type: none"> <li>- Two years on non-consumable components and catalytic LEL, CO, H<sub>2</sub>S, and O<sub>2</sub> sensors</li> <li>- One year on all other sensors, pump, battery, and other consumable parts</li> </ul>

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

Sensors	Range	Resolution
<b>Gamma</b>	0 to 20,000 microREM/h 1 microREM to 4.29 REM (dose range)	1 microREM/h
<b>PID Sensors</b>		
VOC 10.6 eV (HR)	0 to 5,000 ppm	0.1 ppm
VOC 10.6 eV (ppb)	0 to 2,000 ppm	10 ppb
VOC 9.8 eV <sup>1</sup>	0 to 1,000 ppm	0.1 ppm
<b>Combustible Sensors</b>		
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.
<b>Carbon Dioxide Sensor</b>		
Carbon Dioxide (CO <sub>2</sub> ) NDIR	0 to 50,000 ppm	100 ppm
<b>Electrochemical Sensors</b>		
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 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
Ethylene Oxide (EtO-C), Ext. Range	0 to 500 ppm	10 ppm
Formaldehyde (HCHO)	0 to 10 ppm	0.01 ppm
Hydrogen (H <sub>2</sub> )	0 to 1,000 ppm	2 ppm
Hydrogen Chloride (HCl)	0 to 15 ppm	1 ppm
Hydrogen Cyanide (HCN)	0 to 50 ppm	0.5 ppm
Hydrogen Fluoride (HF)	0 to 10 ppm	0.1 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.
Phosgene (COCl <sub>2</sub> )	0 to 1 ppm	0.02 ppm
Phosphine (PH <sub>3</sub> )	0 to 20 ppm	0.1 ppm
Phosphine (PH <sub>3</sub> ), Ext. Range	0 to 1,000 ppm	1 ppm
Sulfur Dioxide (SO <sub>2</sub> )	0 to 20 ppm	0.1 ppm

- 1 Contact Geotech for availability.
- 2 RAE Systems recommends calibrating sensors on installation.
- 3 Additional equipment and/or software licenses may be required to enable remote wireless monitoring and alarm transmission.
- 4 The CO + H<sub>2</sub>S combo sensor is required for a 6-threat configuration.
- 5 Specifications are subject to change.

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