



# AreaRAE

## Rapid Deployment Kit System Package for Hazardous Environment Detection

The AreaRAE is a one- to five-sensor gas detector equipped with a wireless RF (radio frequency) modem which allows the unit to communicate and transmit readings and other information on a real-time basis with a remotely located base controller.

In stand-alone operation, the AreaRAE is a rugged, weather-resistant, portable monitor that can run over 24 hours on either rechargeable Lithium-ion or alkaline batteries. It is also the first "lunchbox"-type multi-sensor instrument able to include a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs), as well as LEL, O<sub>2</sub> and up to two electrochemical toxic sensors to measure specific toxic substances such as CO and H<sub>2</sub>S.

The RF modem allows real-time data transmissions with a base controller located up to two miles away from the AreaRAE detector. A personal computer can be used as the base station for an AreaRAE system. The standard ProRAE Remote software used to control AreaRAE systems is capable of monitoring the input of up to 32 remotely located monitors.

AreaRAE options include the ability to track and display readings from remotely located detectors on a GPS map.

The AreaRAE is ideal for HazMat and other emergency response monitoring programs. AreaRAE detectors can be used to quickly establish an emergency perimeter by setting out multiple monitors at strategic locations, then backing off to a position of safety to monitor readings over the wireless link.

The AreaRAE is available individually or as part of the Rapid Deployment Kit (RDK) system package.

### Key Features

- Up to five sensors (PID, LEL, O<sub>2</sub> and two toxic)
- Loud buzzer and large, extra-bright warning light
- Large LCD display and keypad
- Rugged, weather-resistant housing
- Built-in pump
- Interchangeable Lithium-ion or alkaline battery pack
- Continuous operation via AC source

### Additional Advantages

- Real-time wireless data transmission with built-in RF modem
- View real-time sensor data and alarm status at headquarters or command center
- ProRAE Remote software simultaneously controls and displays readings for up to 32 remote detectors
- License-free, ISM-band RF transmission with communication range up to 2 miles (extendable with RAE Link2 Repeaters)
- Optional wall-mounting bracket or field mounting tripod adapter
- Optional GPS provides ability to track and display readings from remote detectors

### Applications

- HazMat and Emergency Response
- Refineries and Petrochemical Plants
- Confined Space Entry
- Power Plants
- Pulp and Paper Industry
- Plant and Mill Turnarounds
- Marine and Offshore Wells



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## Specifications\*

### Detector Specifications

<b>Size</b>	9.25" L x 5.0" W x 9.25" D (235mm L x 127mm W x 235mm D) without handle
<b>Weight</b>	8.5 lbs. (3.9 kg) with battery pack
<b>Detector</b>	Up to five sensors (O <sub>2</sub> , combustible, two toxic and VOC), electrochemical sensors for toxic gases and oxygen, photoionization sensor for VOC, catalytic combustion sensor for combustible gases
<b>Battery</b>	Rechargeable, 7.4V/4.5Ah, Lithium-ion battery pack with built in charger (less than 10 hours charge time) or a 6 C-size alkaline battery pack
<b>Operating Hours</b>	36 hrs continuous stand-alone operation, 24 hrs continuous wireless operation (Lithium-ion battery), 18 hrs continuous wireless operation (alkaline battery)
<b>Display</b>	2-line, 16-digit LCD with manually activated LED back light
<b>Keypads</b>	3 operation and 4 programming keys
<b>Direct Readout</b>	Instantaneous values, sensor name, high and low values for all detectors, TWA and STEL values for toxic gases and VOCs, battery voltage and elapsed time
<b>Alarm</b>	Flashing red LED cluster to indicate exceeded preset limits, low battery or sensor failure
<b>Alarm Setting</b>	Separate alarm limit settings for TWA, STEL, Low and High alarm
<b>Audible Alarm</b>	100dB buzzer at 10cm (typical)
<b>Visual Alarm</b>	Flashing red LED cluster
<b>Alarm Mode</b>	Latching/automatic reset
<b>Datalogging</b>	4,000 points for each sensor with time stamp, serial number, user ID, site ID
<b>Data Storage</b>	20,000 readings (64 hours, 5 channels at 1-minute intervals) in non-volatile memory
<b>Datalog Interval</b>	Programmable 1 to 3600 sec
<b>Communication</b>	Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC
<b>EM Immunity</b>	No effect when exposed to 0.43 mW/cm <sup>2</sup> RF interference (5-watt transmitter at 12 inches)
<b>Safety Certification</b>	CSA Classified for use in Class I, Division 2, Groups A, B, C, and D (w/ 900 MHz modem)
<b>Frequency</b>	902 to 928 MHz (License-free)
<b>RF Range</b>	Up to 2 miles (900 MHz) - extendable with RAElink2 Repeaters
<b>Calibration</b>	Two-point field calibration for fresh air and standard reference gas
<b>Sampling Pump</b>	Internal integrated diaphragm pump with programmable High (400cc/min) and Low (300cc/min) flow rate settings
<b>Low Flow Alarm</b>	Auto shut off pump at low flow condition
<b>Temperature</b>	-4° to 113°F (-20° to 45°C)
<b>Humidity</b>	0% to 95% relative humidity (non-condensing)
<b>Optional</b>	Integrated GPS receiver

\*Specifications are subject to change

### Sensor Specifications

Gas Monitor	Range	Resolution
Oxygen	0 to 30.0%	0.1%
Combustible	1 to 100% LEL	1% LEL
VOCs	0 to 199 ppm 200 to 2,000 ppm	0.1 ppm 1 ppm
Carbon Monoxide	0 to 500 ppm	1 ppm
Carbon Monoxide	10 to 2000 ppm	10ppm
Hydrogen Sulfide	0 to 100 ppm	1 ppm
Sulfur Dioxide	0 to 20.0 ppm	0.1 ppm
Nitric Oxide	0 to 250 ppm	1 ppm
Nitrogen Dioxide	0 to 20.0 ppm	0.1 ppm
Chlorine	0 to 10.0 ppm	0.1 ppm
Hydrogen Cyanide	0 to 100 ppm	1 ppm
Ammonia	0 to 50 ppm	1 ppm
Phosphine	0 to 5.0 ppm	0.1 ppm
Hydrogen Chloride	2 to 15 ppm	1 ppm
Hydrogen Fluoride	2 to 10 ppm	1 ppm

### Monitor only includes:

- Monitor as specified
- Sensors as specified
- Carbon filters (for units with CO sensor)
- Calibration adapter
- Quick reference guide
- Operation and maintenance manual
- Shoulder strap
- Rechargeable Lithium-ion battery pack
- 120/240 VAC AC/DC Adapter
- Spare alkaline battery pack
- 10 spare external filters
- Hard transport case with pre-cut foam
- 15' (5m) Teflon® tubing
- Tool kit

### Instrument with calibration kit also includes:

- Calibration gas (kit may contain multiple cylinders, depending on the sensors installed)
- Calibration regulator and tubing (kit may contain a second regulator, depending on the types of calibration gases included)
- Hard transport case with pre-cut foam interior padding

### Datalogging Monitors also include:

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

### ProRAE Remote Basic Host Software Package includes:

- ProRAE Remote Software for Windows® 98, NT, 2000 and XP
- RAElink Modem

### AreaRAE Model Numbers:

- AreaRAE with RF modem: PGM-5020
- AreaRAE with RF modem & GPS option: PGM-5020

DISTRIBUTED BY:

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**RAE Systems Inc.**  
 3775 North First Street  
 San Jose, CA 95134 USA  
 raesales@raesystems.com  
 USA/Canada 1-877-723-2878  
 Europe/Russia +45 8652 5155  
 Middle East/Australia 971 50 429 1385  
 China 8610 58858788  
 Asia +852 2669 0828

**www.raesystems.com**

