



# AreaRAE

## Rapidly Deployable, Wireless, Multi-channel, Compact Multi-gas Monitor

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 for measurement of 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 Li-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 RAELink 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



# Specifications\*

## Sensor Specifications

Gas Monitor	Range	Resolution
Oxygen	0-30.0%	0.1%
Combustible	1-100% LEL	1% LEL
VOCs	0-200.0 ppm	0.1 ppm
	200-2,000 ppm	1 ppm
Carbon Monoxide	0-500 ppm	1 ppm
Hydrogen Sulfide	0-100 ppm	1 ppm
Sulfur Dioxide	0-20.0 ppm	0.1 ppm
Nitric Oxide	0-250 ppm	1 ppm
Nitrogen Dioxide	0-20.0 ppm	0.1 ppm
Chlorine	0-10.0 ppm	0.1 ppm
Hydrogen Cyanide	0-100 ppm	1 ppm
Ammonia	0-50 ppm	1 ppm
Phosphine	0-5.0 ppm	0.1 ppm

## Detector Specifications

<b>Size</b>	9.25"L x 5.0"W x 9.25"H (w/o 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>	4000 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 1-3600 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 inch)
<b>Intrinsic Safety</b>	UL and CSA Classified for use in Class 1, Division II, Groups A,B, C, and D (w/ 900 MHz modem)
<b>Frequency</b>	902 to 928 MHz (License free) or 2.400 to 2.4835 GHz (License free, 3 user selectable channels)
<b>RF Range</b>	Up to 2 miles (900 MHz) - extendable with RAELink Repeaters
<b>Error Detection</b>	32 bit CRC, resend on error

## Detector Specifications (continued)

<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>Attachment</b>	Shoulder strap, optional tripod/wall mounting bracket
<b>Optional</b>	Integrated GPS receiver

\*Ongoing projects to enhance our products means that these specifications are subject to change

### Monitor only includes:

- Monitor as specified
- Sensors as specified
- Carbon filters (for units with CO)
- 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

### 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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