



# AreaRAE Gamma

## Wireless, Multi-channel, Compact and Easily Transportable Multi-gas and Radiation Monitor

The AreaRAE Gamma is a combination multi-gas and radiation detector equipped with a wireless, RF (radio-frequency) modem that allows the unit to communicate and transmit sensor and other information on a real-time basis with a remotely located base controller.

In the stand alone operation, the AreaRAE Gamma is a rugged, weather-resistant, one-to-five sensor portable monitor that can run up to 24 hours on either rechargeable Lithium-ion or optional alkaline batteries. It is also the first "lunchbox"- type multi-sensor instrument able to include a gamma sensor for measurement of gamma radiation, a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs), as well as an LEL combustible gas sensor, oxygen sensor, and a selectable electrochemical toxic sensor.

The RF modem allows real-time data transmissions with a base controller located up to two miles (3.2 km) away from the AreaRAE Gamma detector. A personal computer can be used as the base station. The standard ProRAE Remote software used to control AreaRAE Gamma systems is capable of monitoring the input of up to 32 remotely located monitors.

### Key Features

- Up to four gas sensors (PID, LEL, O<sub>2</sub> and selectable toxic gas)
- One radiation sensor (Gamma)
- Loud buzzer and large, extra-bright warning light
- Large LCD display and keypad
- Rugged, weather-resistant housing (IP55)
- Built-in sampling 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 commandcenter
- Optional GPS provides ability to track and display readings from remote detectors
- License-free, ISM-band RF transmission with communication range up to 2 miles

- Fully hardware and software compatible with standard AreaRAE (PGM-5020) 5-gas monitoring system
- Standard AreaRAE (PGM-5020) is factory upgradeable to AreaRAE Gamma

### Applications

- HazMat and Emergency Response
- Homeland Defense Applications
  - Public Venue Protection
  - First Responders
  - Port Security
  - Border Crossings



A wirelessly networked AreaRAE deployment providing public venue protection



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# AreaRAE Gamma

## 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

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### Sensor Specifications

Radiation	DER Range	Energy Range	Sensitivity
Gamma	1 to 4000 µR/h (0.01 to 40 µSv/h)	0.060 to 3.0 MeV	>100 cps / µSv/hr

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
- 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
- External filter adapter
- 10 spare external filters
- 5 Internal 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® 2000 and XP
- Computer interface cable

### ProRAE Remote Basic Host Software Package includes:

- ProRAE Remote Software for Windows 2000 and XP
- RAELink2 Modem

### AreaRAE Gamma Model Numbers:

- AreaRAE Gamma with RF modem: PGM-5120
- AreaRAE Gamma with RF modem & GPS option: PGM-5120

