



# 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 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
- 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



# Specifications\*

## Sensor Specifications

Radiation	DER Range	Energy Range	Sensitivity
Gamma	1-4000uR/h (0.01-40 uSv/h)	0.060-3.0 MeV	>100 cps / uSv/hr

Chemical	Range	Resolution
Combustible	0-100% LEL	1% LEL
VOCs	0-200 ppm	0.1 ppm
	200-2000 ppm	1 ppm
Oxygen	0-30%	0.1%
Carbon Monoxide	0-500 ppm	1 ppm
Hydrogen Sulfide	0-100 ppm	1 ppm
Sulfur Dioxide	0-250 ppm	1 ppm
Nitric Oxide	0-20 ppm	0.1 ppm
Nitrogen Dioxide	0-10 ppm	0.1 ppm
Chlorine	0-10 ppm	0.1 ppm
Hydrogen Cyanide	0-100 ppm	1 ppm
Ammonia	0-50 ppm	1 ppm
Phosphine	0-5 ppm	0.1 ppm



A wirelessly networked AreaRAE deployment providing public venue protection

## 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

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

## Detector Specifications

<b>Size</b>	9.25"L x 5.0"W x 9.25"H (w/o handle)
<b>Weight</b>	9.8 lbs. (4.5 kg) with battery pack
<b>Detector</b>	Up to five sensors (radiation, combustible, oxygen, toxic and VOC), electrochemical sensor for toxic gases and oxygen, photoionization sensor for VOC, catalytic sensor for combustible gases, scintillation crystal for gamma radiation
<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-cell alkaline battery pack
<b>Operating Hours</b>	32 hrs continuous stand-alone operation, 21 hrs. continuous wireless operation (Lithium-ion battery), 16 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 for VOC toxic gases, Low and High alarm for LEL, and radiation
<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)



### 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
- RAELink Modem

### AreaRAE Gamma Model Numbers:

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

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