# 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 partsper-million measurement of volatile organic compounds (VOCs), as well as an LEL combustible gas sensor, oxygen sensor, and a selectable electrochemical toxic sensor.

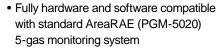
The RF modem allows real-time data transmissions with a base controller located up to two miles (3.2 km) away from the AreaRAE Gamma detector. A personal computer can be used as the base station. The standard ProRAE Remote software used to control AreaRAE Gamma systems is capable of monitoring the input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

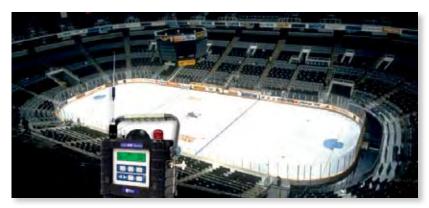


 Standard AreaRAE (PGM-5020) is factory upgradeable to AreaRAE Gamma

# 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



# www.raesystems.com







# Specifications\*

### **Detector Specifications**

Size	9.25" L x 5.0" W x 9.25" D (235mm L x 127mm W x 235mm D) without handle			
Weight	8.5 lbs. (3.9 kg) with battery pack			
Detector	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			
Battery	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			
Operating Hours	36 hrs continuous stand-alone operation, 24 hrs continuous wireless operation (Lithium-ion battery), 18 hrs continuous wireless operation (alkaline battery)			
Display	2-line, 16-digit LCD with manually activated LED back light			
Keypads	3 operation and 4 programming keys			
Direct Readout	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			
Alarm	Flashing red LED cluster to indicate exceeded preset limits, low battery or sensor failure			
Alarm Setting	Separate alarm limit settings for TWA, STEL, Low and High alarm			
Audible Alarm	100dB buzzer at 10cm (typical)			
Visual Alarm	Flashing red LED cluster			
Alarm Mode	Latching/automatic reset			
Datalogging	4,000 points for each sensor with time stamp, serial number user ID, site ID			
Data Storage	20,000 readings (64 hours, 5 channels at 1-minute intervals) in non-volatile memory			
Datalog Interval	Programmable 1 to 3600 sec			
Communication	Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC			
EM Immunity	No effect when exposed to 0.43 mW/cm <sup>2</sup> RF interference (5-watt transmitter at 12 inches)			
Safety Certification	CSA Classified for use in Class I, Division 2, Groups A,B, C, and D (w/ 900 MHz modem)			
Frequency	902 to 928 MHz (License-free)			
RF Range	Up to 2 miles (900 MHz) - extendable with RAELink2 Repeaters			
Calibration	Two-point field calibration for fresh air and standard reference gas			
Sampling Pump	Internal integrated diaphragm pump with programmable High (400cc/min) and Low (300cc/min) flow rate settings			
Low Flow Alarm	Auto shut off pump at low flow condition			
Temperature	-4° to 113°F (-20° to 45°C)			
Humidity	0% to 95% relative humidity (non-condensing)			
Optional	Integrated GPS receiver			

\*Specifications are subject to change

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### 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

#### 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<sup>®</sup> 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



120/240 VAC AC/DC Adapter

Spare alkaline battery pack

External filter adapter

5 Internal filters

pre-cut foam

Tool kit

• 10 spare external filters

· Hard transport case with

• 15' (5m) Teflon® tubing

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### **Sensor Specifications**

Radiation	DER Range		Energy Range	Sensitivity		
Gamma	1 to 4000 μR/h	ι (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		6 LEL		
VOCs		0 to 199 ppm		1 ppm		
		200 to 2,000 ppm		ppm		
Carbon Monoxide		0 to 500 ppm		ppm		
Carbon Monoxide		10 to 2000 ppm		)ppm		
Hydrogen Sulfide		0 to 100 ppm		ppm		
Sulfur Dioxide		0 to 20.0 ppm		1 ppm		
Nitric Oxide		0 to 250 ppm		ppm		
Nitrogen Dioxide		0 to 20.0 ppm		1 ppm		
Chlorine		0 to 10.0 ppm		1 ppm		
Hydrogen	Cyanide	0 to 100 ppm		1 ppm		
Ammonia		0 to 50 ppm		ppm		
Phosphine	e	0 to 5.0 ppm		1 ppm		
Hydrogen	Chloride	2 to 15 pp	m 1	1 ppm		
Hydrogen Fluoride		2 to 10 ppm		ppm		

