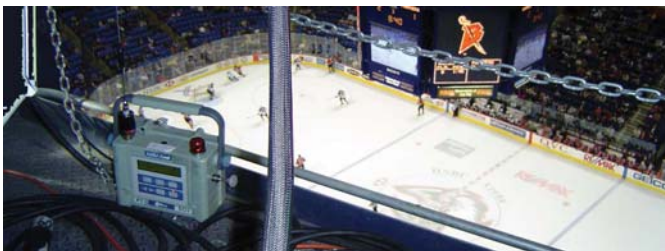# AreaRAE Gamma

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_2 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

A wirelessly networked AreaRAE deployment providing public venue protection

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

Detector Specifications

Size	9.25"L x 5.0"W x 9.25"H (w/o handle)
Weight	9.8 lbs. (4.5 kg) with battery pack
Detector	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
Battery	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
Operating Hours	32 hrs continuous stand-alone operation, 21 hrs. continuous wireless operation (Lithium-ion battery), 16 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 for VOC toxic gases, Low and High alarm for LEL, and radiation
Audible Alarm	100dB buzzer at 10cm (typical)
Visual Alarm	Flashing red LED cluster
Alarm Mode	Latching/automatic reset
Datalogging	4000 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 1-3600 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^2 RF interference (5 watt transmitter at 12 inch)

Detector Specifications (continued)

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)
Attachment	Shoulder strap, optional tripod/wall mounting bracket

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

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

DISTRIBUTED BY:

AreaRAE Gamma