



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 18 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 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 64 remotely located monitors.

Key Features

- Up to four gas sensors (PID, LEL, O₂ 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
- 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



 **Wireless**

 **GPS**

A wirelessly networked AreaRAE deployment providing public venue protection



AreaRAE Gamma

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
Sensors	Up to five sensors (PID, LEL, Gamma, and two selectable toxics; or PID, LEL, Gamma, O ₂ , and one selectable toxic)
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	Up to 18 hours continuous operation
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	110dB 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 ² 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 RAELink 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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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
- RAELink Modem

AreaRAE Gamma Model Numbers:

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

