RAE Systems, Inc. - AreaRAE GAMMA Steel

GENERAL DESCRIPTION:

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. 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 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.

TECHNICAL DESCRIPTION:

In addition to the Scintillation Crystal Detector, the AreaRAE GAMMA has a photoionization detector (PID) which uses an ultraviolet lamp and sensor to detect volatile organic compounds (VOCs) and halocarbons.

Tier Selection

Final tier assignment is based on overall product score.

Top Tier Second Tier Third Tier Fourth Tier Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	N/A	Second Tier	Second Tier
MOBILE Laboratory	N/A	Third Tier	Third Tier
DIAGNOSTIC Laboratory	N/A	Bottom Tier	Fourth Tier
ANALYTICAL Laboratory	N/A	Fourth Tier	Third Tier

Survey Source

Vendor and Internet Supplied Information

CONTACT INFORMATION

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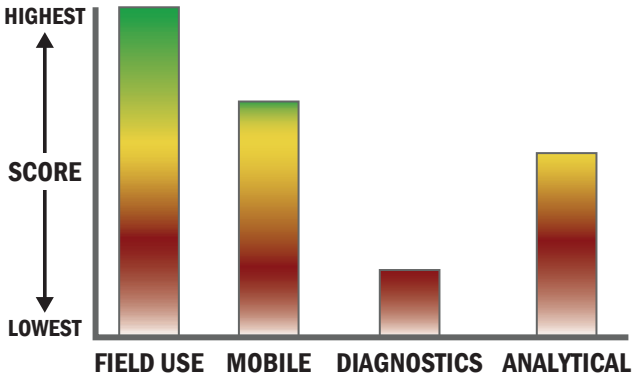
COST

- $9,594/system
- N/A/analysis

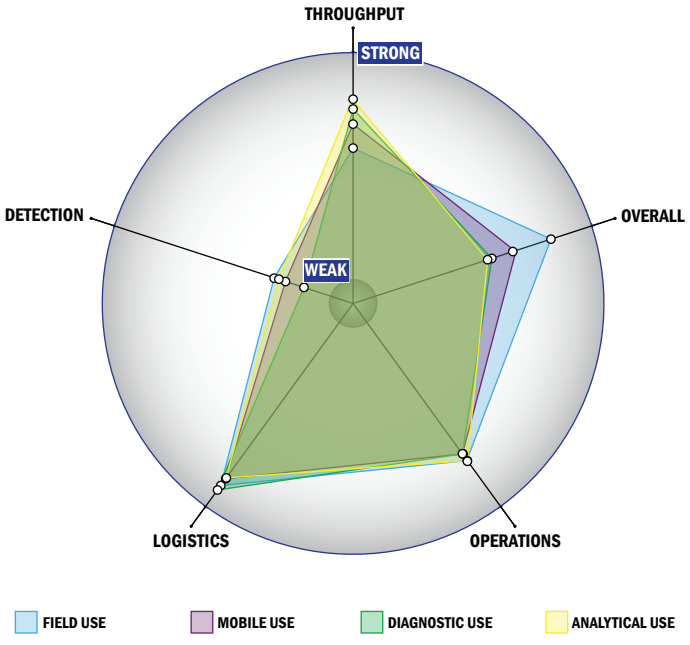
Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



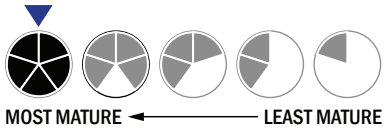
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- Multiple samples, single tests/sample per run
- System is continuous and provides real time analysis with no defined tests/samples
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 5 or more components
- 5-10 minutes is required for set-up
- 1-2 steps are required for detection

Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a toaster
- Between 1 and 5 kg
- Satellite, wireless and wired connections are available
- System or device uses batteries
- 4-8 hours battery life



Operations:

- Can be used from -21°C to 41°C
- This system does not require consumable components
- Device or system has peak performance at normal relative humidity conditions
- Between 6 months and 1 year shelf life
- 5-10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is open but modification requires licensing
- The system hardware is open but modification requires licensing

Detection:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- This system does not test liquids
- 1 ppm-100 ppm
- Possible the system could be adapted to identify liquid chemical agent
- Only count rate
- Down to background level radiation for count rate
- System is used for surveying