

PROENGIN Inc. - AP4C-VB



GENERAL DESCRIPTION:

The AP4C-VB is designed for the detection of Biological warfare agents Chemical warfare agents and toxic industrial materials for temporary fixed site locations and missions aboard vehicles including UAVs, UGVs & UUV's.



AP4C-VB uses the flame spectrophotometry technology (FPD), which allows safe reliable detection of chemical simple elements or bonds within molecules. Therefore well-known biological agents, all nerve agents, all blister agents, all blood agents, numerous choking agents, and toxic industrial materials can be simultaneously detected by this technology. Lists of detectable Biological Warfare Agents, Chemical Warfare Agents, TICs are on request. Thanks to its size and simplicity of integration and use, AP4C-VB can easily be fitted to numerous applications and will achieve its mission with no difficulty. AP4C-VB meets battlefield equipment environmental standards.

TECHNICAL DESCRIPTION:

Flame Spectrometry Technology (FPD)

AP4C-VB analyzes airborne gas, aerosols and particles. These materials are burned in a hydrogen flame, emitting specific light, which is analyzed in real-time. Detection results are displayed in type of detected and concentration. Chemical detection at atomic elements or chemical bonds show specific light emission spectrum, like Phosphorus, Sulfur, Arsenic, H-N-O, Potassium, Sodium, Calcium and other elements that can be detected.

FPD allows detection of an unlimited number of gases, unrefined, precursors, derivatives or Non Traditional Agents.

Numerous advantages of FPD technology:

- No limitation of the number of molecules that can be detected
- No need for the exact molecule to give an alarm. Mixed products, unrefined products, precursors, derivatives and Non Traditional Agents can be detected
- No filter and no membrane therefore no risk of clogging
- Very short recovery time after a positive detection
- Insensitivity to environment (dust, diesel exhausts, high humidity rate)
- Very few interferences compared with other technologies
- Reduced maintenance

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
MOBILE Laboratory			N/A
DIAGNOSTIC Laboratory			N/A
ANALYTICAL Laboratory			N/A

CONTACT INFORMATION

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Survey Source

Vendor Supplied Information

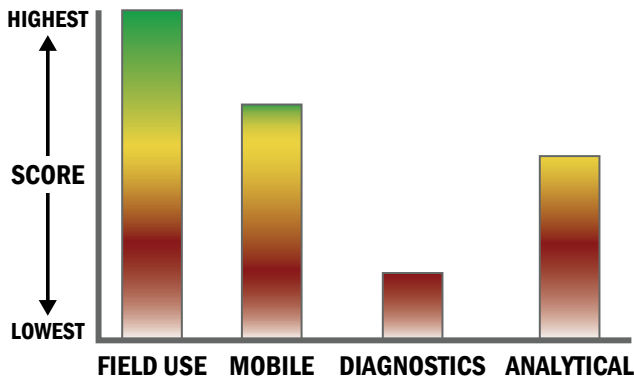
COST

- \$54,000/system
- N/A/analysis



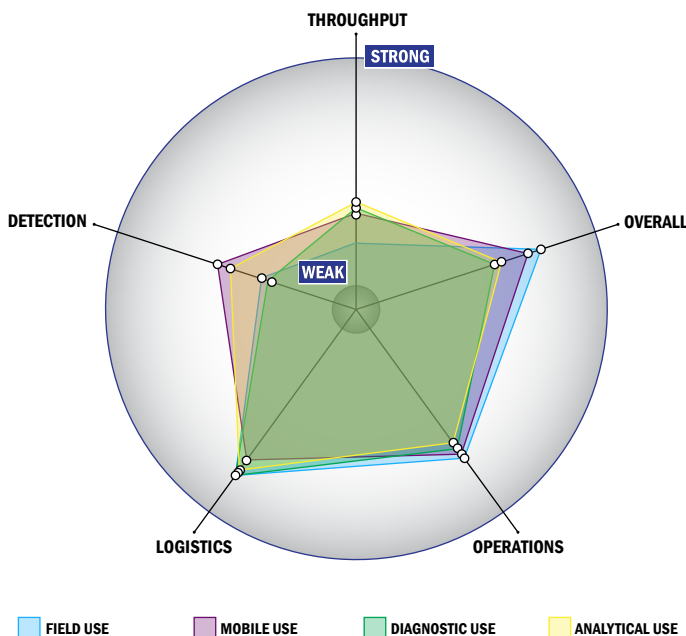
Scoring Analysis

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.



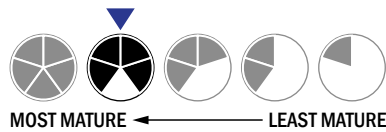
Evaluation Criteria

Throughput:

- Continuous operation with no defined runs
- System is continuous and provides real time analysis with no defined tests/samples
- 10-20 minutes is required for set-up
- Automatic detection

Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a toaster
- Between 1 and 5 kg
- 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
- Performance is not influenced by relative humidity
- Greater than 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is closed and not available for modification
- The system hardware is open but modification requires licensing

Detection:

- Good specificity. System has a consistently low level of false alarms (2-5%)
- Spore lysis not necessary for detection by system
- $< 1 \times 10^{-6} \text{ mg/m}^3$
- 1 ppb – 1 ppm
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent