Bruker Detection Corporation - RAID-XP Combined Chemical & Radiation Detector

GENERAL DESCRIPTION:

The Rapid Alarm and Identification Device-XP (RAID-XP) is an instrument designed for the detection and identification of Chemical Warfare Agents (CWAs) and Toxic Industrial Chemicals (TICs) in the air and has an integrated radiation sensor for dosimetry applications.

The RAID-XP has been designed for detection and monitoring of CWAs and TICs in the air. Detected substances can be identified with their specific substance name and can be quantified by a concentration bar line. To prevent chemical overload, the RAID-XP is equipped with an automatic overload protection system. The radiation sensor is calibrated once before delivery to the customer. After this initial calibration, no further calibration is required.

Chemical detector consumables are rated for 4,000 operating hours.

TECHNICAL DESCRIPTION:

The RAID-XP provides sensors for chemical and radiation detection. The chemical sensor operates on the principle of Ion Mobility Spectrometry (IMS). A state of the art semiconductor technology (pin diodes) based sensor is used for the Gamma radiation detection.

CONTACT INFORMATION

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COST

- $26,500/system
- N/A/analysis

Tier Selection

Final tier assignment is based on overall product score.

Top Tier Second Tier Third Tier Fourth Tier Bottom Tier

RANKINGS

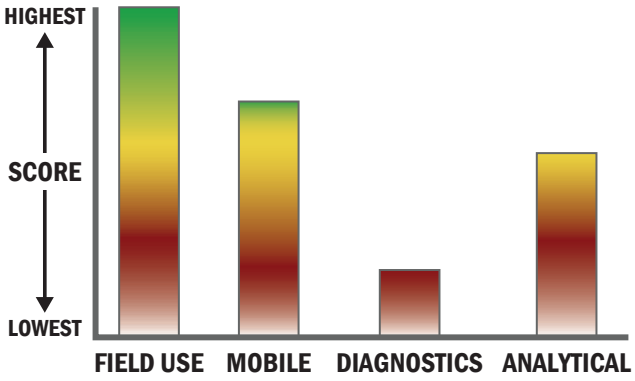
	Biological	Chemical	Radiological
FIELD USE System	N/A	Top Tier	Top Tier
MOBILE Laboratory	N/A	Top Tier	Second Tier
DIAGNOSTIC Laboratory	N/A	Second Tier	Third Tier
ANALYTICAL Laboratory	N/A	Top Tier	Second Tier

Survey Source

Vendor Supplied Information

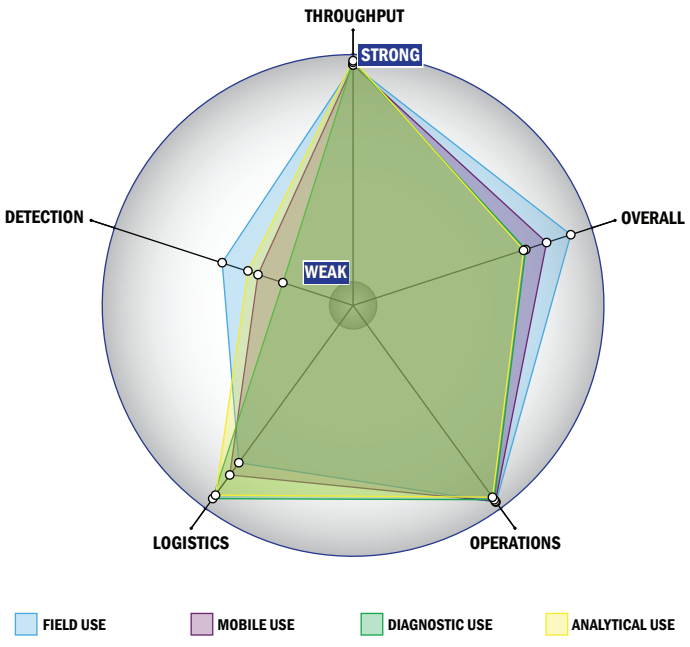
Scoring Analysis

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.



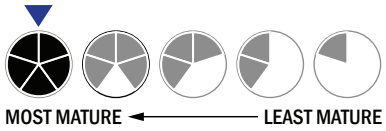
Evaluation Criteria

Throughput:

- Detection is instantaneous
- Continuous operation with no defined runs
- 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
- 0 components
- Less than 5 minutes is required for set-up
- Automatic detection

Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a carry-on luggage suitcase
- Between 5 and 25 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 > 42°C (All temperatures)
- 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 closed and not available for modification

Detection:

- This system does not test liquids
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- $<1x10^{-6}$ mg/m^3
- 1 ppb – 1 ppm
- System currently can identify aerosolized chemical agent
- Only total dose and dose rate
- Down to background level radiation for dose rate
- System is used for area air sampling