

MKS Instruments, Inc. - AIRGARD FTIR Air Monitor



GENERAL DESCRIPTION:

AIRGARD is an FTIR-based air monitoring system which is designed to detect and alarm on ppb levels of 50+ chemical warfare agent and toxic industrial chemicals simultaneously. It does this within 20 seconds of detection.



TECHNICAL DESCRIPTION:

AIRGARD uses a FTIR (Fourier Transform Infrared) spectrometer with a Stirling-cooled mercury cadmium telluride detector using an advanced classical least squares algorithm for extremely sensitive detection (single to low double digit part-per-billion level) of vaporous harmful chemicals.

CONTACT INFORMATION

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 Methuen, MA 01844
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COST

- \$72,500/system
- ~\$0/analysis

Tier Selection

Final tier assignment is based on overall product score.

- Top Tier
- Second Tier
- Third Tier
- ◐ Fourth Tier
- Bottom Tier

RANKINGS

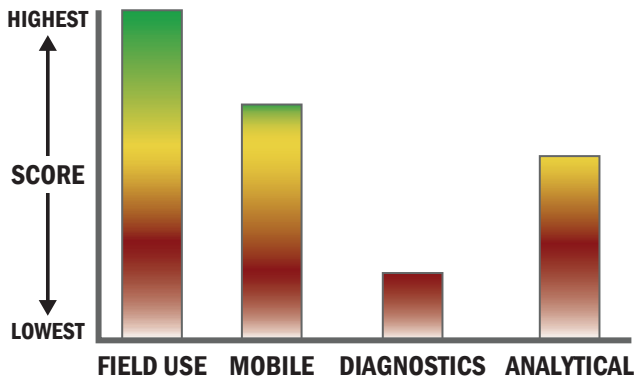
	Biological	Chemical	Radiological
FIELD USE System	N/A	Bottom Tier	N/A
MOBILE Laboratory	N/A	Bottom Tier	N/A
DIAGNOSTIC Laboratory	N/A	Bottom Tier	N/A
ANALYTICAL Laboratory	N/A	Third Tier	N/A

Survey Source

Vendor Supplied Information

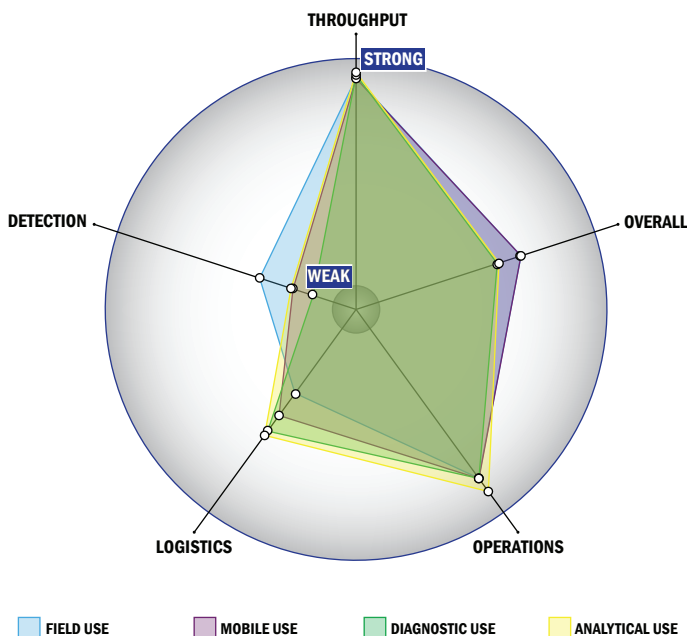
Scoring Analysis

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.



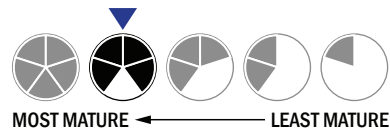
Evaluation Criteria

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
- 5-10 minutes is required for setup
- Automatic detection

Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a carry-on luggage suitcase
- Between 25 and 50 kg
- Wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at room temperature (27 °C)
- Performance is not influenced by relative humidity
- 5-10 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:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- This system does not test liquids
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- > $1 \times 10^{-3} \text{ mg/m}^3$
- System currently can identify aerosolized chemical agent
- Not possible to identify liquid chemical agent