ChemImage Corporation - EAGLE

GENERAL DESCRIPTION:

The EAGLE transportable chemical/ biological threat detection system can rapidly identify organic and inorganic industrial chemicals, reveal the presence of chemical or biological weapons of mass destruction, and identify the presence of a hoax material. With this critical material identification information in hand, HAZMAT teams can make informed and accurate decisions with regard to potential evacuations of large numbers of people and for extensive clean-up/decontamination efforts.

TECHNICAL DESCRIPTION:

The EAGLE is a transportable instrument, designed to combine three powerful spectroscopic techniques: microscopic examination, Raman spectroscopy, and fluorescence spectroscopy for rapid identification of chemical and biological threats. The EAGLE combines fluorescence spectroscopy and microscopic imaging analysis to facilitate wide field Chemical Imaging. The EAGLE first uses fluorescence chemical imaging to determine the presence and location of any small fluorescent particles (which could indicate a biological). The EAGLE then uses Raman spectroscopy to identify the targeted material by using the built in spectral library.

CONTACT INFORMATION

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COST

- $199,000/system
- $0.54/analysis

Tier Selection

Final tier assignment is based on overall product score.

Top Tier | Second Tier | Third Tier | Fourth Tier | Bottom Tier

RANKINGS

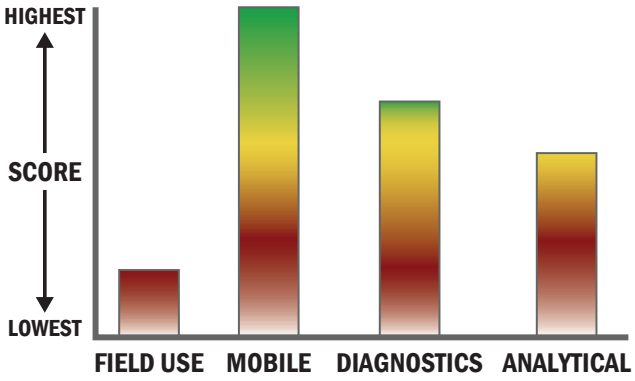
	Biological	Chemical	Radiological
FIELD USE System	Fourth Tier	Bottom Tier	N/A
MOBILE Laboratory	Third Tier	Fourth Tier	N/A
DIAGNOSTIC Laboratory	Third Tier	Third Tier	N/A
ANALYTICAL Laboratory	Third Tier	Third Tier	N/A

Survey Source

Vendor Supplied Information

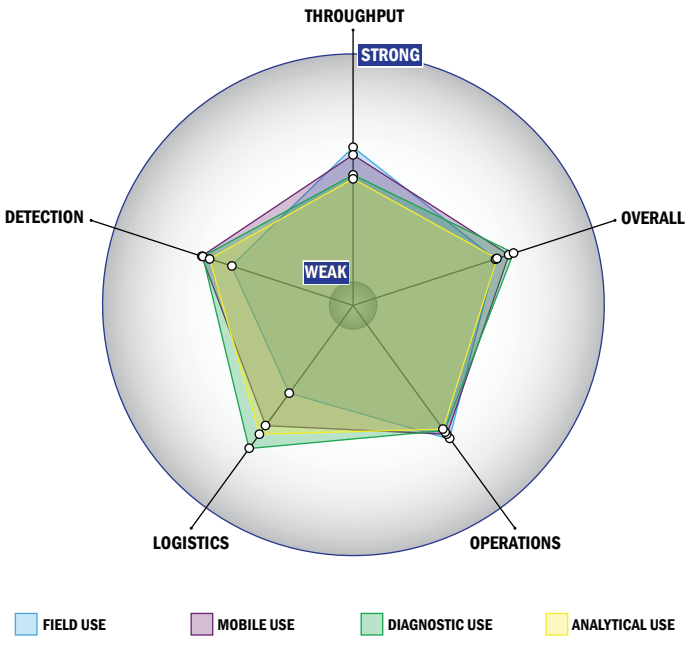
Scoring Analysis

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.



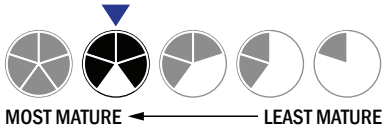
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes for detection
- Multiple samples, multiple tests/sample per run
- 95-32 samples every 2 hours
- The system could be adapted to a semi-automated system with some effort
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 2 components
- 10-20 minutes is required for set-up
- 3-5 steps are required for detection

Logistics:

- A day of training and technical skills are required
- Approximately the size of a home dishwasher
- More than 50 kg
- Wireless and 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
- Greater than 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system could be adapted to a fully autonomous system with significant effort
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Possible the system could receive 510K clearance, no current efforts at this time
- Possible the system could receive FDA approval, no current efforts at this time
- Less than 10 µL
- Good specificity. Consistently low level of false alarms (2-5%)
- 1,000-10,000 CFU per mL
- Spore lysis not necessary for detection by system
- > 1 ppt
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent