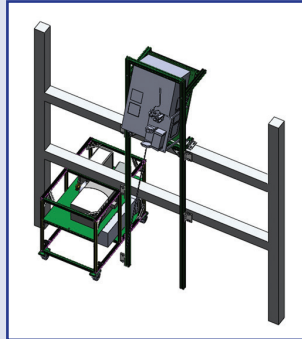# ChemImage Corporation - Standoff UV Raman HSI Chemical Detector

GENERAL DESCRIPTION:

The ChemImage Standoff UV Raman HSI Chemical Detector is designed for the detection of chemical warfare agents. TIC/TIM and other chemical agents of interest on environmental surfaces at a 1 to 3 meter standoff distance.

TECHNICAL DESCRIPTION:

The system provides the detection of chemicals of interest on environmentally-relevant surfaces by the collection of the Raman scattered light excited using an ultraviolet laser beam. The ChemImage System collects the scattered from multiple locations within the excitation beam and performs an analysis and spectral library identification using multi-variate chemometric algorithms. The detected threat material or class of threat material is then transmitted to the operator through the operator display unit.

CONTACT INFORMATION

ChemImage Corporation
7301 Penn Ave
Pittsburgh, PA 15208
POC: Steve Mitts, Threat Detection Business Development Manager
mittss@chemimage.com

COST

- $199,000/system
- N/A/analysis

Tier Selection

Final tier assignment is based on overall product score.

🟢 Top Tier   🟢 Second Tier   ⚪ Third Tier
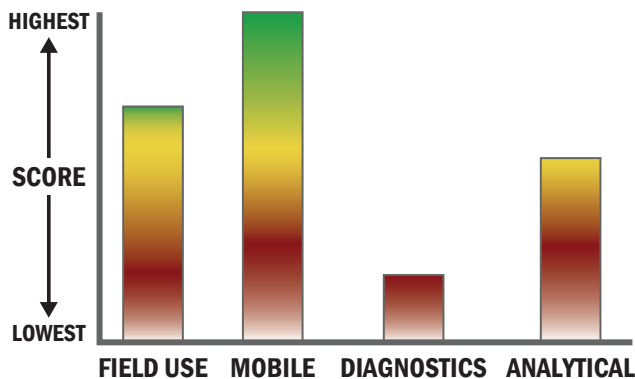🔴 Fourth Tier   🔴 Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	N/A	⬤	N/A
MOBILE Laboratory	N/A	⬤	N/A
DIAGNOSTIC Laboratory	N/A	⬤	N/A
ANALYTICAL Laboratory	N/A	◑	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.
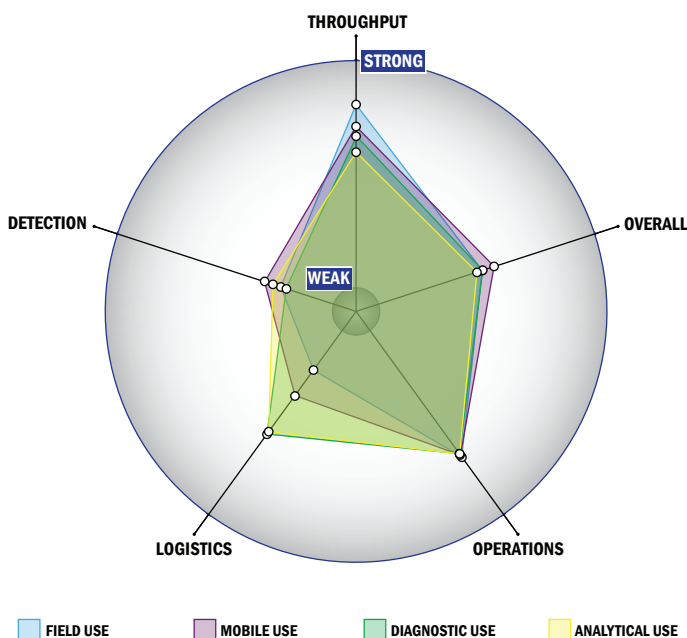

Evaluation Criteria

Throughput:
- 2 minutes or less for detection
- 1 sample, >10 tests/sample per run
- 349-96 samples every 2 hours
- The system could easily be adapted into a fully automated system
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 1 component
- 5-10 minutes is required for set-up
- Automatic detection

Logistics:
- Very brief (minutes-hours) training and minimal technical skills
- Larger than a home dishwasher
- More than 50 kg
- Wired connections are available
- System or device has 110V electrical requirement

MOST MATURE ← LEAST MATURE
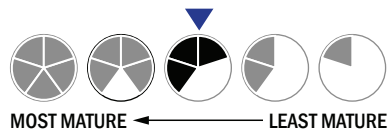
Operations:
- Can be used from 4°C to 41°C
- Components must be stored at room temperature (27°C)
- Performance is not influenced by relative humidity
- Between 1 to 3 years shelf life
- 5-10 years expected life
- Results cannot be viewed in real-time
- The system could be adapted to a fully autonomous system with some effort
- The system software is closed and not available for modification
- The system hardware is open but modification requires licensing

Detection:
- Less than 10 µL
- Good specificity. System has a consistently low level of false alarms (2-5%)
- > 1 ppt
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent