

Smiths Detection - Lightweight Chemical Detector (LCD)-NEXUS



GENERAL DESCRIPTION:

Based on leading IMS technology, the LCD-NEXUS is a portable, compact and rugged chemical warfare agent (CWA) and toxic industrial chemical (TIC) gas and vapour detector. Suitable for fixed or moving platforms, the LCD-NEXUS provides highly sensitive and selective detection, capable of measuring chemical concentrations down to miosis levels with accurate discrimination. The LCD-NEXUS simultaneously samples for traces of CWAs and TICs, to provide real-time warning for threats at or below immediately dangerous to life and health (IDLH) levels. It also provides chemical details including class, type, concentration and dosage as well as CWA identification.



TECHNICAL DESCRIPTION:

LCD Nexus employs dual ion mobility spectrometry technology.

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

CONTACT INFORMATION

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COST

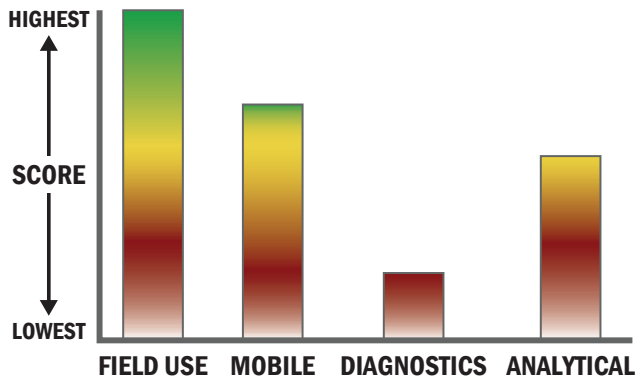
N/A

Survey Source

Vendor Supplied Information

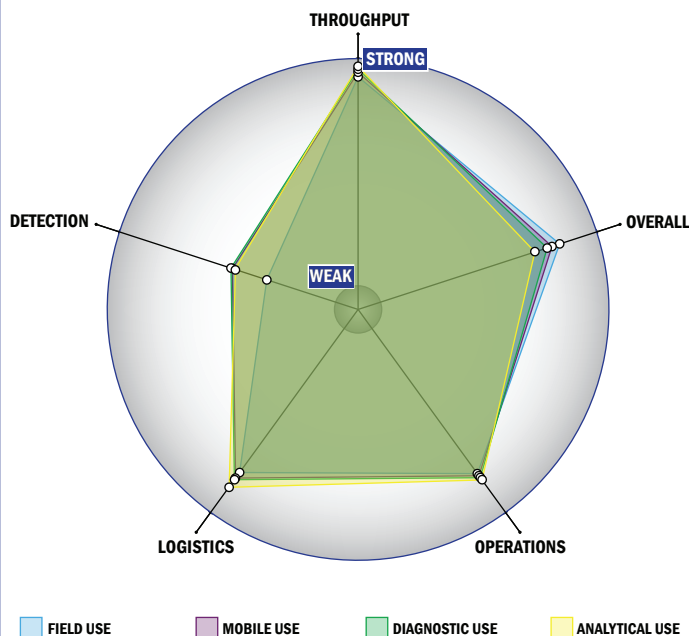
Scoring Analysis

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.



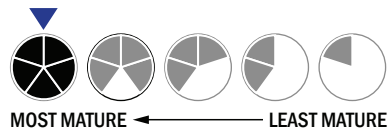
Evaluation Criteria

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
- 2 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 toaster
- Between 1 and 5 kg
- Wired connections are available
- 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 cannot 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:

- 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
- Excellent specificity. System has occasional false alarms under certain conditions ($<2\%$)
- $>1 \times 10^{-3} \text{ mg/m}^3$
- $<1 \text{ ppb}$
- Possible system could identify aerosolized chemical agent
- System currently can identify liquid chemical agent