Bruker Detection Corporation - IPDS-LR Shipboard Chemical Detection System
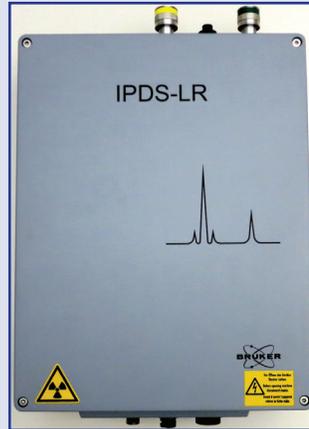
GENERAL DESCRIPTION:

The IPDS-LR Shipboard Chemical Detection System was specifically designed for chemical detection of chemical warfare agent vapors onboard US Navy surface ships. The system comprises two detector units, two sampling systems, a remote display unit, a control display unit, and shock mounts for all units.

TECHNICAL DESCRIPTION:

The IPDS-LR uses ion mobility spectrometry with spectral matching software to locate, classify, and identify chemical warfare agents on board US Navy surface ships. The detector units have special interference rejection built into the detection algorithm and meets specifications for false alarm thresholds with sensitivity requirements. The sampling system includes specially designed sampling lines, filters, and bulkhead adapters to operate in marine environments.

CONTACT INFORMATION

Bruker Detection Corporation
40 Manning Road
Billerica, MA 01821

COST

- $120,000/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

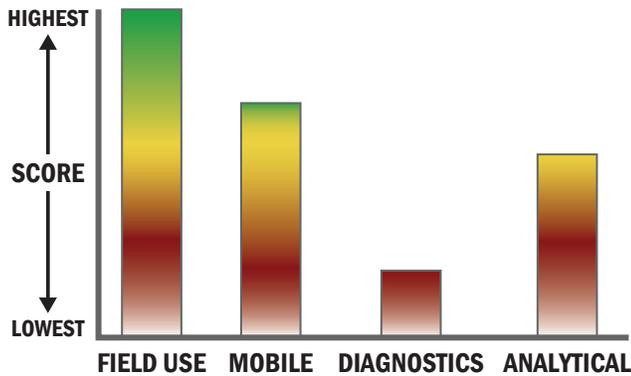|	Biological	Chemical	Radiological
FIELD USE System	N/A	◒	N/A
MOBILE Laboratory	N/A	◒	N/A
DIAGNOSTIC Laboratory	N/A	◓	N/A
ANALYTICAL Laboratory	N/A	○	N/A

## 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.


FIELD USE   MOBILE USE   DIAGNOSTIC USE   ANALYTICAL USE
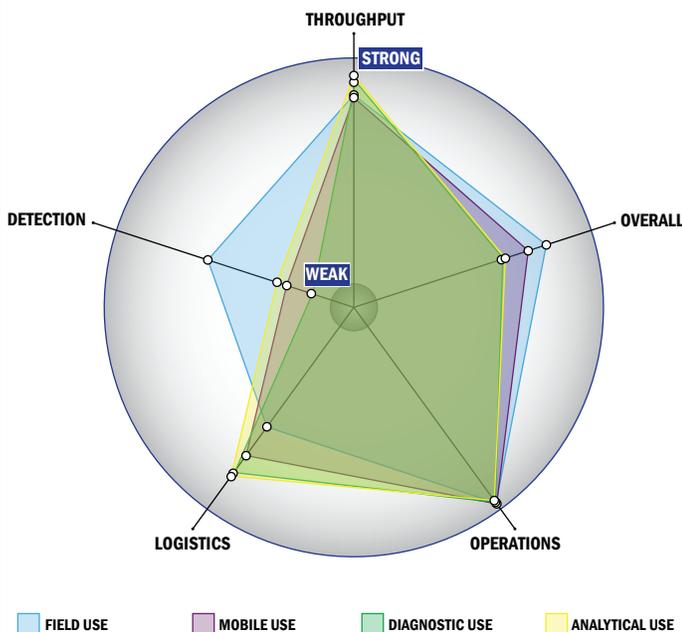
Evaluation Criteria

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
- Greater than 20 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
- Wired connections are available
- System or device has 110V electrical requirement

MOST MATURE ◄—— LEAST MATURE
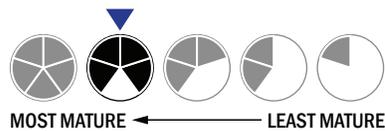
Operations:
- Can be used from < -21°C to > 42°C (All temperatures)
- Performance is not influenced by relative humidity
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:
- This system does not test liquids
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- < 1×10^{-6} mg/m^3