Smiths Detection - SmartBio Sensor (SBS)

GENERAL DESCRIPTION:

SBS is a portable and ruggedized real-time bio-aerosol detector that detects and classifies bacteria, bacterial spores, virus and bio-toxins, including unanticipated or genetically modified organisms while maintaining little response to common environmental interferents. It furthermore collects particles on the sensor coupon which can be eluted and identified using PCR and toxin antibody screening technologies such as Bio-Seeq PLUS and Prime Alert Toxin Screens.

TECHNICAL DESCRIPTION:

SBS continuously samples the air and captures particles based on inertial impaction. SBS is comprised of 8 sensing films that interact with the target organism resulting in a change in fluorescence signal from those sensing films. Pattern recognition is used to detect and classify compounds, resulting in a user selectable visual and audio signal.

CONTACT INFORMATION

Smiths Detection
21 Commerce Dr.
Danbury, CT 06810
www.smithsdetection.com

COST
- $29,500/system
- $25/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	Second Tier	N/A	N/A
MOBILE Laboratory	Third Tier	N/A	N/A
DIAGNOSTIC Laboratory	Fourth Tier	N/A	N/A
ANALYTICAL Laboratory	Third Tier	N/A	N/A

Survey Source
Vendor and Internet Supplied Information

Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.

HIGHEST

SCORE

LOWEST

FIELD USE   MOBILE   DIAGNOSTICS   ANALYTICAL
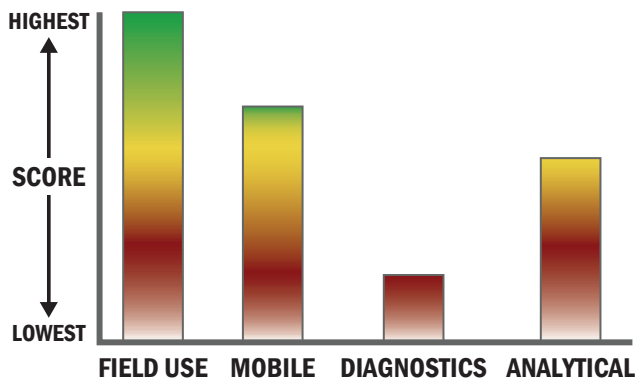
Impact Chart

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.

THROUGHPUT
STRONG
DETECTION
WEAK
OVERALL
LOGISTICS
OPERATIONS

FIELD USE   MOBILE USE   DIAGNOSTIC USE   ANALYTICAL USE
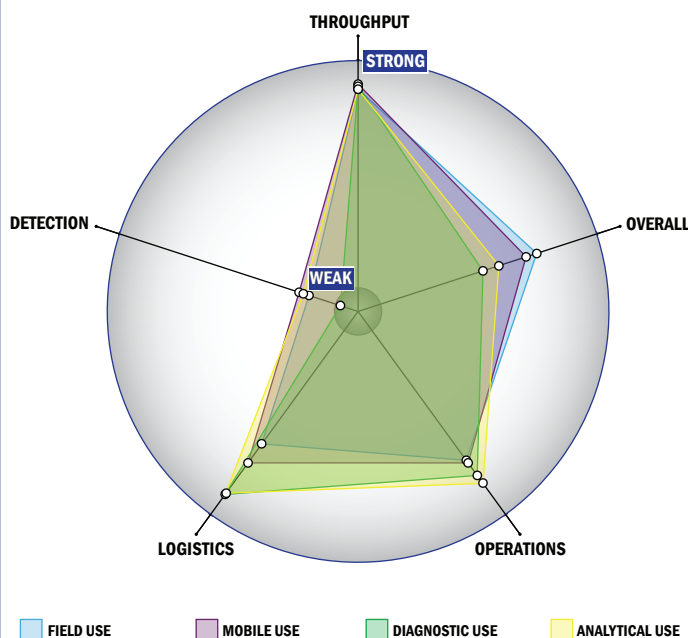
Evaluation Criteria

Throughput:
- 2 minutes or less for detection
- Multiple samples, single tests/sample per run
- System is continuous and provides real time analysis with no defined tests/samples
- The system or device is currently semi-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
- 1-2 steps are required for 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 220V electrical requirement
- 4-8 hours battery life

MOST MATURE ← LEAST MATURE
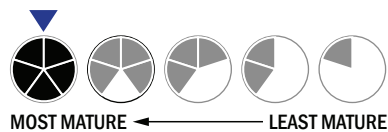
Operations:
- Can be used from 4°C to 41°C
- Components must be stored at 4°C
- Device or system has peak performance at normal relative humidity conditions
- Between 6 months and 1 year shelf life
- 5-10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:
- This system does not test liquids
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- Spore lysis not necessary for detection by system