

Biral - VeroTect



GENERAL DESCRIPTION:

The Biral VeroTect real time biodetection instrument is designed to give the earliest possible warning of the potential presence of biological warfare agents in the atmosphere. It is a generic detector that performs all measurements on the particles in airborne suspension. It uses the physical characteristics of particles together with their intrinsic fluorescence to differentiate biological particles that represent a potential threat from the wide range of natural and pollutant particles that are always present in the atmosphere. It requires no reagents or consumables.



The instrument has been designed only for use in military and security environments. It has passed all the required UK MOD rough handling tests and has been environmentally certified for operation between -30 °C to +50 °C. It can operate entirely autonomously giving visual and/or audible warning or it can be operated remotely from a computer system. In the latter case all indicator lights on the unit may be extinguished. The system is configured so that it can operate on a stand-alone basis as a single point detector or it can be part of an array of networked sensors delivering area detection.

For stand-alone operation it is supplied with intelligent Vero Warn software. If required, this can be used to trigger aerosol collectors, providing samples for identification analysis systems.

TECHNICAL DESCRIPTION:

The Biral VeroTect measures the size and shape of all particles in the sampled aerosol. It also measures the intrinsic fluorescence of a small volume of the aerosol. The particle size and shape are derived from, respectively, the integrated intensity and the spatial distribution of the scattered light pattern. Intrinsic fluorescence is excited by a flash lamp with the output filtered to give a narrow band pulse of UV light centered at a wavelength of 280nm. The fluorescence generated is split into UV and visible bands and the intensity of each is measured.

The data from the aerosol measurements is passed to the VeroWarn software in which a suite of intelligent algorithms assess the probability that a biological challenge has been detected. The analysis algorithms can be adjusted to vary the response of the system for a range of operational requirements. The company always aims to work with the customer to ensure that the analysis system is optimized for their specific requirements.

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 | | | |
| MOBILE Laboratory | | | |
| DIAGNOSTIC Laboratory | | | |
| ANALYTICAL Laboratory | | | |

Survey Source

Vendor Supplied Information

CONTACT INFORMATION

Biral
 PO Box2
 Portishead, Bristol, BS20 7JB

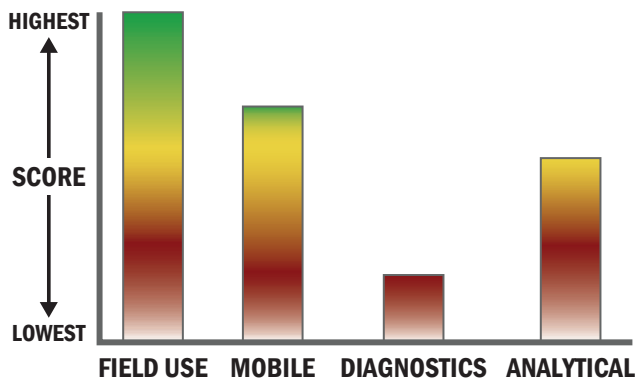
COST

- \$100,000/system
- \$0/analysis



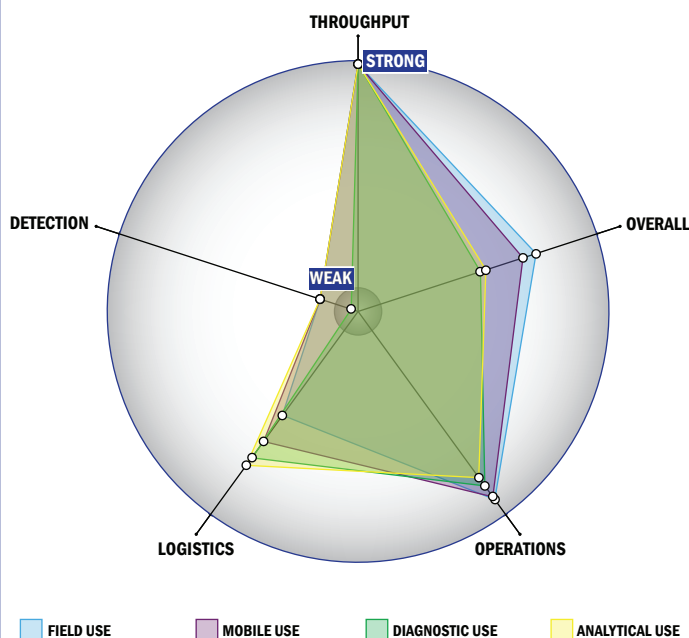
Scoring Analysis

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.



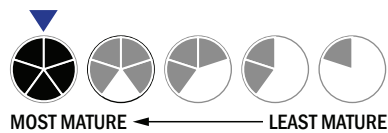
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- 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
- 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 carry-on luggage suitcase
- Between 25 and 50 kg
- Wireless and wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from -21°C to 42°C (All temperatures)
- Performance is not influenced by relative humidity
- 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:

- Possible the system could receive 510K clearance, no current efforts at this time
- This system does not test liquids
- Good specificity. System has a consistently low level of false alarms (2-5%)
- Spore lysis not necessary for detection by system