

Duvas Technologies Ltd. - D1000



GENERAL DESCRIPTION:

D1000 is a man portable chemical sensor that can be rapidly mounted on to multiple platforms and/or networked. It allows first responders and military users to rapidly survey areas to identify and quantify industrial chemicals, warfare agents and novel threats.



It is optimized for use in the field. Unlike chromatography there is no waiting for results as the instrument provides continuous output of concentrations in real time. The system's algorithm utilizes a proven method for analyzing gases called Differential Optical Absorption Spectroscopy (DOAS); It uses established optical technique proven over many years for the measurement of range of gases.

TECHNICAL DESCRIPTION:

The system is a portable, multi-species gaseous detection unit based on differential ultraviolet absorption spectroscopy in combination with an advanced signal processing routine to identify species. The species enter the system through an air inlet in to a cell to allow multiple passes through the air sample. UV light spanning a broad range of wavelengths, traverses a heavily folded optical path (White cell) to allow for a long interaction length in a compact form factor. Gases within the path absorb the UV light; this absorption is registered in real time by the detector. Each constituent gas absorbs a unique fingerprint; the robust algorithm dynamically unmerges overlapping signals from multiple gases, to analyze each component simultaneously. This high throughput is advantageous for analyzing many samples in a short period of time or the ability to sweep vast areas in a short amount of time.

The system features parts per billion simultaneous detection and qualification capability. It measures several gases directly and with much faster time resolution than conventional methods. This enables it to be used whilst on the move on any platform- either on a vehicle, bicycle, on foot or deployed in a fixed position.

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

Duvas Technologies Ltd
 Suite 4, 1st Floor, QMB Bioenterprises
 Innovation Centre
 42 New Road
 London E1 2AX
 +44(0)207 148 0344
 www.duvastechnologies.com

COST

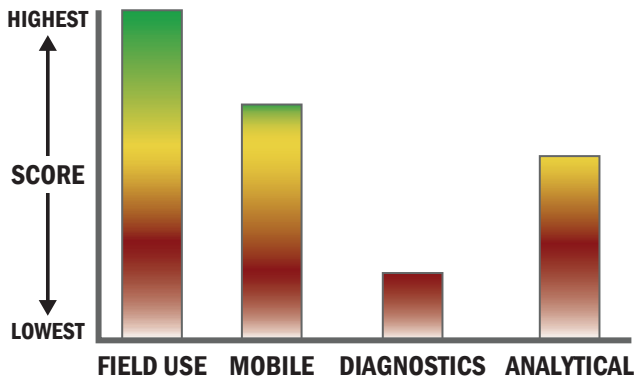
- \$50,000/system
- N/A/analysis

Survey Source

Vendor Supplied Information

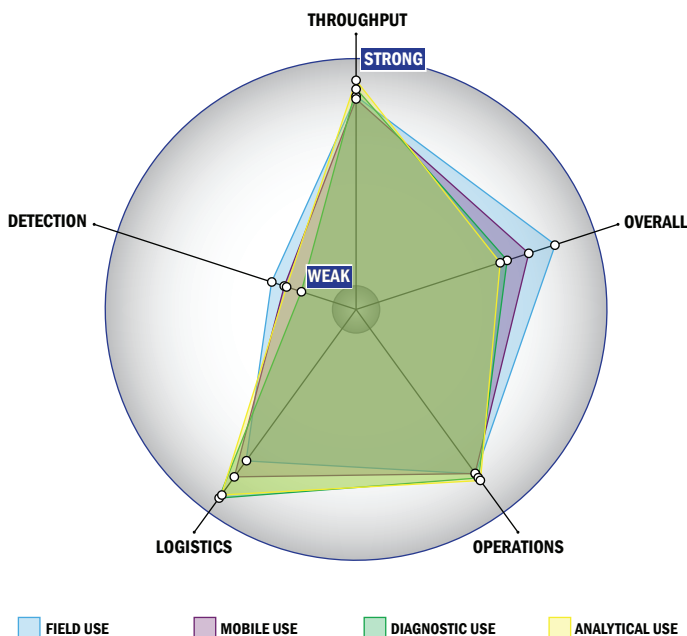
Scoring Analysis

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.



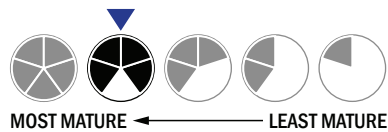
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- 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
- Wireless and wired connections are available
- System or device uses batteries
- 4-8 hours battery life



Operations:

- Can be used from 4 °C to 37 °C
- 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:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- This system does not test liquids
- 1×10^{-4} - 1×10^{-3} mg/m³
- Possible system could be adapted to identify aerosolized chemical agent
- Possible system could be adapted to identify liquid chemical agent

