

MD Microscopes International - Home Healthcare Diagnostics



GENERAL DESCRIPTION:

A patent pending technology will enable home healthcare diagnostics for everyone, reducing primary healthcare costs and increasing healthcare availability. Rural communities, the elderly, the military, veterans, and families will have the conveyance of low cost diagnostics in their home. Through the convergence of old and new technologies, diagnostic tests can now be run anywhere in the world, in a variety of environments, without any skill. For the first time ever, the full array of morphological (e.g., cell count, hematology, white cell differential, bacteria, fluorescent markers, tissue sample, etc.) and diagnostic tests (e.g., immunological, protein, hormonal, chemical, genetic, etc.) on the same drop of blood (or body fluid) at wavelength limited resolution and fully automated, can be run by a child on a USB plug-and-play system. The system is mobile, can be USB or battery powered, is the size of an external hard drive and has an overnight FedEx shipping weight of 3.5 lbs. The system receives a disposable carrier having a demographically or geographically derived matrix of 5-100 tests – demographically derived may focus on age, combat situations, exposure expectations; geographically derived may focus on a combination of demographics along with the unique issues associated with the location. A sample is added, no pre-processing, and placed in the unit for automated analysis. In the US it is expected to reduce primary health care costs by at least 50%; and to be sold in chain stores (e.g., Wal-Mart, Walgreens, etc.).



TECHNICAL DESCRIPTION:

The Home Healthcare Diagnostics provides fully automated wavelength limit analysis, bright field and fluorescence, in a mobile USB plug-and-play device. This fundamental advance in technology is applicable across a multitude of applications. In one application, a carrier is inserted without pre-processing for healthcare diagnostics, chemical assays, immunoassays and biological assessments. Other uses include all fully automated microscopy needs and applications; genetic, microbiology, bacteriology, virology, etc. The full automation enables the data to be transmitted to experts anywhere in the world and remote from the test site.

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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Survey Source

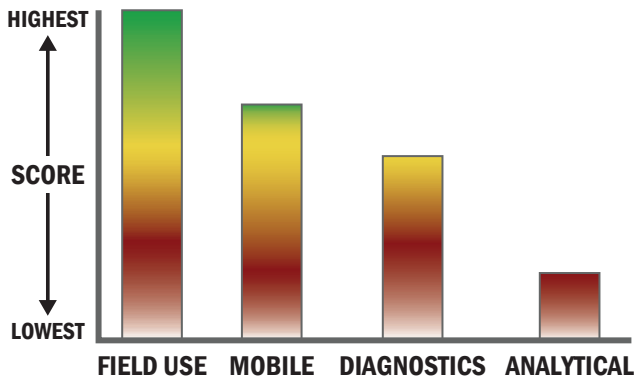
Vendor Supplied Information

COST

- \$400-\$10,000/system
- <\$20/analysis

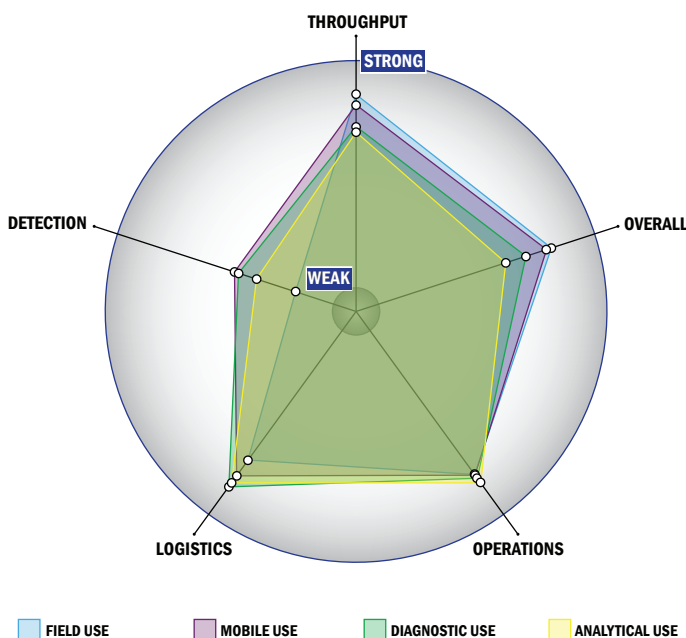
Scoring Analysis

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.



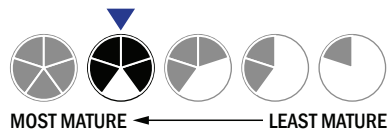
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- Multiple samples, multiple tests/sample per run
- The system could easily be adapted into a fully automated system
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 1 component
- No set-up of the system 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 toaster
- Between 1 and 5 kg
- Satellite, wireless and wired connections are available
- System or device uses batteries
- 1-2 hours battery life



Operations:

- Can be used from $< -21^{\circ}\text{C}$ to $> 42^{\circ}\text{C}$ (All temperatures)
- Components must be stored at room temperature (27°C)
- Performance is not influenced by relative humidity
- Results can be viewed in real-time
- The system could easily be adapted into a fully autonomous system
- The system software is open and available for modification
- The system hardware is open and 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
- Less than $50\ \mu\text{L}$
- Add on capability that is full or semi-automated for spore lysis

