

Microscopes International - μScope MX - POC Diagnostics



GENERAL DESCRIPTION:

Microscopes International (MI) builds portable digital slide microscopes for brightfield and fluorescence microscopy. In a transportable form factor these USB attachable devices are small, lightweight and easy to use. The μScope MX is small enough for field work and powerful enough for laboratory use. When used with Microscopes International multi-test slides and diagnostic software the μScope MX can automatically perform a large variety of biological tests with a single sample. Digital automation enables remote control and diagnostics to be performed by experts anywhere in the world. The μScope MX is USB connected to a computing device (PC, Laptop, Tablet) and can be used to automate any test that a microscope can detect. Software API's can be used to attach the μScope MX to existing biological detection software or to create specialized tests.



TECHNICAL DESCRIPTION:

Microscopes International has created the first portable low cost wavelength limited Digital Microscope (μScope MX). A 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.) can be performed on the same drop of blood (or body fluid) at wavelength limited resolution and is fully automated. The system is mobile, can be powered by USB, battery or wall plug, is the size of an external hard drive and has an overnight FedEx shipping weight of less than 4 lbs.

CONTACT INFORMATION

Microscopes International
 555 Republic Drive, Suite 105
 Plano, TX 75074-5469
 POC: Scott Byker
 888-726-7350 x712
 scott.byker@uscopes.com
 www.microscopesinternational.com

COST

- \$12,500/system
- \$20/analysis

Tier Selection

Final tier assignment is based on overall product score.

- Top Tier
- Second Tier
- Third Tier
- Fourth Tier
- Bottom Tier

RANKINGS

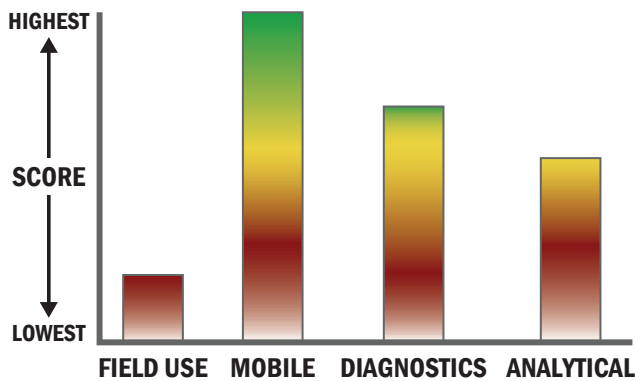
	Biological	Chemical	Radiological
FIELD USE System	●	○ N/A	○ N/A
MOBILE Laboratory	●	○ N/A	○ N/A
DIAGNOSTIC Laboratory	●	○ N/A	○ N/A
ANALYTICAL Laboratory	●	○ N/A	○ N/A

Survey Source

Vendor and Internet Supplied Information

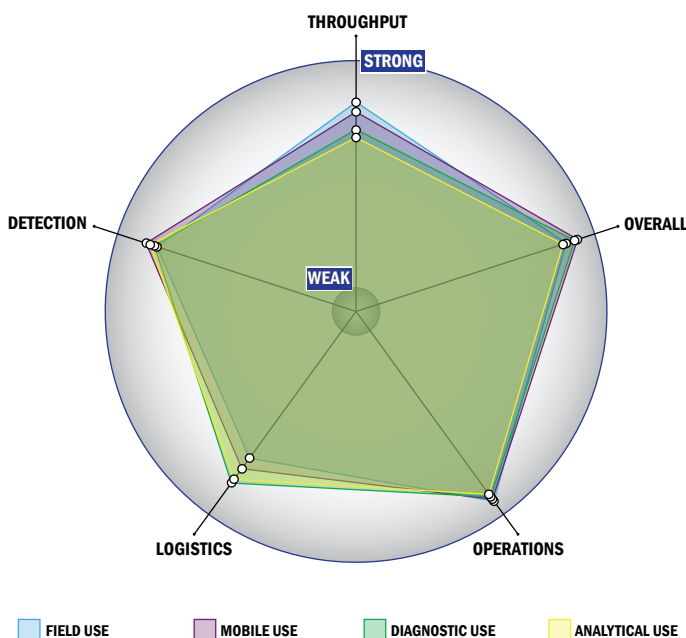
Scoring Analysis

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.



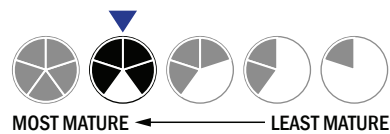
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- Multiple samples, multiple tests/sample per run
- Less than 32 samples every 2 hours
- 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
- 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 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)
- Performance is not influenced by relative humidity
- Between 1 to 3 years shelf life
- 3-5 years expected life
- Results can be viewed in real-time
- The system could easily be adapted into a fully autonomous system
- The system software is open but modification requires licensing
- The system hardware is open but modification requires licensing

Detection:

- Possible the system could receive 510K clearance, no current efforts at this time
- System currently has FDA approval
- Less than 10 μL
- 1-100 CFU per mL
- 1-100 PFU per mL
- 1-10 ng per mL
- Spore lysis not necessary for detection by system