

# Illumina, Inc. - MiSeq System



## GENERAL DESCRIPTION:

MiSeq is a next generation sequencer design for individual research labs. Key characteristics include rapid turnaround times, a simple workflow from sample prep to data analysis, high accuracy and output in excess of 1Gb.



## TECHNICAL DESCRIPTION:

MiSeq leverages standard molecular biology techniques to yield adapter ligated products that are then loaded onto the MiSeq system. There, the fragments are clonally amplified by bridge amplification and then sequenced using a sequencing by synthesis reversible terminator chemistry. Each based is imaged, processed and reported out as a variant call all on the same instrument.

## CONTACT INFORMATION

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## COST

- \$125,000/system
- \$525/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
<b>FIELD USE System</b>	● Bottom Tier	○ N/A	○ N/A
<b>MOBILE Laboratory</b>	● Bottom Tier	○ N/A	○ N/A
<b>DIAGNOSTIC Laboratory</b>	◐ Fourth Tier	○ N/A	○ N/A
<b>ANALYTICAL Laboratory</b>	◐ Fourth Tier	○ N/A	○ N/A

## Notes

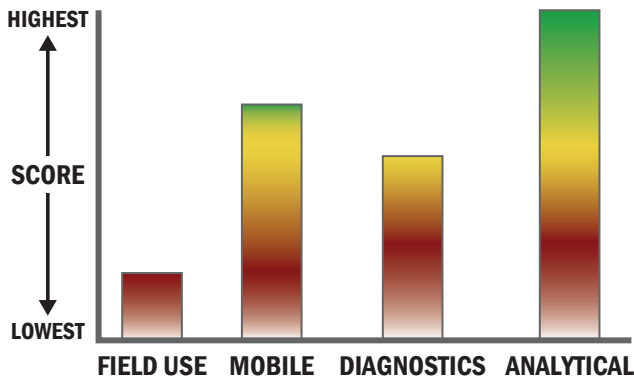
In use at DoD regional laboratories under the Global Biosurveillance Technologies Initiative (GBTI).

## Survey Source

Vendor and Internet Supplied Information

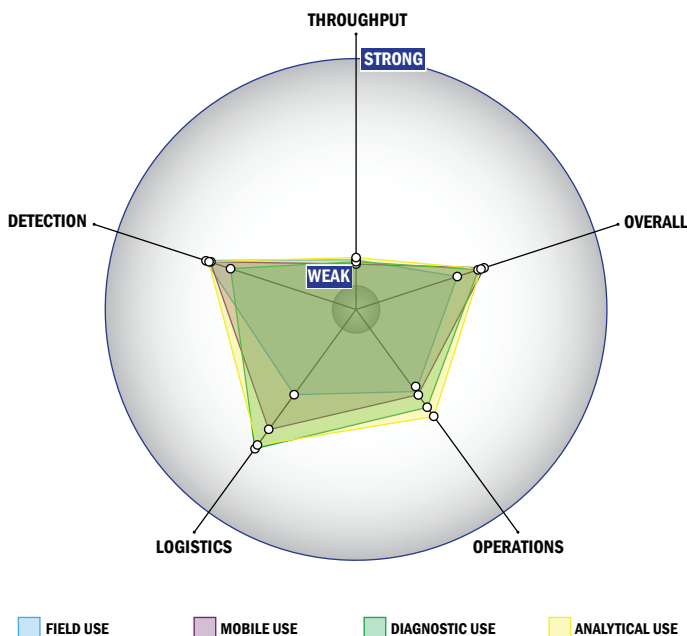
## Scoring Analysis

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

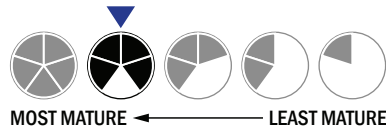


### Throughput:

- Between 60 minutes and 8 hours for detection
- Multiple samples, multiple tests/sample per run
- Less than 32 samples every 2 hours
- The system could be adapted to a semi-automated system with some effort
- Device or system is intended for multiple detection assays
- 2 solutions, buffer, eluents, and/or reagents
- 5 or more components
- 9-12 steps are required for detection

### Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a carry-on luggage suitcase
- More than 50 kg
- Wired connections are available
- System or device has 110V electrical requirement



### Operations:

- Can be used from 25 °C to 37 °C
- Components must be frozen (-20 °C)
- Between 6 months and 1 year shelf life
- 3-5 years expected life
- Results can be viewed in real-time
- The system is not capable of autonomy
- The system software is open and 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%)
- 100-1,000 CFU per mL
- 100-1,000 PFU per mL
- Manual kit not integrated with the system handles spore lysis