

Agilent Technologies, Inc. - Cary Eclipse Fluorescence Spectrophotometer



GENERAL DESCRIPTION:

The Cary Eclipse Spectrophotometer uses a Xenon flash lamp for superior sensitivity, high signal-to-noise, and fast kinetics. It measures the emission of light from samples in four modes. Using Xenon lamp technology, it captures a data point every 12.5 ms and scans at 24,000 nm/min without peak shifts. The Cary Eclipse is the only spectrophotometer with room light immunity. With an optional microplate reader, it offers full wavelength scanning of 384 samples. A BioMelt package provides the capability of thermal denaturation studies.



TECHNICAL DESCRIPTION:

Four collection modes: fluorescence, phosphorescence, chemi/bio-luminescence, and time resolved phosphorescence.

Molecular software: application focused software for novice and expert users

High Sensitivity: red-sensitive photomultiplier tube detectors extends to 900 nm

Small volume samples: measures low-volume picomolar fluorescein concentrations (<0.5mL) and large, odd-sized samples.

Fast kinetics: scans at 24,000 nm/min without peak shifts using Xenon flash lamp technology and up to 80 points per second in steady-state fluorescence mode.

Fast reactions of 1-2 seconds can be measured using the rapid mix accessory or the stopped flow accessory.

Room light immunity: the instrument operates with the front and top panels removed for easy access to sample and fast installation of large accessories.

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
MOBILE Laboratory			N/A
DIAGNOSTIC Laboratory			N/A
ANALYTICAL Laboratory			N/A

CONTACT INFORMATION

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COST

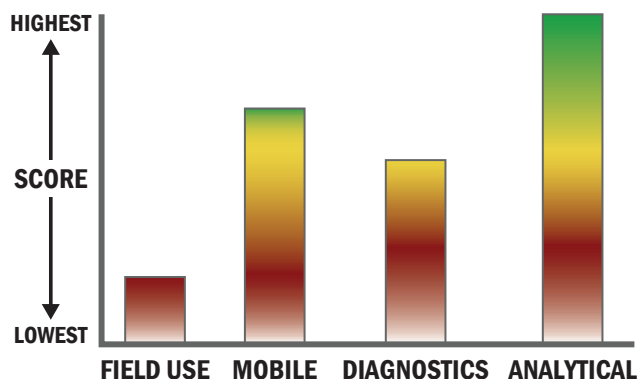
- \$30,000/system
- \$1.00-\$100,000/analysis

Survey Source

Vendor Supplied Information

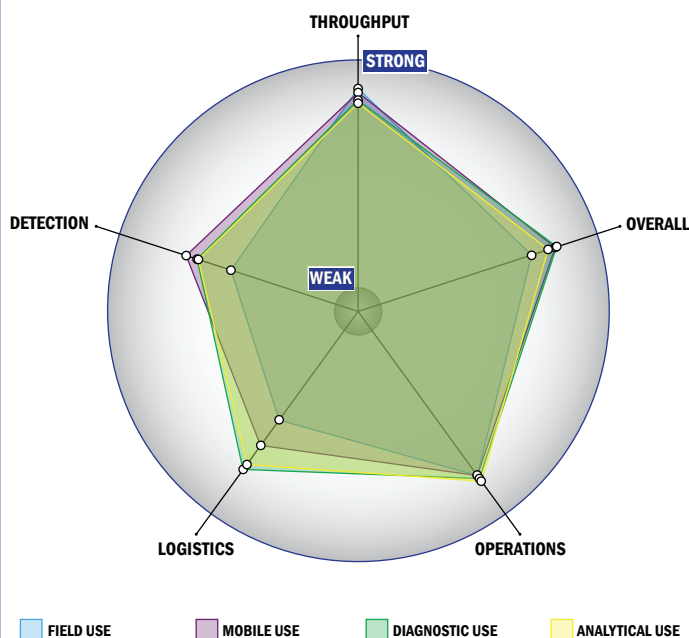
Scoring Analysis

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.



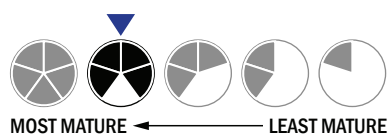
Evaluation Criteria

Throughput:

- Detection is instantaneous
- Continuous operation with no defined runs
- System is continuous and provides real time analysis with no defined tests/samples
- The system could be adapted to a fully automated system with some effort
- 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
- 3-5 steps are required for 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
- Wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at room temperature (27 °C)
- Device or system has peak performance at normal relative humidity conditions
- Greater than 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system could be adapted to a fully autonomous system with some effort
- 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
- Possible the system could receive FDA approval, no current efforts at this time
- Less than 10 µL
- Superior specificity. False alarm rate approaching zero (~0%)
- > 1x10⁻³ mg/m³
- 1 ppm–100 ppm
- System can currently identify aerosolized chemical agent
- System can currently identify liquid chemical agent