

Agilent Technologies, Inc. - Agilent 6200 Series Time of Flight Mass Spectrometer



GENERAL DESCRIPTION:

The 6200 series instruments are time of flight mass spectrometers designed to be coupled to liquid chromatography systems for sample separation and introduction. They are compatible with electrospray ionization (ESI), atmospheric pressure chemical ionization (APCI), and atmospheric pressure photoionization (APPI) for the introduction and ionization of



liquid samples. Additionally, the 6200 series instruments can be combined with desorption electrospray ionization (DESI) and/or direct analysis in real time (DART) ionization sources for the introduction and ionization of solids. The information obtained from the 6200 series instruments can be used to identify and unknown compound and/or determine how much of a particular compound is present in a sample. The 6200 series achieve industry-leading TOF mass resolution and mass accuracy without sacrificing data acquisition speed, dynamic range, mass range, or sensitivity. They provide speed needed for ultra-high pressure LC (UHPLC) separations, plus performance needed for analysis of complex, real-world samples.

- Data acquisition rates up to 20 spectra per second
- Up to five orders in-spectrum dynamic range reveals trace-level targets in presence of vastly more abundant compounds.
- Exceptional sensitivity finds and identifies compounds at extremely low concentrations.

TECHNICAL DESCRIPTION:

The 6200 series is comprised of 2 different models of TOF mass spectrometer. They each feature 2-3 ppm mass accuracy and 20,000 FWHM resolution suitable all your accurate mass analytical challenges. Both 6200 series QTOF instruments incorporate the following technology:

- Proprietary orthogonal spray ion source maximizes ion generation and reduces noise.
- Proprietary INVAR flight tube sealed in vacuum-insulated shell eliminates thermal mass drift due to temperature changes, maintaining excellent mass accuracy, 24/7.
- Analog-to-digital (ADC) detection records multiple ion events, allowing very accurate mass assignments over a wide mass range and dynamic range of concentrations.
- 4GHz ADC electronics enable high sampling rate (32 Gbit/s), improving resolution, mass accuracy, and sensitivity for low-abundance samples.

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	● Bottom Tier	● Bottom Tier	○ N/A
MOBILE Laboratory	● Bottom Tier	● Bottom Tier	○ N/A
DIAGNOSTIC Laboratory	○ Third Tier	○ Third Tier	○ N/A
ANALYTICAL Laboratory	◐ Fourth Tier	◐ Fourth Tier	○ N/A

Survey Source

Vendor Supplied Information

CONTACT INFORMATION

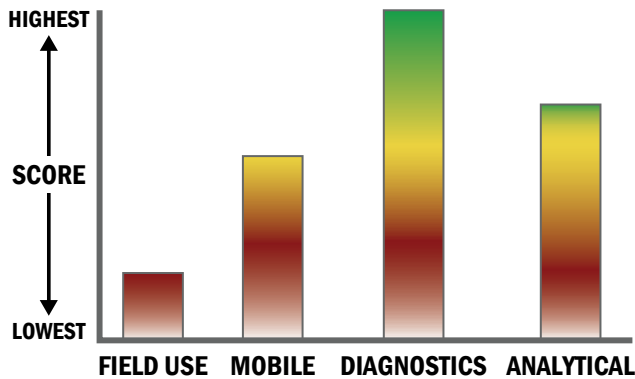
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COST

- \$175,000-\$225,000/system
- N/A/analysis

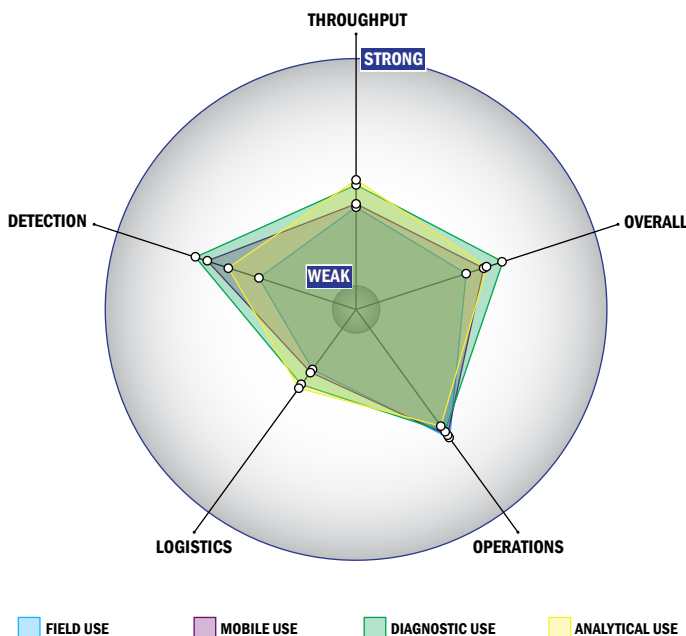
Scoring Analysis

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.



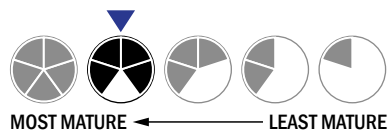
Evaluation Criteria

Throughput:

- Between 15 and 30 minutes for detection
- Multiple samples, multiple tests/sample per run
- 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
- Greater than 20 minutes is required is required for setup
- Almost instantaneous detection

Logistics:

- More than a day of training and significant technical skills are required
- Approximately the size of a home dishwasher
- More than 50 kg
- Wired connections are available
- System or device has 220V electrical requirement



Operations:

- Can be used from 4 °C to 37 °C
- Components must be stored at room temperature (27 °C)
- Device or system has peak performance at normal relative humidity conditions
- 5-10 years expected life
- Results can be viewed in real-time
- The system is not capable of autonomy
- 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
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent