Agilent Technologies, Inc. - Agilent 5975T LTM GC/MSD

GENERAL DESCRIPTION:

The Agilent 5975T LTM GC/MSD is the first commercial transportable GC/MS system that delivers laboratory quality analysis. The 5975T takes advantage of Agilent's proprietary LTM technology. These column modules provide rapid heating and cooling of the column for higher throughput. The LTM GC system requires less power compared to a conventional GC, reducing the required power supply from the mobile lab. The Agilent fifth generation EPC and digital circuitry ensures retention time precision, and allows easy operation, which makes it ideal for onsite, fast analysis.

The 5975T is seamlessly integrated with LTM GC technology to be a fast, high performance, high reliability, transportable GC/MSD system. The Agilent 5975T LTM GC/MSD with the Triple-Axis HED EM Detector provides the flexibility, capabilities, and performance demanded by modern applications in all industries. The mass selective detector (MSD) is configured for electron ionization. Injection systems can range from an injector tower to a flexible CTC-PAL auto-sampling system. Other sampling devices are available from Agilent and third parties.

TECHNICAL DESCRIPTION:

The Agilent 5975T LTM GC/MSD System uses Low Thermal Mass Gas Chromatography and Single Quadrupole Mass Spectrometry Detection to perform both qualitative and quantitative analysis. Technology features include:

- Agilent proprietary LTM technology
- SemiQuant for estimating concentrations of non-calibrated compounds
- Inert electron ionization (EI) source for better performance on active compounds
- Higher sensitivity with the Triple-Axis HED-EM Detector
- Mass range up to 1050 u
- High performance SIM/scan with automated SIM setup
- Mass stability with better than 0.10 u over 48 hours
- Performance electronics for 12,500 u/s scan speed (8,000 u/s write-to-disk)
- Proprietary hyperbolic gold coated quadrupole
- Heatable quadrupole to 200°C
- Easy access to full ion optics
- Compatibility with many third party sampling devices

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	Fourth Tier	N/A
DIAGNOSTIC Laboratory	Fourth Tier	Second Tier	N/A
ANALYTICAL Laboratory	Third Tier	Second Tier	N/A

Survey Source

Vendor Supplied Information

CONTACT INFORMATION

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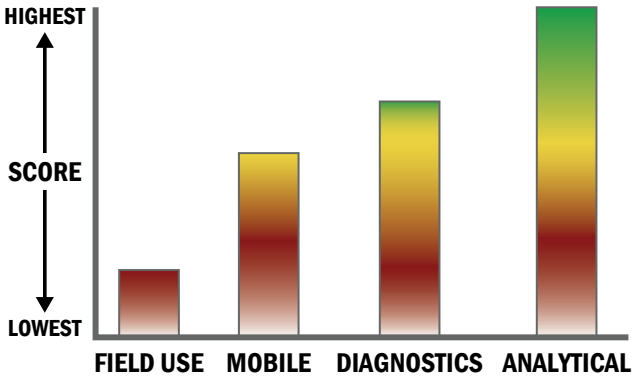
COST

- $95,000-$125,000/system
- N/A/analysis

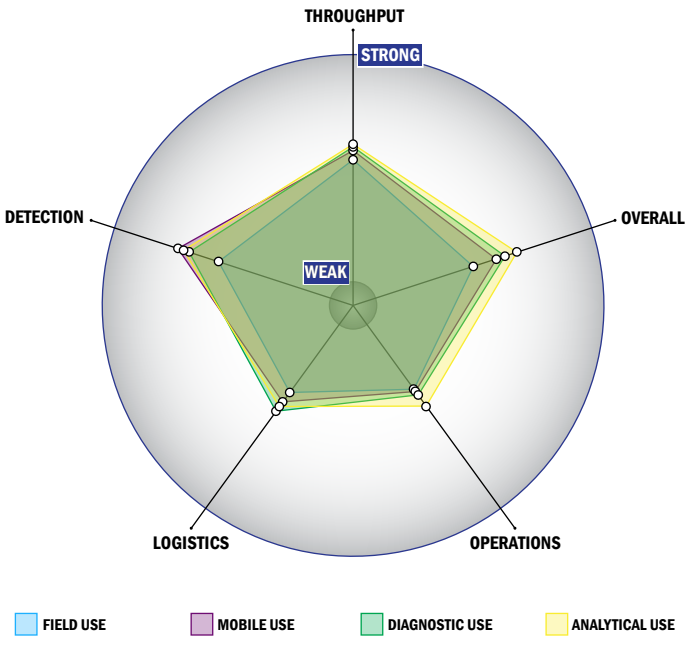
Scoring Analysis

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.



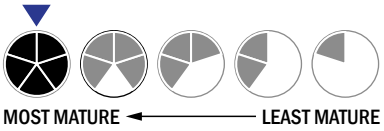
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes for detection
- Multiple samples, multiple tests/sample per run
- 95-32 samples every 2 hours
- 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
- 10-20 minutes is required for setup
- 1-2 steps are required for 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
- Wireless and wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4°C to 41°C
- Between 1 to 3 years shelf life
- Greater than 10 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 closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- < $1x10^{-6}$ mg/m^3
- < 1 ppb
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent