

FLIR Systems, Inc. - Griffin 460 Gas Chromatograph Mass Spectrometer



GENERAL DESCRIPTION:

The Griffin™ 460 GC/MS offers lab quality chemical identification in a compact, easy-to-use package. The Griffin 460 is suited for traditional missions like CWA and TIC analysis. This is done primarily by packaging together a full suite of sample collection tools that address solids, liquids, and vapors with a rugged GC/MS (3rd party tested to MIL-STD-810G) that can consistently and accurately identify chemical threats. The ability to quickly and confidently determine the identity of a chemical threat is a critical performance metric. The Griffin 460 offers the ability to provide single answer results for non-technical users, without sacrificing the ability to perform more in-depth analysis for experienced users. This feature is called the Griffin Match Factor™ (GMF). Our rugged form factor, unique sampling accessories, and simplified software have enabled our customers to deploy in an array of environments from field-based forensics and environmental monitoring to incident response and building security.



TECHNICAL DESCRIPTION:

GC/MS is widely regarded as the “gold standard” technique for chemical analysis. Within one complex sample mixture, multiple chemicals are separated out and identified, even those that are very similar in chemical structure. Once a sample is introduced to the GC/MS, it is automatically transferred into the gas chromatograph. The mixture separates into individual chemical components that travel at different speeds based on their unique properties. Once the mixture is separated into individual chemical components, each chemical molecule is detected by the mass spectrometer where they are blasted with a beam of electrons causing them to break apart. The chemical fragments create a unique chemical fingerprint called a mass spectrum. This mass spectrum is processed by the operating software and is automatically compared to a library of known chemicals. Once the system finds a match, it reports a confirmatory identification of each of the component found in the sample mixture.

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

CONTACT INFORMATION

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Survey Source

Vendor Supplied Information

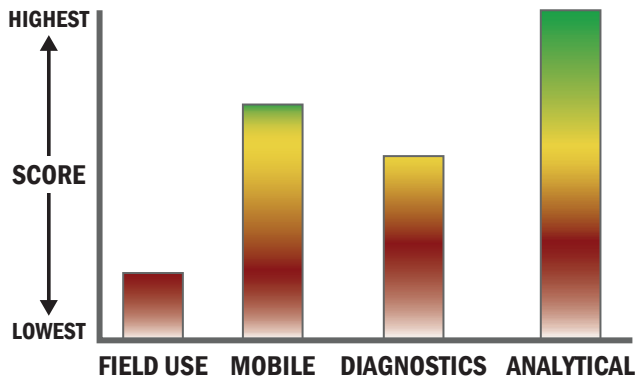
COST

N/A



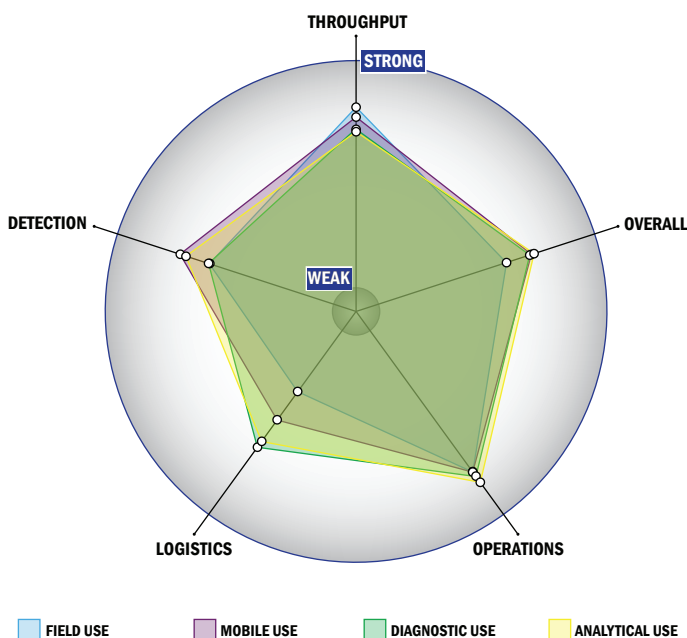
Scoring Analysis

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.



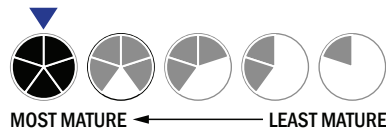
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes for detection
- Continuous operation with no defined runs
- 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
- 1 component
- 10-20 minutes is required for set-up
- Automatic detection

Logistics:

- A day of training and technical skills are required
- Approximately the size of a carry-on luggage suitcase
- Between 25 and 50 kg
- Wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4 °C to 37 °C
- Components must be stored at room temperature (27 °C)
- Performance is not influenced by relative humidity
- 5-10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Less than 10 µL
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- $>1 \times 10^{-3}$ mg/m³
- 1 ppm-100 ppm
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent