

FLIR Systems, Inc. - Griffin 824 Trace Detection Mass Spectrometer



GENERAL DESCRIPTION:

The Griffin™ 824 is the first desktop mass spectrometer designed specifically for explosives and narcotics trace detection. The Griffin 824 mass spectrometer offers ease of adoption across a broad range of existing and emerging trace detection applications. Selectable detection modes allow customers to tailor the system to their operations using explosives only, narcotics only, or explosives/narcotics simultaneous mode. Operators collect trace residue by wiping personal belongings, skin, parcels/cargo, and other surfaces with a sample ticket. The sample ticket is inserted into the Griffin 824 sample inlet where analysis is performed via MS in less than 10 seconds. The Griffin 824 was designed to maximize system operational time by incorporating an open loop that does not recycle air inside the system. No cleaners are required, minimizing consumable costs and allowing rapid clear down after a true alarm.



TECHNICAL DESCRIPTION:

Utilizing lab-caliber mass spectrometry, the Griffin 824 performs rapid analysis and explosives/narcotics threat identification. A mass spectrometer measures a physio-chemical characteristic: the mass-to-charge ratio (m/z) of an ion. Thus, it provides more information about the chemical make-up of a sample than most other sensor technologies can detect. Mass spectrometry is also a very selective technology. Within one complex sample, multiple chemicals can be separated out and identified, even those that are very similar in chemical structure. Mass spectrometers use library matching algorithms to identify the various chemical components within a sample. Griffin 824 is supplied with Griffin-developed spectral libraries that include a broad range of military, commercial, and home-made explosives (includes peroxide-based explosives) that meet current threats and a broad range of commonly abused narcotics and controlled substances.

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

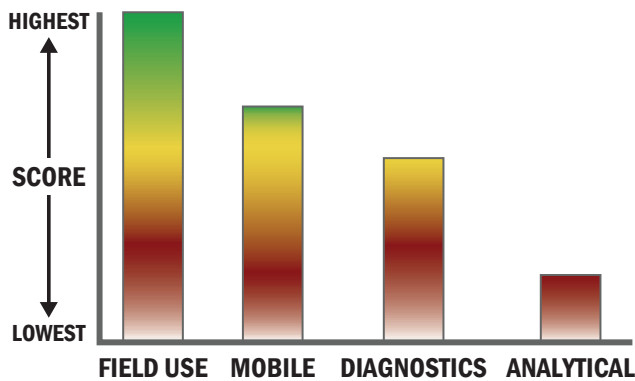
COST

- N/A/system
- <\$.05/analysis



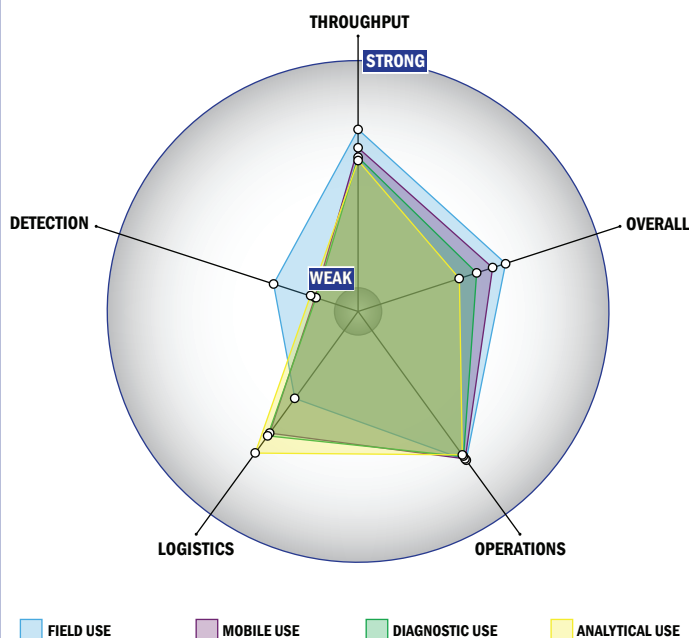
Scoring Analysis

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.



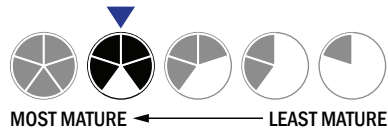
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- 1 sample, single test/sample per run
- 749-350 samples every 2 hours
- The system or device is currently semi-automated
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 1 component
- Greater than 20 minutes is required for set-up
- 1-2 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 220V electrical requirement



Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at room temperature (27 °C)
- Performance is not influenced by relative humidity
- Greater than 10 years expected life
- Results cannot be viewed in real-time
- The system is not capable of autonomy
- The system software is open but modification requires licensing
- The system hardware is closed and not available for modification

Detection:

- This system does not test liquids
- Superior specificity. System has a false alarm rate approaching zero (~0%)