

Product Datasheet

Griffin G510e

Person-Portable GC/MS Chemical Identifier
focused on environmental applications

The FLIR Griffin™ G510e GC/MS is a versatile, person-portable chemical identifier. It complements presumptive techniques used during emergency operations, by enabling responders to analyse all phases of matter (liquid, solid, vapour) and by performing rapid field-confirmation of chemical hazards.

The integrated heated sample probe enables hot zone operators to identify vapour-phase chemical threats within seconds when operated in Survey Mode. The G510e focuses specifically on environmental applications that require better separation and sensitivity to lighter volatile organic chemicals (VOCs). The G510e uses a specialised column and pre-concentrator combination to meet this demand.

The 9" on-board touchscreen delivers automated user controls and can be operated while wearing full personal protective equipment downrange.

It is built with an IP65-rated enclosure for harsh environments and supports passive defence, interdiction, elimination, and consequence management operations. Long-lasting, on-board batteries ensure environmental operation is supported from beginning to end.



Confidently identify unknowns and take action with guided controls and simple threat alarms

- Over 60 VOCs in the Target Library along with the full NIST and SWGDRUG chemical library for field identification and analysis of unknown materials and mixtures.
- Simple on-board touchscreen with automated user controls and Method Selector tool.
- Visual and audible alarm confirmation with limited data interpretation.
- On-board WiFi and GPS.

Versatile in-field sampling options for vapour, liquid, and solid samples

- Vapour sampling probe with rapid-response survey mode.
- Integrated split/splitless liquid injector accepts direct injection of organic liquids.
- Optimised Column and Preconcentrator for VOCs.
- Links with SPME and headspace sample collection tools.
- High-fidelity, low thermal mass (LTM) GC column for unsurpassed resolution in challenging environments.

Completely self-contained and operation- ready from the field to the lab

- IP65-rated, dust-tight and spray-resistant.
- Built-in active pumping system eliminates need for an external service module.
- Integrated carrier gas, batteries, and training reference videos.
- Simple field maintenance activities for increased uptime.
- Extensive training, service, and support options available.
- Optional vehicle mount kit for variety of on-the-go operations.

Specifications

System Overview

Technology	Gas Chromatography / Mass Spectrometry (GC/MS).
Dimensions (L x W x H)	33.7 x 33.7 x 40 cm (13.25 x 13.25 x 15.75") – include batteries, carrier gas, and vacuum system.
Weight	16.3 kg (36 lbs) – include batteries, carrier gas, and vacuum system.
Operating Temperature / Humidity	0 to 40°C (32 to 104°F); < 95% relative humidity.
Storage Temperature	-25 to 55°C (-13 to 131°F).
Decontamination	Sealed for Survey Mode operation in hot-zone; IP65-rated enclosure is dust-tight and spray-resistant.
Power Supply	100 - 24 DV 50-60 Hz 1220 W max); 19 V (DC); 2 x #2590@15 V Li Ion batteries 1 included).
Battery Life	4 hrs in Survey Mode, 2 hrs in Confirmation Mode; hot swappable.
Start Up Time	15 minutes to full operation from cold.
Calibrant	Onboard FC-43 (Perfluorotributylamine).
Carrier Gas	On-board helium; external helium connector, automatic switching (Hydrogen capable).

System Interface

Display	9" Multitouch Color Display (1280 x 720 WVGA; 1300 nits brightness).
Alerts	Audible and Visual (Touchscreen and Handheld Probe).
Software	GSS Level 1 Touch; multiple user levels.
Communication	2 x USB 2.0, Bluetooth 4.0, WiFi 802.11n, Ethernet via USB, integrated GPS.
Data Storage	Internal ≥256GB SSD.
Training Requirements	2 hours basic operation; 8 hours Operator Certification.

Sampling and Identification

Sample Phase	Solid, liquid, and vapour.
Sample Introduction	Heated Sample Probe (included standard): <ul style="list-style-type: none">– Vapour survey mode via Membrane Introduction Mass Spectrometry (MIMS) Inlet.– Vapour confirmation via Internal Dual-Bed Preconcentrator. Split/splitless injector (included standard) accepts: <ul style="list-style-type: none">– Direct liquid sampling (organic solution) via syringe.– Liquid extraction via SPME fibre or PSI-Probe w/ Gerstel Twister™*– Headspace Sampler *Optional accessories.
Threats	Detects and identifies CWAs, TICs, environmental pollutants, and other chemicals.
Standard Reference Database	NIST/EPA/NIH Mass Spectral Library, SWGDRUG Mass Spectral Library, and GriffinLib Mass Spectral Library included.
Sampling and Analysis	Full identification in 4 - 15 mins for most chemicals; identification within seconds (near real-time) when operating in Survey Mode.

Mass Spectrometer

Mass Analyser Type	Linear quadrupole mass filter.
Mass Range / Resolution	15 - 515 m/z; 0.7 amu@FWHM.
Ionisation Type / Source	Electron Impact Ionisation; non-radioactive ionisation source.
Detector	Electron Multiplier.
Vacuum System	Self-contained miniature turbomolecular and diaphragm pumps.
Dynamic Range	7 decades.
Detection Limit	PPM (parts per million) - PPT (parts per trillion). NOTE: PPT (parts per trillion) for vapour analysis with extended sampling time.

Gas Chromatograph

LTM-GC Column	DB-624 (20 m x 0.18 mm x 0.25 µm); others available.
Temperature Range	Programmable 40 to 260°C; ramping of 100°C/min

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