

# Product Datasheet

# Griffin G510

## Person-Portable GC/MS Chemical Identifier

The FLIR Griffin™ G510 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 integrated split/splitless injector allows for environmental, forensic, and hazardous material sampling via syringe injection of organic liquids.

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 defense, interdiction, elimination, and consequence management missions. Long-lasting, on-board batteries ensure every operation is supported from beginning to end.



### Confidently identify unknowns and take action with guided prompts and simple threat alarms

- Full NIST and SWGDRUG on-board libraries provide confirmatory identification and analysis of trace compounds, unknown chemicals, and mixtures.
- Simple on-board touchscreen with navigation assistant and Method Selector tool.
- Visual and audible alarm confirmation with limited data interpretation.
- On-board WiFi and GPS.
- Remote monitoring and control with WiFi hotspot.

### 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.
- Available Prepless Sample Introduction (PSI) Probe, Sample Prep Kit (SPK), and Touch-And-Go (TAG™) capability for direct analysis of solid samples.
- 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 reachback options available.
- Optional vehicle mount kit for shock and vibration protection during off-road or harsh transport.

# Specifications

## System Overview

<b>Technology</b>	Gas Chromatography / Mass Spectrometry (GC/MS).
<b>Dimensions (L x W x H)</b>	33.7 x 33.7 x 40 cm (13.25 x 13.25 x 15.75") – include batteries, carrier gas, and vacuum system.
<b>Weight</b>	16.3 kg (36 lbs) – include batteries, carrier gas, and vacuum system.
<b>Operating Temperature / Humidity</b>	0 to 40°C (32 to 104°F); < 95% relative humidity.
<b>Storage Temperature</b>	-25 to 55°C (-13 to 131°F).
<b>Decontamination</b>	Sealed for Survey Mode operation in hot-zone; IP65-rated enclosure is dust-tight and spray-resistant.
<b>Power Supply</b>	100 - 240 V 50-60 Hz 1220 W max); 19 V (DC); 2 x #2590@15 V Li Ion batteries 1 included).
<b>Battery Life</b>	4 hrs in Survey Mode, 2 hrs in Confirmation Mode; hot swappable.
<b>Start Up Time</b>	15 minutes to full operation from cold.
<b>Calibrant</b>	Onboard FC-43 (Perfluorotributylamine).
<b>Carrier Gas</b>	On-board helium; external helium connector, automatic switching (Hydrogen capable).

## System Interface

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

## Sampling and Identification

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

## Mass Spectrometer

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

## Gas Chromatograph

<b>LTM-GC Column</b>	DB-5MS (15 m x 0.18 mm x 0.25 µm); others available.
<b>Temperature Range</b>	Programmable 40 to 300°C; ramping of 100°C/min

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