FLIR GRIFFIN™ G510

Person-Portable GC-MS Chemical Identifier

The FLIR Griffin™ G510 Gas Chromatograph Mass Spectrometer (GC-MS) is a versatile, person-portable chemical identifier. It complements presumptive techniques used during emergency missions, by enabling responders to analyze all phases of matter (liquid, solid, vapor) and by performing rapid field-confirmation of chemical hazards. The integrated heated sample probe enables hot zone operators to identify vapor-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 mission is supported from beginning to end.

FLIR's Griffin G510 features an integrated split/splitless liquid injector and heated sample probe for in-field analysis of unknowns

ANALYZE SOLID, LIQUID, AND VAPOR SAMPLES

Ultimate in-field sampling flexibility and limited maintenance

- Built-in active pumping system eliminates need for an external service module
- Vapor-phase chemical threats identified within seconds using Survey Mode
- Integrated split/splitless liquid injector accepts direct injection of organic liquids

LAB QUALITY GC/MS ANY RESPONDER CAN USE

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

- Analyzes unknowns via quadrupole mass spec and automatically confirms chemical identity using NIST library
- Visual & audible alarm confirmation with limited data interpretation
- Onboard WiFi and GPS aid in providing legally defensible data

TOUCHSCREEN OPERATION WHILE WEARING FULL PPE

Completely self-contained with large touchscreen, long-lasting batteries, and IP-65 rated enclosure

- IP65-rated, dust-tight and spray-resistant
- 9" on-board touchscreen with automated user controls
- Up to two hour-battery life Confirm Mode or four hours Survey Mode

Specifications

SYSTEM OVERVIEW	
Technology	Gas Chromatography/Mass Spectrometry (GC/MS)
Dimensions (L x W x H)	13.25 x 13.25 x 15.75 in (33.7 x 33.7 x 40 cm) - includes batteries, carrier gas, and vacuum system
Weight	36 lbs (16.3 kg) - includes batteries, carrier gas, and vacuum system
Operating Temp / Humidity	32 to 104 °F (0 to 40 °C); <95% relative humidity
Storage Temp	-13 to 131 °F (-25 to 55 °C)
Decontamination	Sealed for Survey Mode operation in hot-zone; IP65-rated enclosure is dust-tight and spray-resistant
Power Supply	100-240V 50-60Hz (220 W max); 19V (DC); 2 x #2590 @ 15V Li Ion batteries (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 (1280x720 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 & IDENTIFICATION	
Sample Phase	Solid, liquid, and vapor
Sample Introduction	Heated Sample Probe (included standard): - Vapor survey mode via Membrane Introduction Mass Spectrometry (MIMS) Inlet - Vapor confirmation via Internal Dual-Bed Preconcentrator Split/splitless injector (included standard) accepts: - Direct liquid sampling (organic solution) via syringe - Liquid extraction via SPME fiber or PSI-Probe w/ Gerstel Twister™ * - Solid PSI-Probe™ thermal separation via TAG™ * *optional accessories
Threats	Detects and identifies explosives, narcotics, CWAs, TICs, environmental pollutants, and other chemicals
Standard Reference Database	NIST/EPA/NIH Mass Spectral Library
Sampling & Analysis	Full identification in 4-15 minutes for most chemicals; identification wthin seconds (near real-time) when operating in Survey Mode
MASS SPECTROMETER	
Mass Analyzer Type	Linear quadrupole mass filter
Mass Range / Resolution	15-515 m/z; 0.7 amu @ FWHM
Ionization Type / Source	Electron Impact Ionization; non-radioactive ionization source
Detector	Electron Multiplier
Vacuum System	Self-contained miniature turbomolecular & diaphragm pumps
Dynamic Range	7 decades
Detection Limit	PPM (parts per million) – PPT (parts per trillion)
GAS CHROMATOGRAPH	
LTM-GC Column	DB-5MS (15 m x .18 mm x 0.25 µm); others available
Temperature Range	Programmable 40 to 300 °C; ramping of 100 °C/min

In-Field Sample Collection, Decon, and Chemical Identification with FLIR Griffin G510

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