



GOW-MAC[®]
INSTRUMENT CO.

Series 5900 DID Gas Chromatograph

Trace Gas Analysis

Electronic, Specialty & Industrial Bulk Gases

High sensitivity - Impurity levels in the low ppb range

LCD Digital Touchscreen

Stainless steel or corrosion resistant materials

Detector

The Series 5900 DID GC contains a single, GOW-MAC[®] discharge ionization detector (DID) which is non-radioactive, universal, and concentration dependent. The detector uses an electrical discharge in helium to generate high energy UV photons and metastable helium which ionizes all compounds except helium. The DID exhibits a dynamic range of < 5 ppb to < 0.5% by volume.

The most significant feature of the DID is the utilization of an electrical discharge as the radiation source, not a radioactive source. Series 5900 DID Gas Chromatographs in operation have displayed a stability and reliability not generally attributed to ppb detection.

The extremely sensitive DID is placed in a helium purged housing to eliminate possible system contamination. Background noise and detector limits are dependent upon the use of an ultrapure helium carrier gas. The system is designed to prevent contamination by utilizing bellows type metering valves and by locating gas sample valves in a helium purged housing.

Electronics

Electronics for the Series 5900 DID GC consist of a high voltage detector power supply and an electrometer amplifier. The DID power supply provides the high voltage necessary to produce the ionization arc in the DID.



System

The Series 5900 DID GC is offered in numerous configurations, each having a unique valving and flow system to accomplish a variety of trace impurity gas applications. When a base gas other than helium is to be analyzed, the separation of the trace impurities from the base gas peak is critical to the analysis. Each system has been developed to chromatographically manipulate this base gas peak.

Instrument operation is fast and easy using a display on graphical user interface and high resolution LCD touchscreen. The touchscreen allows the user to set column and detector temperatures, discharge and polarization currents, and range selection. Manual valve control is also accessible from the touchscreen.

All Series 5900 DID GC systems can be manufactured with corrosion resistant materials. Corrosion resistant refers to the wetted surface area that comes in contact with the sample.

Column Oven

A centrifugal blower circulates and distributes heated air, thereby eliminating temperature gradients. Linear temperature range is ambient to 300 °C. Columns of appropriate length and kind, with 1/8" VCR® connections, are quoted for a specified type of analysis.

Flow System

Two gases are required to operate the Series 5900 DID GC. Ultra-high purity helium is used for both the carrier gas and the discharge gas. Zero grade helium is used for purging the detector and valve housing, and to actuate all valves. Bellows metering valves are used to control the carrier gas flow throughout the system. All critical gas connections possess 1/4" VCR® fittings. The maximum valve configuration for the 5900 is (4) gas valves in a purged housing and (6) bellows metering valves for flow control.

The GOW-MAC® Series 5900 GC with Discharge Ionization Detector is a complete, dedicated gas chromatographic system requiring only data handling and a few accessories.

Data Handling Capabilities

Software - GOW-MAC offers the powerful Clarity® chromatography software. A variety of interactive PC chromatography data software packages are available. A chromatographer can create methods, design custom reports, view calibration curves, acquire and process data, and create and run batch sequences from a single window.

Specifications

Column Oven

Dimensions	10" W x 4 1/2" D x 7 1/2" H (25.64 cm x 11.54 cm x 19.23 cm)
Temperature Range	Ambient to 300 °C
Temperature Control	Direct reading, ambient to 300 °C
Oven Capacity	Can accommodate up to five (5) 1/8" columns totaling 40' combined

Detector

Type	Discharge Ionization
Design	Low volume
Sensitivity	<10 ppb CH ₄
Carrier Gas	Ultra-high purity helium
Discharge Gas	Ultra-high purity helium

Power Requirements

Series 5900	105 - 125 Vac, 60 Hz, 1100 W, 10 A
Series 5902	200 - 240 Vac, 50 Hz, 1100 W, 5 A

Accessories

Model 75-800	Noble Gas Purifier
Model 75-850-BV	Hydrogen Separator
Model 75-900	Oxygen Trap
Model 21-070	Mini Gas Leak Detector
Part No. 180-567	Digital Flowmeter (for non-corrosive gases)
Part No. 59-595	Complete DID Accessory Package

Overall Dimensions	19.5" W x 25" D x 12.5" H (48.26 cm x 63.5 cm x 31.75 cm)
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Weight

Net	50 lbs. (56.70 kg)
Shipping	60 lbs. (63.50 kg)



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