Gas Chromatograph

TOP-3000GC

Introduction:

TOPLAB INDIA'S TOP-3000GC Gas Chromatography system has been designed using microprocessor control system. TOP-3000GC consists of precision flow control, sampler, separation system, column oven, detectors, and temperature control, detect circuit and chromatography workstation. Controls and parameter setting establishes by the keyboard, large-screen LCD with real-time display of all parameters setting value and actual value.

The model TOP-3000GC Gas Chromatograph with precision temperature control ability, the column oven temperature with superior thermal performance, multistage (10 ramps) programmed temperature control function. It can set up to multi- programming heat up , it also with wide boiling point of the complex sample analysis, column automatic cooling, automatic rear door and double stable gas system functions, simultaneous use of FID and TCD, it also can be installed the packed column and capillary column for the corresponding analysis.

TOP-3000GC Gas Chromatography System

Technical Features:

- TOP-3000GC Control system is designed for monitoring and controlling the instrument through the computer by using software.
- Advanced built-in data acquisition system, supporting real time instrument status monitoring, detection signal acquisition and PC control.
- Column Compartment/oven with superior thermal performance, multistage (10 ramps) programmed temperature control function (supported by "control system").
- Column oven accommodates up to 3 chromatographic columns, and supports multi oven ramps to quick heat-up and rapid cool-down with automated back-door opening. (Cool down rate: 300℃ to 50℃ in 7 min).
- Flexible sample introduction system: 3 sample injectors could be installed and operated simultaneously with independent temperature control.
- Supports 3 detectors operation simultaneously with high sensibility and stability. Simultaneous multi-detection with detectors in series or in parallel meets the various analysis requirements.
- The new FID provides higher sensitivity than ever before. It is very convenient to disassemble and clean the jet and collector. Precisely fixed emitter configuration ensures conformity of product performance;
- Excellent TCD detector with high-resistance tungsten-rhenium filaments provides high sensitivity. A sensitivity of 10000mV.mL/mg is achieved with optional amplifier circuit board. Special configuration of air heat insulation enhances the stability of TCD detector
- Constant-current, pulse-modulated ECD detector sets sensitivity and current by computer.
- 2 independent and analog signals output.
- Superior performance with advanced microcomputer-based temperature control system.
- High temperature accuracy (optimum ± 0.05℃), high reliability, and anti-interference.
- Self-diagnosis/ self-protection function (overheat protection, power-off protection, etc.).
- Intuitive display of timing program, detector status, measurement range, current setting etc.
- TOP-3000GC also has a temperature limit setting, analysis time count, temperature keeping, dynamic scan the actual temperature.
- opens the rear door automatically when cooling the column oven.
- Gas Chromatograph with self-test function, when error occurs it will be automatically closes the temperature controller.
- TOP-3000GC Gas Chromatograph have been designed using backpressure control system with a stable pre-column pressure, specialised for analysis of capillary, and increased capillary system stability.
- Capillary Sample settings shunt / no shunt are two types of flexibility to the circuit control section with automatic split / split less.
- Capillary injector cleaning function with the membrane, effectively preventing the injector at high temperatures when the phenomenon of mistake peaks.
- TOP-3000GC Gas Chromatograph injector with two options: packed column sampler for packed column and large-bore capillary column analysis and capillary sampler suitable for small-calibre, large-bore capillary column analysis.

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Technical Specification:

Column Oven Temperature Control System	Temperature Range	Ambient Temp.+ 5°C～400°C（Increment 1°C）
	Temperature Accuracy	Better than ± 0.05 °C
	Temperature-programmed setting	0.1°C～40°C/min (1°C Increment)
	Program ramps	7 ramps in total (10 ramps available with control workstation)
	Total time of total program	0～655min（Incremental 1min）
	Temperature object	Column box, thermal conductivity, detector, injector, capillary injector etc.
FID : Flame Ionization Detector	Minimum Detection limit	≤8×10^{-12} g/s (C16)
	Best test result	≤3×10^{-12} g/s (C16)
	Baseline noise	≤5×10^{-14} A
	Baseline draft	≤6×10^{-13} A/h
	Linearity range	≥10^{6}
	Maximum Temperature	400 °C
	Flow Setting	Air: 0-400ml/min H2 :0-150 ml/min Makeup Gas : 0-150 ml/min
	Gas flow rate stability	≤1%
TCD : Thermal Conductivity Detector	Sensitivity	≥5000mV.mL/mg
	High Sensitivity (HTCD)	≥10000mV.mL/mg
	Baseline noise	≤20μv
	Baseline draft	≤15μv/30min
	Linearity	≥10^{4}
	Maximum Temperature	400 °C
FPD : Flame Photometric Detector	Detection limit	≤2×10^{-11} g/s(P)(Parathion-methyl); ≤1×10^{-10} g/s(S)(Parathion-methyl)
	Drift	≤2×10^{-11} A/30min
	Baseline noise	≤5×10^{-12} A
	Maximum Temperature	400 °C
ECD : Electron Capture Detector	Detection limit	≤1×10^{-13}g/s (γ-666)
	Drift	≤80μV/30min
	Baseline noise	≤20μV
	Linearity	≥10^{3}
	Maximum Temperature	350 °C
NPD : Nitrogen-Phosphorus Detector	Detection limit	≤5×10-12g/s(N) (Azobenzene); ≤5×10-13g/s(P) (Malathion) (On programmed)
	Drift	≤8 x10^{-13} A/h
	Noise	≤ 5 x 10^{-13} A
	Maximum Temperature	400 °C
All Detectors are Compatible with 1/4",1/8",1/16" Packed columns and capillary Columns		
Interface: RS232C serial interface and USB interface for analysis software		
Power Supply: 220V ± 22V 50Hz ± 0.5Hz		
Dimension: 800 × 650 × 570 (mm)		
N.W.: 65Kg		

Note: Please select the configuration as per customer application. GC System can be configure and update as per customer's requirement.

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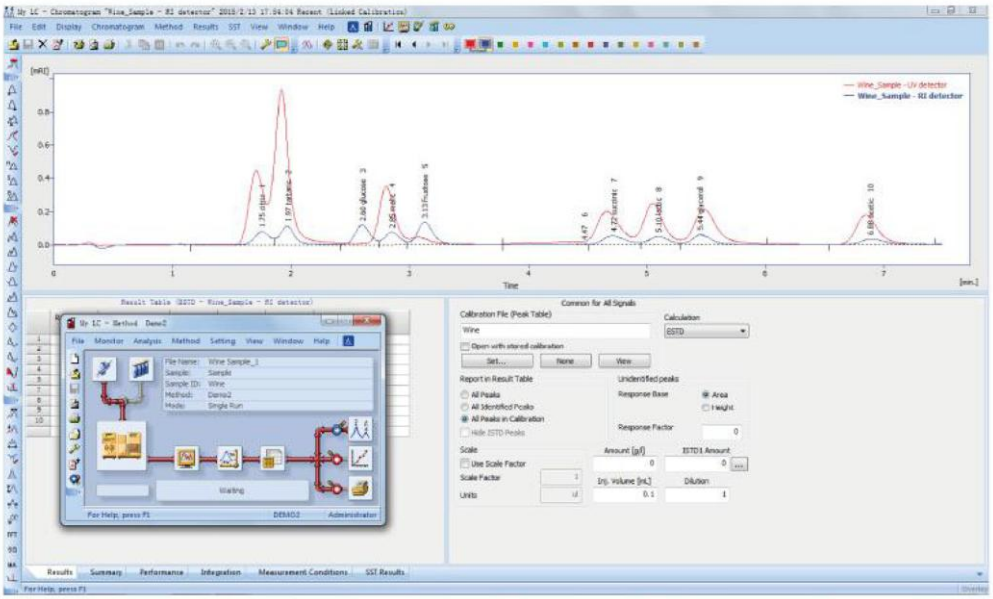
Microcomputer Control System:

- With advanced control techniques, microcomputer-based temperature control system provides superior performance.
- High temperature precision (± 0.5°C), high reliability, and high resistance to disturbance.
- Five independent heated zones, with maximum operating temperature of 400°C.
- Temperature-limit setting and overheat protection.
- Instrument control is accomplished through the keypad, and the instrument offers outstanding capabilities.
- Self-diagnosis.
- Power-off protection.
- Ten methods saving and reloading.
- Two controls of external events.
- Timing on/off of temperature control.
- Timing program, detector status, measurement range, polarity and current setting and display.
- Temperature setting values, actual values, retention time and analysis time display.

- **Chromatographic work station (Software- T-3000PC):** The external interface box + work station suitable for TOP-3000GC Gas Chromatograph Operation through software. Fully compliant routine analyses to totally flexible research workflows. The software simplifies the entire chromatography workflow, giving better results, faster easier-to-use instruments and software.

- **Clarity Software Interface:** Clarity software compatible with GLP/FDA 21CFR Part 11 requirements and regulations (electronic records and signatures)



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