

GAS CHROMATOGRAPHY SYSTEMS



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Used in Food Testing, Chemical Industry, Beverage Testing, Drug testing, Forensic Science, Pharmaceutical, Molecular Biology, Medical, Research, Laboratory.

LTCGR8-7 GAS CHROMATOGRAPHY SYSTEM

PC control, user-friendly interface, and easy to operate.

Heating speed is fast and overshoot temperature is small.

Self-diagnosis, power protection, oven over-temperature protection, and automatic ignition.

It can accurately display the temperature control settings, actual value, and FID amplifier sensitivity.

The single gas system and precise scale pneumatic control valve contribute to excellent reproducibility and stability and can perform analysis of packed column or capillary with wide diameter of 0.53mm.

Packed columns: On-column injection, instantaneous vaporization injection, gas injection.

Open computer system and chromatography workstation can work together to process data.

Large capacity oven facilitates the installation of packed column and capillary.

Built-in heating wire structure.

RS232 communication port.



SPECIFICATIONS

Model	LTCGR8-7
Column Oven	
Temperature Range	15°C – 399°C above room temperature (increment: 1°C)
Temperature Control Accuracy	Better than $\pm 0.1^\circ\text{C}$ (measured at 200°C)
Hydrogen flame ionization detector (FID)	
Detection limit	$\text{Dt} \leq 1 \times 10^{-10} \text{ g/s}$ (octane and hexadecane)
Baseline drift	$\leq 2 \times 10^{-12} \text{ A/h}$
Linear range	$\geq 10^6$
Max. limit temperature	400°C
Other Specifications	
Dimension (LxWxH)	575x480x490 mm
Weight (Kg)	50
Power supply voltage	220 V - ± 22 V 50 Hz ± 0.5 Hz
Power	$\leq 1500 \text{ W}$

LTCGR8-8 GAS CHROMATOGRAPHY SYSTEM

The host uses a 7-inch color touch screen, electronic display gas flow and pressure values.

Computer anti-control (need to choose PC-side anti-control software) and the host touch screen to achieve synchronous two-way control.

Multi-core, 32-bit embedded hardware system to ensure reliable operation of the instrument.

One key to start function.

Extensible synchronous external triggering function can be initiated by external signals (autosampler, thermal analyzer, etc.) at the same time to start the host and workstation.

It has a perfect system self-test function and automatic fault recognition.

Extended interface with 8 external events, which can be equipped with various function control valves and operate according to their own timing.

20 sets of sample test mode memory function.



SPECIFICATIONS

Model	LTCGR8-8
Column Oven	
Inner volume	22 L
Temperature Range	5°C – 400°C (room temperature)
Temperature Control Accuracy	± 0.1°C
Heating Rate	0.1 - 60°C /min
The order of heating of the program	9
Program Temperature Repeatability	≤ 2%
Cooling Method	After the door
Cooling Rate	≤ 10 mins (250°C – 50°C)
Sampler	
Temperature Control Range	7°C – 420°C (room temperature)
Temperature Control Mode	Independent temperature control
Carrier gas flow control mode	Constant pressure
Number of simultaneous installations	Up to 3
Injection unit type	Packed column, shunt
Split ratio	Display
Pre column pressure range	0-400 kpa
Pre column pressure control accuracy	0.1 kpa
Flow setting range	H2O - 200 ml / min N2O – 150 ml / min
Hydrogen flame ionization detector (FID)	
Temperature control range	7°C – 420°C (room temperature)
Number of simultaneous installations	Up to 2
Ignition function	Automatic
Detection limit	≤ 3x10 ⁻¹² g/s (n-hexadecane)
Baseline noise	≤ 5x10 ⁻¹⁴ A
Baseline drift	≤ 6x10 ⁻¹³ A
Dynamic range	107
RSD	≤ 3%
Thermal Conductivity Detector (TCD)	

Sensitivity	5000 mV.ml / mg (n-hexadecane)
Baseline noise	≤0.05 mV
Baseline drift	≤0.15 mV / 30 min
Dynamic range	105
Other Specifications	
Power supply voltage	220 V ± 22 V, 50 Hz ± 0.5 Hz
Power	3000 W

LTCGR8-9 GAS CHROMATOGRAPHY SYSTEM

Control system is designed for monitoring and controlling the instrument via the computer.

Column Compartment/oven with superior thermal performance, multistage (10 ramps) programmed temperature.

Advanced built-in data acquisition system, supporting real time instrument status monitoring, detection signal acquisition and PC control.

Column oven accommodates up to 3 chromatographic columns, and supports quick heat-up and rapid cool-down with automated back-door opening.

Flexible sample introduction system: 3 sample injectors could be installed and operated simultaneously with independent temperature control.

High sensibility and stability detector.

2 independent and analog signals output.

M6 software, compatible with GLP/FDA-21 CFR Part 11 requirements and regulations (electronic records and signatures).

Sample injector and evaporation chamber.



SPECIFICATIONS

Model	LTCGR8-9
Column Oven	
Temperature Range	Ambient temperature +7°C ~ 400°C (in 1°C increment)
Temperature Control Accuracy	± 0.02°C
Programmed temperature setting	0.1°C ~ 40°C/min (in 1°C increment)
Program ramps	7 ramps in total (10 ramps available with control workstation)
Cooling time	400°C to 50°C in 8-10 min at 25°C ambient
Size (LxWxH)	284x280x241mm (internal) 340x345x281mm (external)
Hydrogen flame ionization detector (FID)	
Detection limit	≤ 3x10 ⁻¹² g/s (C16)
Best test result	≤ 3x10 ⁻¹² g/s (C16)
Baseline noise	≤ 5x10 ⁻¹⁴ A
Baseline drift	≤ 6x10 ⁻¹³ A /30 min
Linear range	≥ 106
Thermal Conductivity Detector (TCD)	
Sensitivity	≥5000 mV.ml / mg (C 16)
Baseline noise	≤20 μV
Baseline drift	≤60 μV/h
Linearity range	≥104
Flame Photometric Detector (FPD)	
Detection limit	≤8x10 g / s (P)

≤8x10 g / s (S)	Flame Photometric Detector (FPD): Drift
≤2x10 ⁻¹¹ A/30 min	Flame Photometric Detector (FPD): Baseline noise

LTCGR8-10 GAS CHROMATOGRAPHY-MASS SPECTROMETRY SYSTEM

Hardware:

Electronic pressure/flow control system (EPC/EFC) for self-developed system.

Patented EI filament set provides highly efficient electron emission, a maximum of 350μA.

Quality mass analyzer with pre-filter reduces quadrupole pollution.

High-energy dynode electron multiplier ensures good sensitivity.

Vacuum system with quality mechanical and turbo molecular pumps guarantees stability and reliability.

Full scale gauges monitor vacuum states in real time.

Self protection system guarantees safety of operators and core parts under abnormal conditions.

RF power supply digital compensation technology ensures better sensitivity and resolution in full mass range.

Software:

The software controls auto sampler, gas chromatograph and mass spectrometer, data are acquired and transferred by high-speed network card.

Full Scan and selective Ion Monitoring modes are available, the system supports manual and automatic tuning, display of total ion current and mass chromatogram.

The data processing section searches target compounds based on mass spectra of samples, displays search results which include retention times, structural formula and standard mass spectra, and compares the abundances of standard and real target ions. Users can make accurate qualitative and quantitative analyses.

Superior quality: It uses high-end core parts, which ensures high quality.

Meeting high demands: It provides necessity parts and meets multiple requirements from clients in different fields.

User-friendly design: It facilitates easy operation and convenient maintenance.

High-efficiency ionization source: Modularization design, employing ion source, having high ionization efficiency, and enhancing sensitivity.

Software: Convenient operation, data acquisition and processing.

Highly cost-effective: Offering more benefits while meeting all application demands.

Consumables with favourable price: Most consumables and parts are self-developed, which save a lot of maintenance cost, while providing high performance.



SPECIFICATIONS

Model	LTCGR8-10
GC Specification	
Inlet	Split / Splitless
Inlet Temperature	Highest temperature 450°C
Electronic Pressure Control(EPC)Range	0-50 Psi, accuracy 0.1 Psi, support constant
Maximum Diffluent Ratio	500:1
Working Temperature in column oven	+10°C - 450°C
Maximum Heating Rate	40°C /min
Platform Warming	8 stages 9 platforms program warming

Sample size	0.1 10 uL
Peak Area Repeatability	< 1 % RSD
Retention Time	< 0.5% RSD
Sweeping Gas Volume	2-10 ml/min
MS Specification	
Ionization Energy (Electron Impact)	10 eV -100eV (normally 70eV)
Mass Range	1.5-1000 amu
Resolution	0.7 amu (half peak width)
Ion Source Temperature	100 – 350°C
Maximum Service Temperature at Interface	400°C
Mass Axis Stability	+/- 0.10 amu/48 hrs
Sensitivity	Full scan, 1pg OFN at m/z 272 with S/N ≥30: 1 (RMS)
Scanning Rate	Max. 10000 amu/s
Accuracy	0.1 amu
Vacuum System	High-performance mechanical backing pump (geometric pumping speed is 5m ³ /h) and turbo molecular pump (geometric pumping speed is 67 l/s) provide sufficient vacuum for mass spectrometry system ($\leq 8 \times 10^{-5}$ mbar), and a vacuum gauge with wide measuring range displays real time vacuum information
Detector	High energy dynode electron multiplier
Scanning methods	SIM, FULL SCAN, MIX
Others	
Pressure	220 V(+/-5%), 50 Hz(± 1)
Ambient Temperature	18°C~30°C
Relative Humidity	< 70%



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