

ELITE



GC2000 Series Gas Chromatography

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About Elite

Dalian Elite Analytical Instruments Co., Ltd. is a high-tech enterprise that develops, produces and sells high performance liquid chromatographs, chromatographic data workstations, liquid chromatography columns, etc. In 2023, in order to meet the diversified needs of customers for analytical instruments, the company has launched a series of gas chromatography systems such as the GC 2100 as well as the EClassical 3200L-MS² Vertical 9100 liquid-mass coupling systems. Vertical 9100 Liquid Mass Spectrometry System. The company also has Liaoning Engineering Technology Research Centre, is the drafting unit of national standards of HPLC industry, is the star supplier of SINOPEC material procurement, and has passed the certification of ISO9001 quality management system, intellectual property management system and after-sales service system. By the end of 2023, the company has more than 70 core patents and 20 registered trademarks. Since the "Ninth Five-Year Plan", Dalian Elite has been undertaking and successfully completing the national scientific and technological research, major scientific and technological special projects and the National Torch Plan and other major projects and has achieved a lot of fruitful results and won many awards.

Elite (Suzhou) Analytical Instruments Co., Ltd. was put into production in Suzhou Nano Industrial Park in 2018, the completion of Elite Suzhou marks the development and expansion of Elite's business. Elite Suzhou has established the "Academician Workstation", with academicians of the Chinese Academy of Sciences and the company's innovation team as the core, research and development of new technologies, new processes and new products, and the development of advanced, stable and practical high-performance liquid chromatography products.

Dalian Elite and Elite (Suzhou) are collectively known as Elite Technology, Elite has developed into a leading enterprise in the domestic liquid chromatography industry by taking scientific and technological innovation as the driving force, stable quality as the foundation, and service integrity as the principle, and the existing series of products include liquid chromatography systems from analytical to preparative levels, gas chromatography systems, liquid-mass spectrometry systems, high-pressure infusion pumps for industrial production, a variety of different types of detectors, injectors, chromatography workstations, columns and their chromatographic accessories. Our products include liquid chromatography systems from analytical to preparative level, gas chromatography systems, liquid mass spectrometry systems, high-pressure infusion pumps for industrial production, many different types of detectors, injectors, chromatographic workstations, chromatographic columns and their accessories, etc., which have been sold all over the country, and have been exported to Europe, America, Africa, Latin America, Southeast Asia, the Middle East and Central Asia.



GC2020

Gas Chromatograph



Instrument Features

The gas circuit realizes high-precision full EPC electronic flow control, equipped with counter-control workstation as standard, and can be matched with a variety of autosamplers; it is widely used in many fields, such as petroleum, chemical industry, environmental protection, food safety, disease control and education and scientific research.

✓ High Accuracy Gas Flow Control System (EPC)

- ◇ Adopting digital control by EPC technology, the automation level and overall performance are close to those of international first-class brands.
- ◇ High-precision gas flow control ensures the accuracy of GC analysis and daily analysis efficiency.
- ◇ Realization of fault self-protection, automatic ignition, flameout focus, automatic opening of gas circuit, achieving one-button start.

✓ Extremely user-friendly software operating system

- ◇ Equipped with the IBrainchrom workstation, which has powerful data processing functions and can support the simultaneous work of multiple chromatographs (253) for data processing and reverse control.
- ◇ IBrainchrom workstation is equipped with Modbus RTU communication protocol, which makes it easy to connect analysis results to DCS and other central control systems.

✓ Modular structural design

- ◇ Convenient for upgrading, can be equipped with a variety of high-performance detectors, such as FID, FPD and so on.

Technical indicators

- ◇ Temperature control area: 8-way independent temperature control, can be expanded to their own independent small column box temperature control area.
- ◇ Temperature display accuracy: 0.01 °C
- ◇ Maximum temperature increase rate: 120°C/min
- ◇ Cooling speed: from 450 °C down to 50 °C: <5min
- ◇ Number of programmed temperature rise steps: 99 steps
- ◇ The longest running time: 999.99min
- ◇ EPC control mode: pressure, flow, line speed, programme pressure, programme flow, programme line speed
- ◇ EPC working gas: hydrogen, helium, nitrogen, air, argon and so on.
- ◇ EPC programme pressure / flow / line speed: 12 steps
- ◇ EPC range: pressure: 0 ~ 100psi flow: 0 ~ 100mL / min or 0-1000mL / min
- ◇ EPC precision: pressure: 0.001psi

GC2011

Gas Chromatograph



Instrument Features

✓ Wide range of detector units

It can be equipped with a variety of detectors to meet the needs of different fields of analysis, and the leading design of the injection port, suitable for a variety of injection methods, such as headspace injection, thermal resolution injection, etc., easy to handle a variety of samples for analysis.

✓ Powerful detector extensions

Detectors and their control components are unitized and combined in a design that extends the control mode to a plug-and-play system.

✓ Ultra-efficient rear-opening design

Intelligent rear-opening temperature control system ensures the stability of the column chamber temperature in any area, and the fast-cooling speed can achieve the real sense of near room temperature operation.

✓ Has powerful and perfect power-on self-diagnostic function, intuitive display of fault information, power failure storage protection function, automatic screen saver and anti-power interference capability.

Technical indicators

- ◇ Screen Size: 7-inch industrial color LCD screen
- ◇ Language: Chinese/English two sets of operating system
- ◇ Temperature range of column, gasification chamber and detector: room temperature +5°C~450°C.
- ◇ Temperature display accuracy: 0.1°C.
- ◇ Maximum temperature increase rate: 120°C/min
- ◇ Intelligent rear door: unique hot air outlet and fast cold air design, in and out of the air volume stepless adjustable, with faster cooling speed of the column box
- ◇ Programmed temperature step: 16 steps (can be expanded)
- ◇ Sampling mode: capillary column shunt / non-shunt injection (with diaphragm purge function) filled column injection, valve injection, gas / liquid automatic injection system, etc.
- ◇ Inlet port: 1~4, of which the capillary column inlet port for up to 3
- ◇ Injector valve: can be equipped with multiple port automatic control valve, can be automatically sequential operation.
- ◇ Number of detectors: 4
- ◇ Detector type: FID, TCD, ECD, FPD, NPD, etc.
- ◇ With power-on self-diagnostic function, automatic ignition function, gas break protection function

GC2010

Gas Chromatograph



Instrument Features

- ✓ The instrument is cost-effective, full-featured and versatile.
- ✓ Liquid crystal display in Chinese/English, self-diagnosis, power failure protection.
- ✓ Seven independent temperature control zones, temperature control accuracy is better than 0.1 °C, the vapor chamber, detector and amplifier are modular design.
- ✓ Three independent feeders can be installed, and users can choose their own six-way valve feeder, conversion furnace device according to their own analytical requirements.

Technical indicators

- ◇ Temperature control area: 7-channel independent temperature control system, with automatic temperature protection function
- ◇ Temperature range of column, gasification chamber and detector: room temperature +5°C~420°C.
- ◇ Temperature setting accuracy: 0.1°C.
- ◇ Maximum temperature increase rate:80°C/min
- ◇ Intelligent back door: in and out of the air volume stepless adjustable
- ◇ Procedure temperature rise order: 20 steps
- ◇ Injection type: packed column injection system, capillary column injection system
- ◇ High-precision double stabilization gas circuit, 3 detectors can be installed at the same time
- ◇ Detector type: FID, TCD, FPD

Auto Headspace Sampler



Product Features

- ◇ Liquid crystal display with Chinese characters and multi-function keyboard.
- ◇ Headspace bottle, sample feeding system and transmission line three independent heating temperature control, temperature control accuracy: $<\pm 0.2^{\circ}\text{C}$.
- ◇ 3-channel event, 10-order time programmed control, programmable automatic operation.
- ◇ 20 kinds of methods for users to edit, store and call, in order to achieve rapid startup and analysis.
- ◇ Simultaneous startup of GC, chromatography workstation, or external events can be used to start the unit.
- ◇ Automatic beep function after the time programmed has finished running.
- ◇ Stopwatch function.
- ◇ Sample pressure range: 0~0.4MPa continuously adjustable.
- ◇ Headspace bottle stations: 12 (20mL headspace bottles).
- ◇ Repeatability: $\text{RSD}\leq 1.0\%$ (200ppm ethanol/water).
- ◇ Headspace bottle specifications: 20mL (10mL, 50mL and other specifications can be customized); injection system blowback cleaning flow and time continuously adjustable.

Automatic Headspace Sampler



Product Features

- ◇ Full-automatic bottle loading, identifying bottle position, generating feeding sequence, breaking the traditional headspace red tape operation, realizing the real meaning of one-key opening.
- ◇ 7-inch touch screen operation, easy to use interface, modular distribution, easy to use.
- ◇ Customized sequence sampling can set the sampling order at will, and support cyclic sampling.
- ◇ Memory function of analysis parameters can store a variety of analysis parameters, at any time, a key to access the parameters needed for the application.
- ◇ Large heating power, fast temperature rise, small gradient, easy to take and put the sample bottle.
- ◇ Adopting high-precision pressure regulator valve and flow regulator valve, high precision and stable airflow.
- ◇ With sample adsorption tube cleaning function, to avoid cross-contamination.
- ◇ Pipeline using passivated silane treatment of 316 stainless steel gas line tube, unique sample output tube heating design to prevent sample adsorption condensation.
- ◇ Heating valve box using precision automatic six-way valve, with a small dead volume, high temperature resistance and other characteristics.

Primary Automated Thermal Resolver



Product Features

- ◇ It can be used in conjunction with various types of domestic and imported gas chromatographs.
- ◇ Large heating power, fast temperature rise, small gradient, easy to take and put the sample tube.
- ◇ Adopting high-precision pressure stabilizing valve and flow stabilizing valve, high precision and stable airflow.
- ◇ With sample adsorption tube cleaning function, to avoid cross-contamination.
- ◇ The scientific design of sample tube assembly and sealing makes the operation more convenient and reliable.
- ◇ Stainless steel tubes with passivated salinization treatment are used for the tubes, and the unique heating design of the sample output tube prevents the sample from adsorption and condensation.
- ◇ Heating valve box using precision automatic six-way valve, small dead volume, high temperature resistance and other characteristics.
- ◇ Synchronous operation of sampling and data processing, set the analysis time, sampling time and purge time, you can trigger the external data processing device and its synchronous operation, greatly reducing the timing error.
- ◇ Memory function of analysis parameters can store 10 kinds of analysis parameters, call at any time.

Secondary automatic thermal resolver



Product Features

- ◇ Method parameter setting, real-time display of the working status, running time.
- ◇ The desorption area, injection valve, sample transfer tube and secondary desorption area are all individually heated, and temperature controlled.
- ◇ Set up the analysis programme, press the run button to automatically complete all the analyses.
- ◇ According to the user's needs to increase the room temperature secondary desorption components or low temperature secondary desorption components.
- ◇ GC and chromatographic data processing workstation can be started simultaneously, or the device can be started by external programmes.
- ◇ The sampling tube activation programme can be loaded to automatically activate the sampling tube after desorption.
- ◇ Automatically realize the functions of desorption, blowing adsorption, re-desorption, sample injection and back blowing cleaning.
- ◇ Adopting electronic cooling and second-order thermal desorption process to ensure that narrow peak shapes are obtained.
- ◇ The sample transfer tube and injection valve have automatic back blowing function to avoid cross contamination of different samples.
- ◇ Easy to replace the injection needle, can be connected to all models of GC injection port at home and abroad.

Gas Autosampler



Product Features

- ◇ Apply to batch routine gas auto-sampling, the whole process of automation, suitable for gas bags, syringes, etc.
- ◇ Fully automatic multi-point dilution calibration, one bottle of standard gas to complete the multi-point calibration.
- ◇ Quantitative injection can accurately control the injection volume (optional).
- ◇ Before and after each injection, the system automatically cleans the sample line and quantitative ring, effectively reducing cross-contamination.
- ◇ The operation interface is a seven-inch capacitive touch screen, easy to operate, but also can achieve PC software reverse control, screen synchronization (optional), real-time display of the progress of the operation and each parameter, the data is stable and reliable, good repeatability.
- ◇ Full-automatic gas dispensing function, dilute the standard gas or sample gas proportionally.

Liquid Autosampler



Product Features

- ◇ Automatic position adjustment of the 24-bit feeder through self-alignment settings; Easy slide-in installation for easy feeding and maintenance.
- ◇ Simplified single-cable connections for communication, synchronization and power; wide sample volume scalability to meet any workload requirement.
- ◇ Customized cleaning of the syringe before and after injection with a single or combination of solvents (up to four), allowing for the removal of virtually any residual sample.
- ◇ Efficient and accurate sampling of low-boiling compounds using a sampler that is not affected by the temperature of the injection port.

Workstation

- ◇ Supporting up to 253 chromatographs to connect to the workstation at the same time to achieve data acquisition and instrument control, simplifying the laboratory setup and configuration, and facilitating data management.
- ◇ Adopting the technologically advanced Ethernet communication interface, together with the more intelligent network connection method to achieve one-key on-line.
- ◇ Chromatography workstation adopts a new chromatographic data processing methods and strives to make the user's operation the most simple and intelligent, while retaining the most professional parameter adjustment function, applicable to users of various experience levels.
- ◇ The workstation is synchronized with the inverse control of the instrument, which can achieve complete control of the instrument, facilitating the operation of the instrument while reducing the errors generated by human operation.
- ◇ The software interface layout is simple, clear and well-organized, modular distribution, easy to use.
- ◇ Powerful statistical functions, and provides, for example, spectra online merger, offline merger, batch processing, detailed search, results summary and other powerful data processing system.
- ◇ Supports sequence feed function and custom sequence name, which is more convenient for batch analysis scenarios.
- ◇ Instrument parameters can be saved as a separate method file, which can be recalled at any time to save time and improve efficiency.



About Elite

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