

# CIC-D300+

## Ion Chromatograph



## Dual-channel system, Stable and Efficient

### Introduction

As a new generation of intelligent dual channel ion chromatograph, CIC-D300 plus is the latest ion chromatograph independently developed and produced by SHINE in terms of software and hardware. Each channel operates independently at the same time without mutual interference, realizing the simultaneous detection of cation and anion.

## Features

- 10 inch HD touch screen: real time display of flow path and operation status of the instrument;
- Built-in double membrane eluent generator: no need degassing pipe and capture column, has pressure resistance of 30MPa, simpler flow path and smaller dead volume;
- Ultra-pure ion purifier: it can purify water online and reduce the water requirements of the instrument, so as to reduce the baseline background and improve the signal-to-noise ratio;
- Suction sampling system: use peristaltic pump to suck samples to reduce cross pollution at the injection port;
- The gas-liquid separator will remove most of bubbles entering the flow path, and the vacuum degasser will continuously remove the residual gas dissolved in water;
- Secondary infusion system: plunger pump and peristaltic pump secondary infusion system, combined with ultra pure on-line purification module and low-pressure gas-liquid separator, provide the most stable infusion scheme for the system.
- Integral heating and insulation system: multi-point temperature control and overall insulation design are used to deal with extreme environment, and provide eluent preheating for flow path to ensure instrument stability;
- Powerful safety assurance system: including eluent consumption alarm, liquid leakage alarm, low pressure alarm, over pressure alarm, fault alarm to reduce possible hurt by misoperation.

## Technical Parameter

CIC-D300+	
Specifications:	
Pump	<p>Two-stage power with peristaltic pump and piston pump , equipped with check valve, which can provide power. The pump head and pipeline are made of chemical inert non-metallic PEEK material, chemically inert, metal-free PEEK flow paths, compatible with aqueous eluents of pH 0–14 and reversed-phase solvents.</p> <p>Max Pressure: 42MPa            Flow Rate Range: 0.001-12mL/min            Pressure display accuracy: <math>\leq 0.1</math>MPa            Pressure Pulse: <math>\leq 0.5\%</math>            Flow precision: <math>\leq 0.07\%</math>            Flow accuracy: <math>\leq 0.07\%</math>            Stability of Flow: <math>\leq 0.09\%</math></p>
Conductivity Detector	<p>The signal of concentration range from ppb - ppm can be expanded directly without adjusting the range.            Digital signal temperature control, constant temperature of conductivity cell can be set by software.</p> <p>Cell Volume: <math>\leq 0.4\mu\text{L}</math>            Measuring Range: 0-50000<math>\mu\text{S/cm}</math>            Resolution: 0.0020nS/cm            Baseline Noise: <math>\leq 0.0002\mu\text{S/cm}</math>            Baseline Drift: <math>\leq 0.001\mu\text{S}/30\text{min}</math>            Max Pressure: 10MPa            Minimum Detectable Concentration : Cl-<math>\leq 0.00008\mu\text{g/mL}</math>            Li+<math>\leq 0.00005\mu\text{g/mL}</math>            Instrument Linearity: <math>\geq 0.999</math>            Qualitative Repeatability: <math>\leq 0.05\%</math>            Quantitative Repeatability: <math>\leq 0.06\%</math></p>
Suppressor	<p>Continuous self regeneration micro membrane electrical suppression technology does not need additional regeneration solution.            The resin filled structure has strong pressure resistance and dry crack resistance, high inhibition capacity and wide application range.            High suppression capacity and low background conductance.            The resin filled self-regenerative suppressor has strong</p>

		<p>pressure resistance, no leakage at 6MPa and normal operation at 2MPa.</p> <p>Void volume &lt; 40 <math>\mu</math>L. More sensitive response signal</p> <p>A special suppressor suitable for small diameter and small flow rate can be selected, with smaller dead volume and lower detection limit.</p> <p>Suppression capacity 200 <math>\mu</math>eq / min (anion), 100 <math>\mu</math>eq/ min (cation)</p>
Integral and System	Heating and Insulation	<p>The overall constant temperature design uses multi-point temperature control and overall thermal insulation design. The detection room where the conductivity cell, suppressor and other components are located provides overall heating and thermal insulation treatment to cope with extreme environment, and provides shower preheating for the flow path to ensure the stability of the instrument test.</p> <p>The column heater is heated by circulating air, which makes the column temperature more stable and ensures accurate temperature control.</p> <p>Embedded column card slot, compatible with standard chromatograph column.</p> <p>Temperature control range: ambient + 5-60 <math>^{\circ}</math>C</p> <p>Allowable error of temperature setting value of column incubator: <math>\pm 0.1^{\circ}</math>C</p> <p>Temperature stability: <math>\leq 0.1^{\circ}</math> C / h</p>
Built-in Generator	eluent	<p>The eluent generator only needs pure water, and can produce eluent with required concentration by controlling current, so as to realize equal and gradient eluent without using degassing tube and capture column.</p> <p>Eluent: KOH/NaOH/LiOH/MSA</p> <p>Eluent Concentration Range: 0.1-100 mM</p> <p>Concentration Increment: 0.1mM</p> <p>Flow Range: 0.1-5.0mL/min</p> <p>Operating Pressure Range: 5-35MPa</p>
Vacuum degasser		<p>The vacuum pump continuously vacuumizes the vacuum chamber instead of intermittently. The vacuum degree in the vacuum chamber remains constant, and the gas dissolved in water can be effectively removed when the liquid passes through the vacuum chamber.</p> <p>Degassing Efficiency: 90% degassing at 1.0ml/min</p> <p>Degassing Volume: 7.5mL</p>

Gas-liquid Separator	<p>The gas-liquid separator can remove most of the large bubbles entering the flow path, and the operation of the instrument is more stable.</p> <p>Volume of gas-liquid separator: <math>\geq 6\text{ml}</math></p>
Mobile Phone APP	<p>The status parameters of the instrument can be viewed and set remotely through app, and the instrument can be controlled and operated.</p> <p>Message Push and Control Delay: <math>&lt;1\text{s}</math></p> <p>Storage Time of Device Log: 7 days</p> <p>App Access Response Time: <math>&lt;10\text{ms}</math></p>
LCD Touch Screen	<p>The 10inch large LCD touch screen can control the components of the chromatograph pump, suppressor, column heater, the conductivity detector, eluent generator and other parts, and also can send the operation information to the operator in real time. It greatly improves the human-computer interaction ability and provides great convenience for the experimental personnel.</p>
Autosampler (Optional)	<p>The autosampler can continuously complete the injection without manual duty, which can effectively save labor. The consistency of injection batch is high, and the data is more accurate.</p> <p>Vials: 120×2mL (Default configuration)</p> <p>Max Injection Volume: 1000<math>\mu\text{L}</math></p> <p>Injection Method: Full loop / partial loop / micro injection</p> <p>Repeatability: <math>\text{RSD} \leq 0.3\%</math></p> <p>Dual channel autosampler, one injector supports two channels of cation and anion simultaneously.</p>
Power Supply	320W
External Size(W*L*H)	580*487*635 mm
Weight	52 Kg

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