

# LIQUID CHROMATOGRAPHY

## CODE HLC-3000

ANALYSIS METHODS AND CONFIGURATIONS CAN BE CUSTOMIZED ACCORDING TO INSPECTION REQUIREMENTS



### Ultraviolet-Visible detector (included)

- Highly accurate, self-calibrating analog-to-digital converter and optical path system improves the signal-to-noise ratio of the detector
- With automatic wavelength calibration and the ability to optimize the deuterium lamp energy
- Digital and analog signal output at the same time, more practical
- Dual wavelength simultaneous detection for more accurate results

### Auto-sampler (included)

- The patented inlet design and unique cleaning method ensure ultra-low sample residue
- The cooling function of the sample tray makes the sample analysis process more stable
- Support high-speed sampling mode, the fastest can be realized within 1s

### High pressure pump (included)

- Patented low-pulsation, high-precision, tandem, dual-plunger, high-pressure, constant-current pump designed to minimize pulsation
- The special seal design makes the maximum pressure resistance of the pump up to 90 MPa, which meets the requirements of many kinds of analytical experiments
- Multi-stage microporous mixing with labyrinth design mixer for more uniform mixing and lower pulsation

- Widely used in drug discovery, food safety, environmental testing, life sciences, etc.
- Various temperature control modes of the column temperature chamber make the temperature more accurate
- The auto-sampler has a high-speed injection mode that makes the analysis process faster
- The cooling function ensures the stability of the analysis process even for biological samples
- EMC electromagnetic compatibility function can avoid other electromagnetic interference, and makes the instrument more stable

### STANDARD DELIVERY

High pressure pump	1pc
Auto-sampler	1pc
Column oven	1pc
Ultraviolet-Visible detector	1pc
Solvent bottle tray	1pc
Sample cell	1pc
Chromatography data workstation	1set
Column (5um 4.6×250mm)	1pc
Mobile phase solvent bottles	2pcs
Computer	1pc
Consumables and spare parts	1set*

\*Including common consumable tools such as connecting pipes and pipe joints

### OPTIONAL ACCESSORY

Name	Code	Analysis material
Evaporative light-scattering detector (ELSD)	HLC-D-ELSD	sugars, alcohols, amino acids, etc.
Fluorescence detector (FLD)	HLC-D-FLD	analysis of compounds with fluorescent properties, such as pesticide residues, veterinary drug residues, certain biomolecules, etc
Photo-diode array detector (PDA)	HLC-D-PDA	proteins, nucleic acids and other biomolecules
Refractive index detector (RID)	HLC-D-RID	sugars, polymers, etc.



evaporative light-scattering detector  
(optional)



fluorescence detector  
(optional)



photo-diode array detector  
(optional)



refractive index detector  
(optional)

## SPECIFICATION

Detector	Analysis material	organic compounds, inorganic ions, biomolecules (such as DNA, proteins) with UV-visible absorption properties
	Type	Ultraviolet-Visible detector
	Wavelength range	190~800nm
	Baseline noise	$\leq 1.5 \times 10^{-5}$ AU
	Baseline drift	$\leq 2.0 \times 10^{-4}$ AU/h
	Light source	deuterium lamp, tungsten lamp
	Bandwidth	8nm
	Minimum detection concentration	$\leq 1.0 \times 10^{-9}$ g/mL
	Linear range	$\geq 2.5$ AU
	Wavelength accuracy	$\pm 1$ nm
	Wavelength repeatability	$\leq \pm 0.2$ nm
	Detection cell temperature control	5-55°C, setting step 0.1°C
	Detection cell optical range	10nm
Detection cell pressure	$\leq 0.1$ Mpa	
High pressure pump	Pump type	binary high pressure constant current pump
	Gradient mixing accuracy	$\pm 0.5\%$
	Gradient mixing precision	$\leq 0.1\%$
	Flow range	0.001~10.000mL/min
	Maximum working pressure	90Mpa
	Flow stability	$\leq 0.06\%$
	Gradient composition ratio	0~100%, programmable range
	Pressure pulsation	$\leq 0.1$ Mpa
Auto-sampler	Temperature control range	4~40°C
	Special function	empty bottle detection and false tie alarm
	Injection method	full loop injection, lossy injection, lossless injection
	Input range	0~100 $\mu$ L
	Vial quantity and specification	210th (1mL vial) 120th (2mL vial) 72th (4mL vial) double 96-well plate (support base magnetic plate option)
	Input residue	<0.002%
	Sample repeatability	<0.03%
Feed rate	support high-speed sampling mode, the fastest can realize 1s sampling	
Column oven	Temperature range	heating mode: 10~85°C cooling mode: 4~35°C smart mode: 4~85°C
	Heating method	pall paste element plus air circulation for temperature control
	Temperature accuracy	$\pm 0.1$ °C
	Optional valves	optional 2 six-position seven-way valves or 2-position 6-way valve or 2-position 10-way valve
Temperature control accuracy	$\leq 0.1$ °C	
Power supply	110~220V, 50/60Hz, 1400W	
Dimensions (L×W×H)	600×540×540mm	
Weight	75kg	

# SOFTWARE (INCLUDED)

## Safety

The screenshot shows two configuration pages. The top page has a red box around the 'Method' dropdown menu. The bottom page has a red box around the 'Method' dropdown menu and the 'Report' section.

## Efficient

The screenshot shows a chromatogram with several peaks. Below it is a table with columns for 'Time', 'Area', 'Height', 'Width', 'Retention', 'Concentration', 'Signal', 'S/N', 'Peak ID', 'Sample Name', 'Injection Volume', 'Injection Concentration', 'Injection Date', 'Injection Time', 'Injection Location', 'Injection Operator', 'Injection Status', 'Injection Comment', 'Injection Method', 'Injection Parameters', 'Injection Results', 'Injection Summary', 'Injection Details', 'Injection History', 'Injection Log', 'Injection Report', 'Injection Audit', 'Injection Trace', 'Injection Path', 'Injection Route', 'Injection Network', 'Injection System', 'Injection Environment', 'Injection Conditions', 'Injection Parameters', 'Injection Results', 'Injection Summary', 'Injection Details', 'Injection History', 'Injection Log', 'Injection Report', 'Injection Audit', 'Injection Trace', 'Injection Path', 'Injection Route', 'Injection Network', 'Injection System', 'Injection Environment', 'Injection Conditions'. A red box highlights the 'Export to PDF' and 'Export Data' options in the bottom right.

## Complete

The screenshot shows the 'System' menu with 'GLP Options' selected. The 'GLP Options' dialog box is open, showing several checked options: 'Allow chromatogram GLP pattern', 'Chromatogram is not generated after collection', 'Disable the user name list in the login dialog box', and 'Ask for reason of file change'. There is also an unchecked option: 'The reasons for the file change must not be empty'. The 'OK' and 'Cancel' buttons are at the bottom.

## Convenience

The screenshot shows the 'Sign' dialog box. It has fields for 'Select User', 'Description', 'Sign Paper', 'Text', and 'Password'. There are 'OK' and 'Cancel' buttons. A red box highlights the 'OK' button.

## Traceable

The screenshot shows a data table with columns for 'Time', 'Area', 'Height', 'Width', 'Retention', 'Concentration', 'Signal', 'S/N', 'Peak ID', 'Sample Name', 'Injection Volume', 'Injection Concentration', 'Injection Date', 'Injection Time', 'Injection Location', 'Injection Operator', 'Injection Status', 'Injection Comment', 'Injection Method', 'Injection Parameters', 'Injection Results', 'Injection Summary', 'Injection Details', 'Injection History', 'Injection Log', 'Injection Report', 'Injection Audit', 'Injection Trace', 'Injection Path', 'Injection Route', 'Injection Network', 'Injection System', 'Injection Environment', 'Injection Conditions', 'Injection Parameters', 'Injection Results', 'Injection Summary', 'Injection Details', 'Injection History', 'Injection Log', 'Injection Report', 'Injection Audit', 'Injection Trace', 'Injection Path', 'Injection Route', 'Injection Network', 'Injection System', 'Injection Environment', 'Injection Conditions'. A red box highlights the 'Export' button at the bottom right.