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High Performance Liquid Chromatography

www.yocellbio.com

About Us

YOCELL Biotechnology is your trusted partner in the field of bioprocess.

YOCELL has a team of energetic young scientists and engineers. From initial

R&D to production, we are committed to providing the most reliable solutions for biotechnology scientists and engineers around the world. Accepting the challenges of continuous innovation in biotechnology and solving problems from multiple perspectives are the most impressive qualities of the team.

Pragmatic

Always listen carefully to your needs and provide the most competitive solutions.

Efficient

Respond quickly and have a strong supply chain to ensure fast delivery.

Focus

Continuous attention and passion for innovation in the field of biotechnology control.

S6000 High Performance Liquid

Optimized Piping Design Upgraded Hardware Configuration

Variety of Detectors with High Performance
The sensitivity of DAD detector reaches the level of UV detector, which can meet the needs

6310 Column Oven
Mobile phase preheating and Peltier temperature control unit can meet different application scenarios and achieve precise temperature control in a wider range

6210 Sample Management System
Optimized hardware design combined with two-way cleaning methods and three standard injection methods to meet different injection requirements and effectively reduce sample residues

6110 Pump System
Pump head confluence, high-pressure mixing technology, fully combining the advantages of binary high-pressure gradient system and quaternary low-pressure gradient system; unique high-frequency mixing mode, excellent gradient reproducibility can be achieved without mixer conditions

6110 Pump System

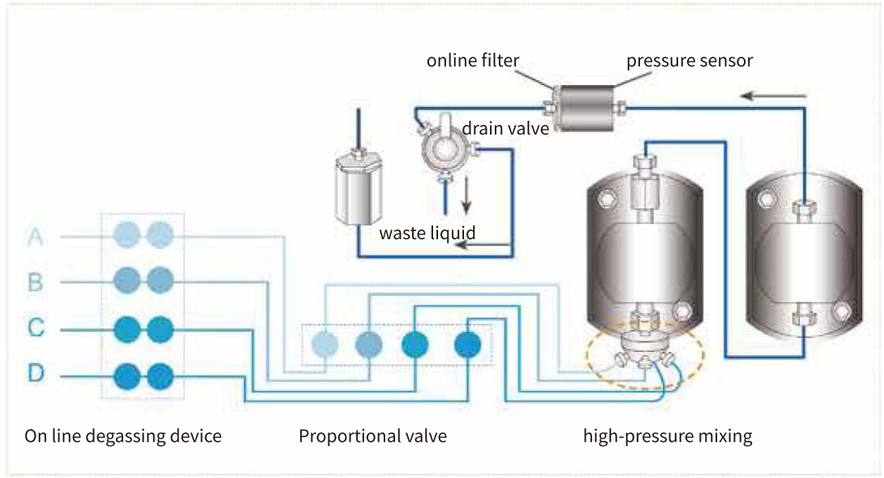
More stable More reliable More accurate

6110 pump adopts a new completely design, breaks through the traditional concept of liquid chromatography, integrates the advantages of binary high-pressure system and quaternary low-pressure system, abandons their respective shortcomings, and provides a more reliable guarantee for your experimental results

- Pump head confluence high-pressure mixing
- HFM high frequency hybrid mode
- High speed feedback and real-time control
- Special cam curve design
- Two stage series valve core
- Easy maintenance
- Excellent retention time repeatability

Pump head confluence and high-pressure mixing

- The gradient mixing point is located at the inlet valve of the pump head, and the lag volume of the system is greatly reduced
- The solvent is mixed under high pressure to effectively avoid the generation of bubbles

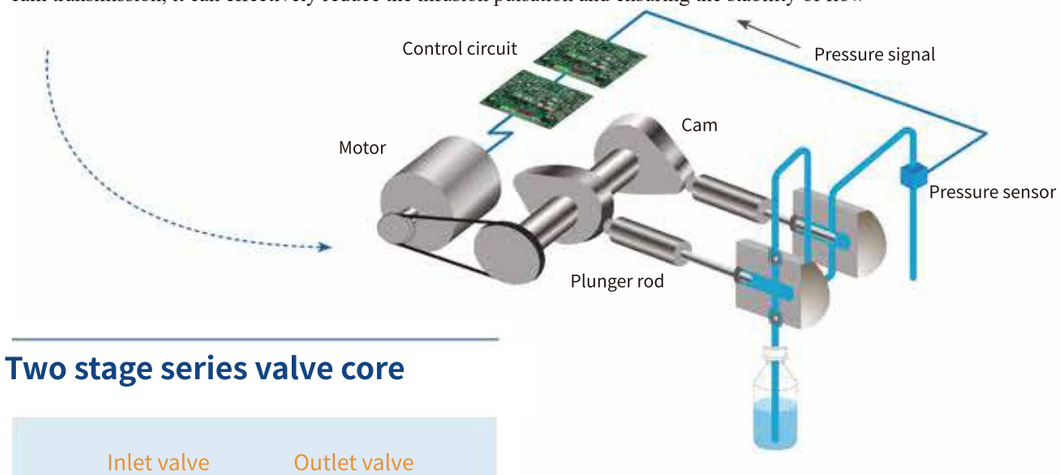


HFM high frequency hybrid mode

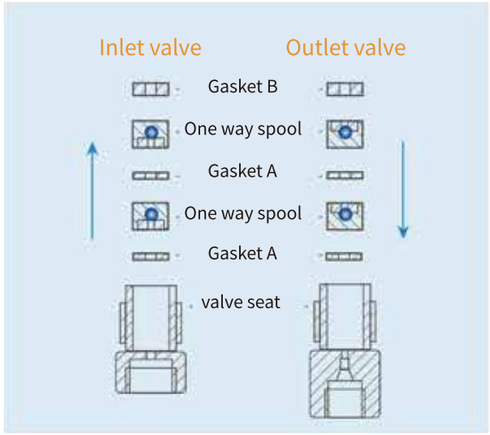
- By increasing the switching frequency of proportional valve, the mixing accuracy of mobile phase is improved
- The sufficient mixing of solvent can be ensured without large volume mixer, which greatly reduces the system delay volume and baseline noise of the system

High speed feedback and real-time control & special cam curve design

- Through real-time monitoring the pressure of the system, adjusting the motor speed, and equipped with special curve cam transmission, it can effectively reduce the infusion pulsation and ensuring the stability of flow



Two stage series valve core



easy maintenance

The consumbles can be replaced directly in front of the pump

Excellent retention time repeatability

- sample: alkylphenol compounds (9 components)

Peak number	sample	RT (min)	RT(%RSD)
1	acetanilide	3.220	0.03
2	acetophenone	5.397	0.04
3	phenylacetone	7.328	0.03
4	phenylbutanone	9.006	0.02
5	benzophenone	3.593	0.02
6	phenylpentanone	10.642	0.02
7	benzophenone	12.214	0.02
8	phenylheptanone	13.679	0.02
9	octyl benzene	15.026	0.02

- Chromatographic conditions

Sample: alkylphenol compounds (9 components)

column: C18 4.6x150mm(5μm)

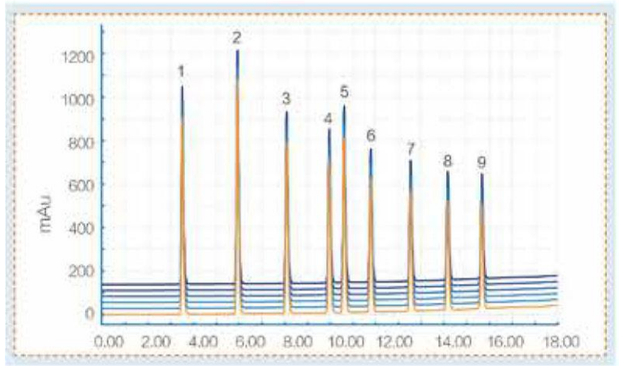
temperature: 40℃

Mobile phase: A water + 0.1% trifluoroacetic
B acetonitrile + 0.1% trifluoroacetic acid acid

HFM Gradient mode: high frequency mode HFM

Gradient: A:B(min)=65:35(0)→5:5(15)→
5:95(20)→65:35(20.1)→65:35(30)

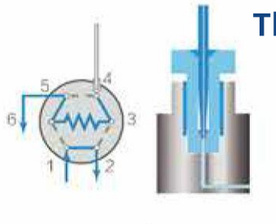
Injection: 10μL(100ppm)



6210 Sample Management System

high precision, low residue

Injection needle structure-1



Injection needle structure-2

The sample carryover: < 0.003%

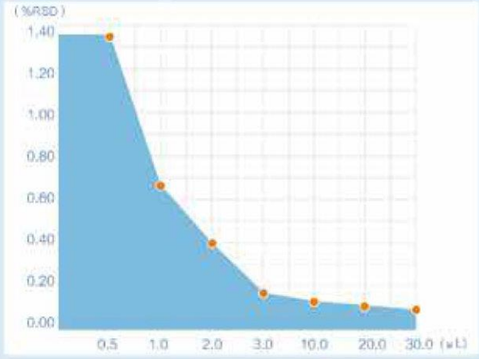
- The innovative injection port design
- Residue flushing pump and two channels of flushing liquid, so that the whole injection system can be fully flushed

High precision injection control

- Precise injection driving unit
- Chromatographic conditions

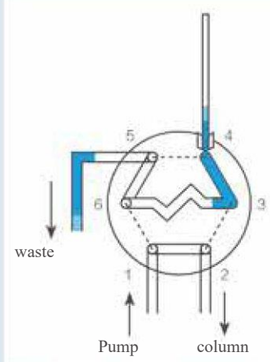
Sample: 60ppm methyl p-hydroxybenzoate (dissolved with 60% methanol)

Flow rate: 1mL/min

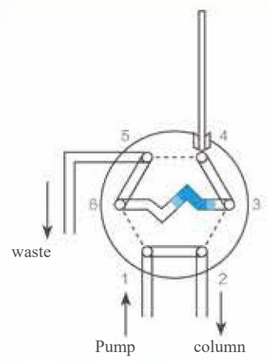


- Provide three injection methods

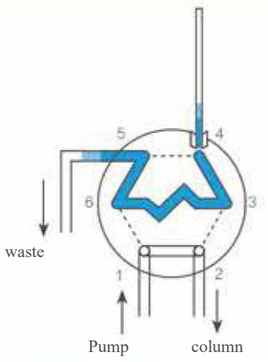
1.Cutting injection



2.All volume injection



3.Full loop injection

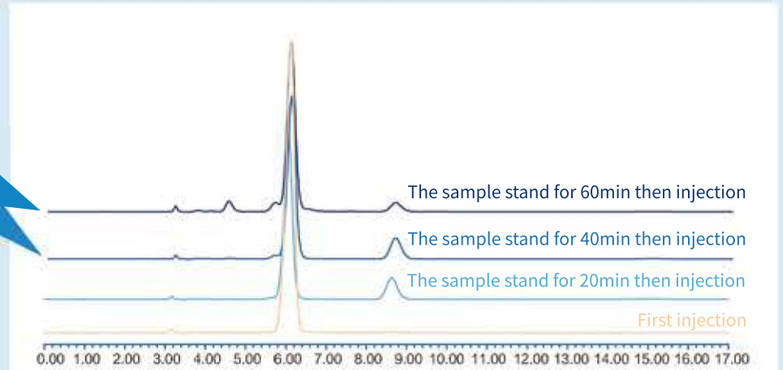


■ air ■ sample

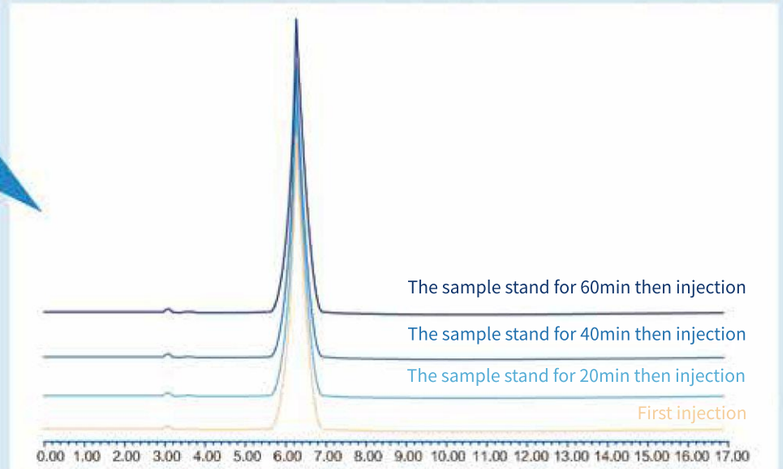
Sampler with thermo rack (option)

- The system uses patented Peltier temperature control module to accurately stabilize the temperature of : set value and ensure the stability of temperature sensitive samples

For temperature sensitive samples, the sample analysis is carried out without the temperature control of the injection system. The increase of external temperature will lead to the generation of impurities, and the impurities will gradually increase and become larger

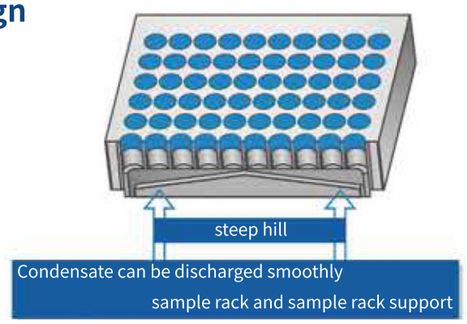


For the same sample, the sample was analyzed at 4 ℃ in the sampling system, and the analysis results did not change with the passage of time.



Humanized sample rack design

The inner part of the instrument is designed to prevent condensation and improve the service life of the instrument

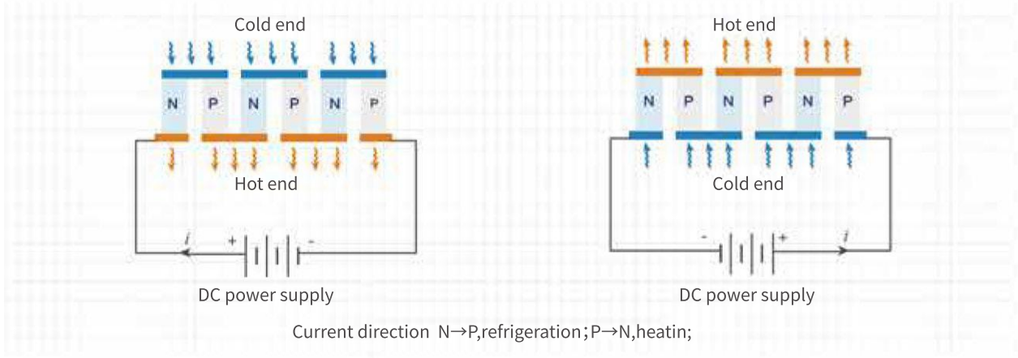


6310 Column Oven

Wider temperature range, more stable and flexible

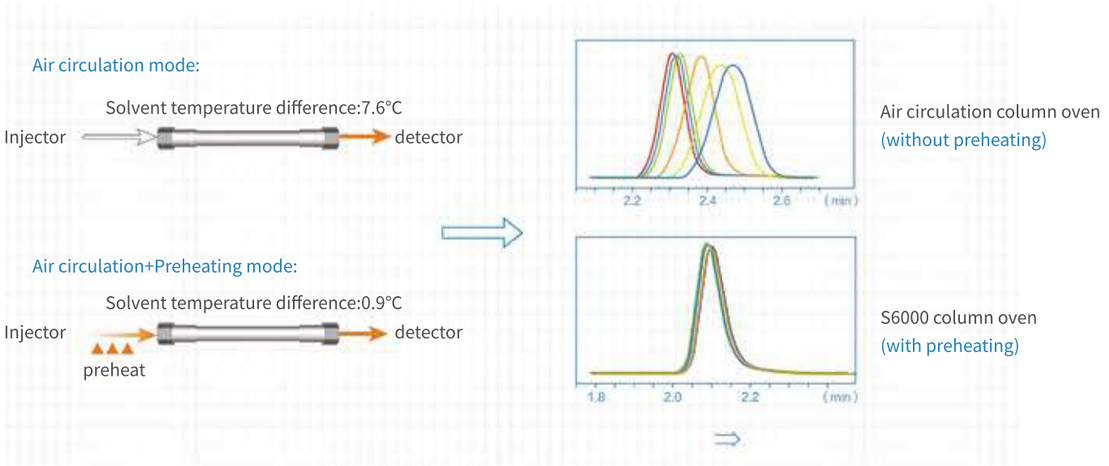
With Peltier effect, the temperature is more stable

- Temperature setting range:1~85 ℃ [minimum unit 1 ℃]
- Temperature control range:[ambient temperature-15]~[ambient temperature+60] ℃



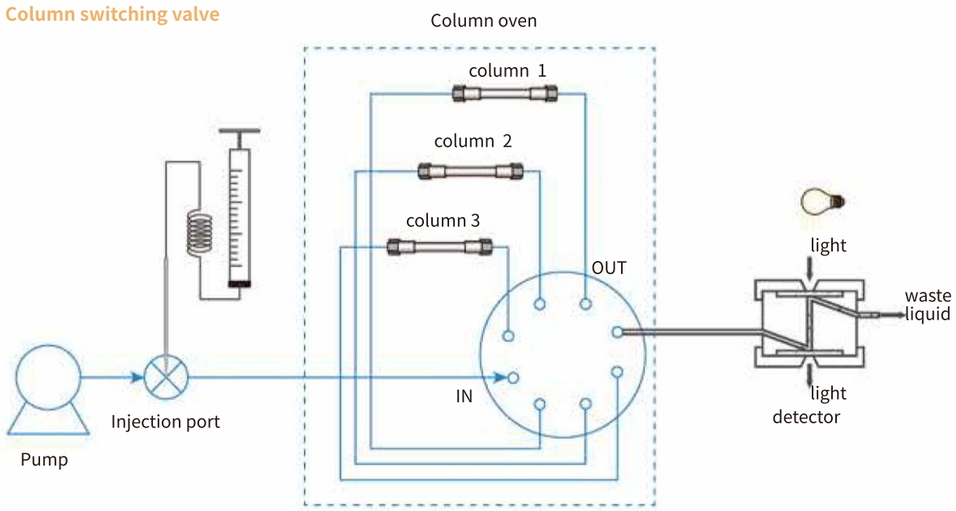
Mobile phase preheating function

- The mobile phase is preheated before entering the column to reduce the interference to the temperature environment in the column and ensure excellent chromatographic peak shape symmetry, sharpness and reproducibility

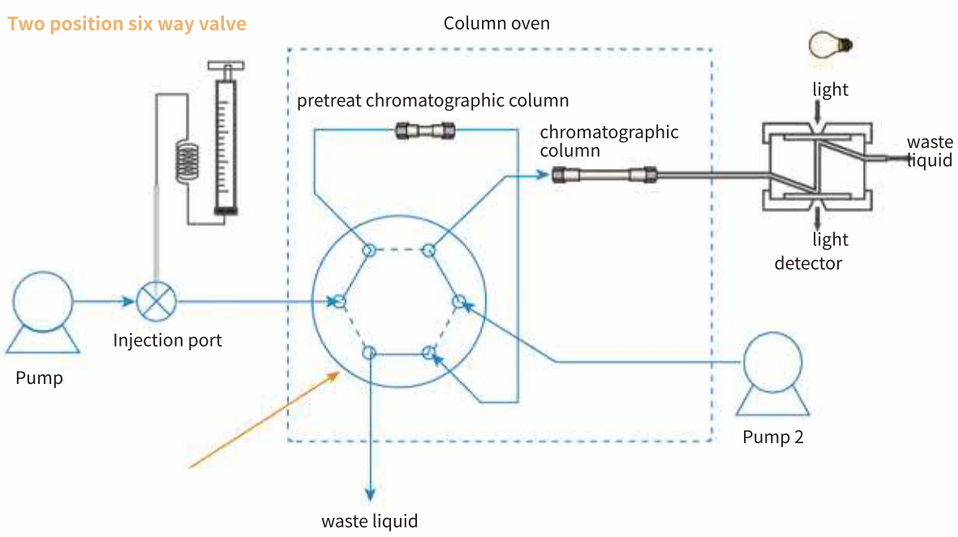


Optional valve

Column switching valve: three chromatographic columns can be placed at the same time. Through the three column switching valve, the flexible switching between chromatographic columns can be realized, which is convenient for method development and column screening

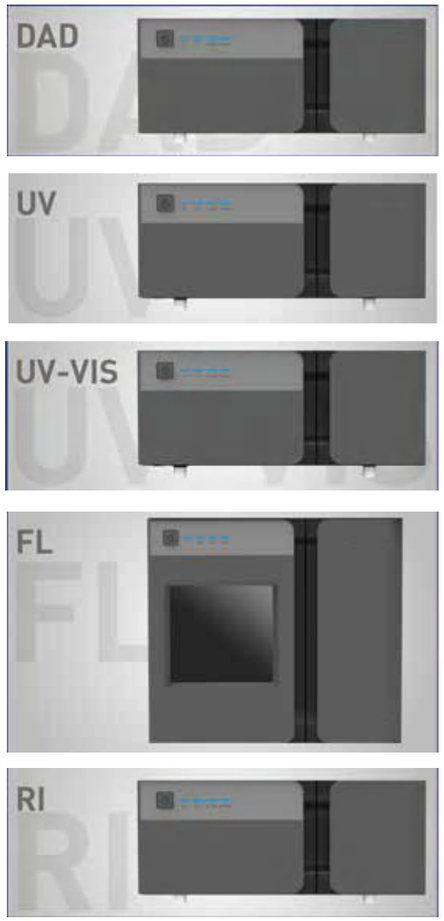


Two position six way valve: it can meet the experimental needs of a variety of chromatographic methods, such as online sample processing, online enrichment, two-dimensional chromatography, etc

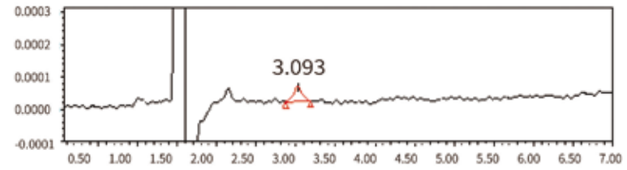


A Variety Of Detectors With Excellent Performance

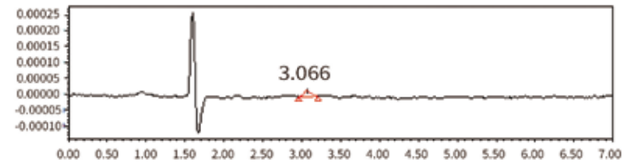
A variety of detectors can be selected to meet the different needs of users



The sensitivity of DAD detector reaches the level of UV detector, which can meet the needs of high sensitivity analysis and purity analysis at the same time



UV detector



DAD detector

detector	RT(min)	Detection level (mg/mL)	Average detection noise(AU)
S6000-UV	3.093	$5X10^{-6}$	$4X10^{-6}$
S6000-DAD	3.066	$2X10^{-6}$	$2X10^{-6}$

S3000 High Performance Liquid Chromatography

3410 UV Detector System

Adopts high-quality optical unit and optimized optical path design, which can provide higher sensitivity and meet the analysis of microamount and trance amount samples.

3310 Column Oven

Mobile phase preheating and Peltier temperature control unit design to achieve more precise temperature control accuracy and wider temperature control range

3210 Sampler System

FTN injection method combined with high-precision syringe drive unit achieves excellent injection reproducibility and reliability of analytical results

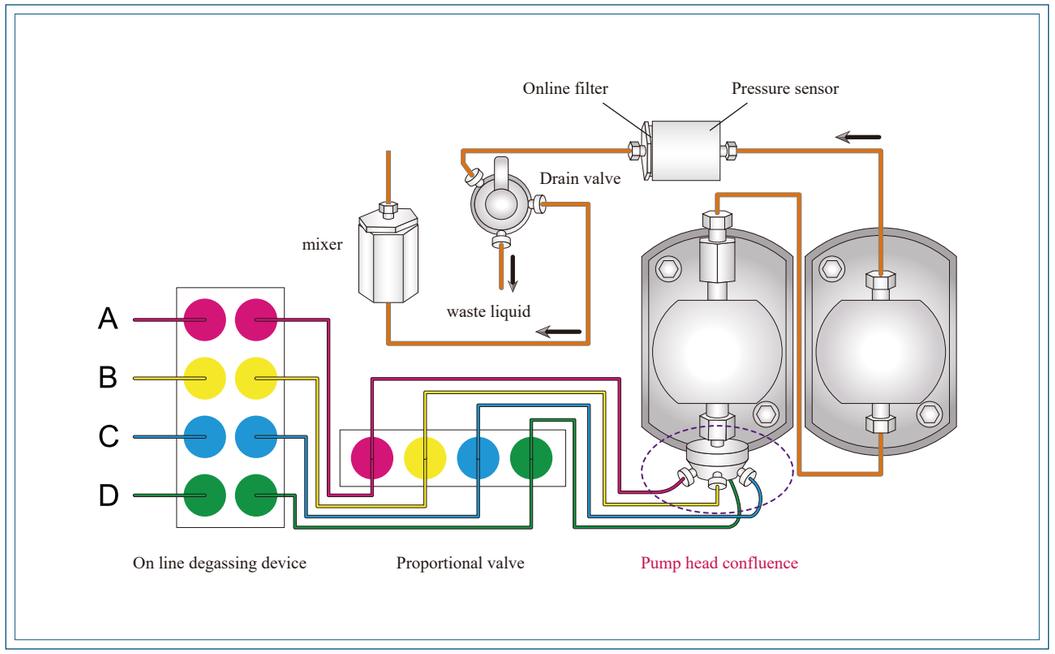
3110 Pump System

Pump head confluence, high pressure mixing technology, quaternary gradient system that fully combines the advantages of binary high pressure gradient system and quaternary low pressure gradient system to achieve precise flow control

3110 Pump System

Higher precision, Lower pulsation and Excellent stability

3110 pump continues the design concept of Acchrom pump system.The purpose is to provide a more reliable guarantee for your experimental results.



Pump head confluence and High-pressure mixing

The gradient mixing point is located at the inlet valve of the pump head, and the volume of the system is greatly reduced.The solvent is mixed under high pressure to effectively avoid bubbles.

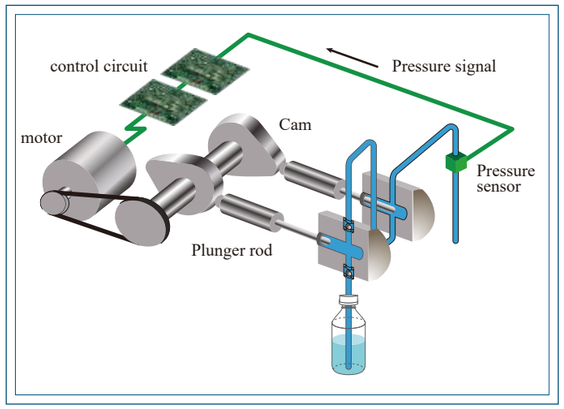
3110 Pump System

Special curve cam design

The special curve cam is used to drive the plunger to make the infusion more stable and lower pulsation.

High speed feedback and real-time control

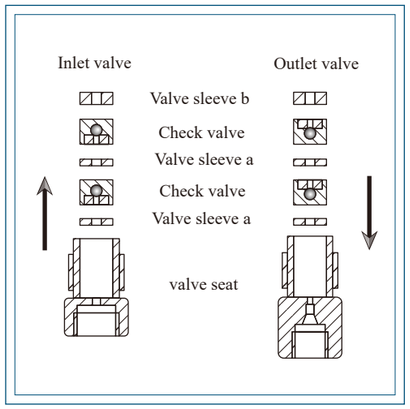
Through real-time monitoring the pressure of the system, adjusting the motor speed, and equipped with special curve cam transmission, the infusion pulsation can be further reduced while ensuring the stability of flow.



Peltier temperature control mode

Cascade inlet and outlet valve core design

The two-stage series valve core of the inlet and outlet valve ensures the stability of infusion and reduces the pulsation of the pump system.



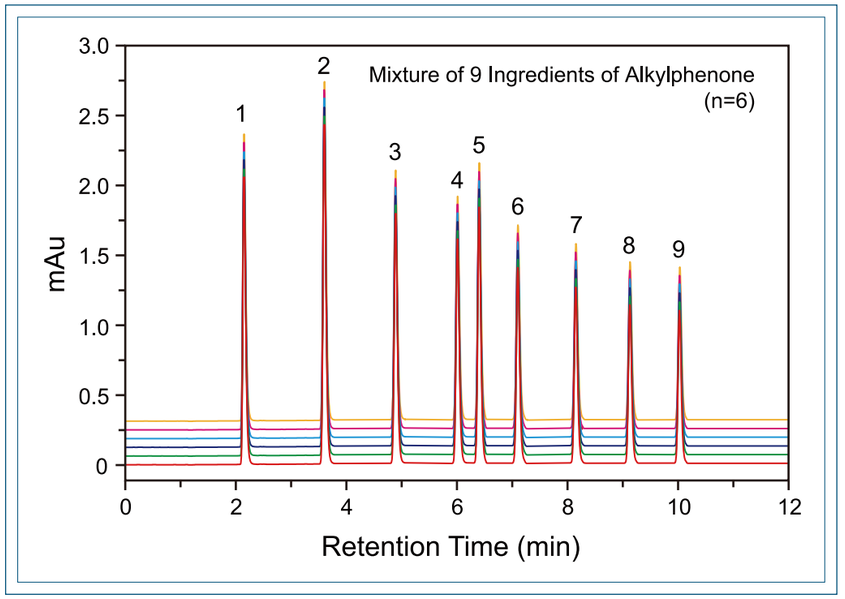
Rich options and easy maintenance

The sealing ring of the pump, the sealing ring of the cleaning device, the one-way valve and the plunger rod can be directly replaced in front of the pump, which is convenient for maintenance. The degassing device and gradient unit are built-in to realize a simple and tight paint appearance

3110 Pump System

Excellent retention time reproducibility

The gradient circulation time of the pump is synchronized with the injection time of the automatic sampler, ensuring excellent reproducibility of the retention time.



Instrument: S3000 HPLC
Mobile phase： Acetonitrile-Water
6-needle injection overlap

Column: Unitary C18 (5um, 4.6 × 150mm)
Detection conditions: UV247nm

Average	retention time	RSD (%)	average peak area	RSD (%)
Acetanilide	2.032	0.076	5309454	0.298
Phenylacetone	3.581	0.096	5537572	0.215
Benzophenone	4.809	0.098	5044686	0.299
Hexanone	6.975	0.082	4021828	0.247

3110 Sampler System

Lower residue, Higher precision and Excellent reproducibility

3210 automatic sampler adopts innovative injection system design and advanced FTN injection mode, which greatly reduces the chance of sample residue, ensures the reproducibility of experimental results. Moreover, this design improves the injection speed and is conducive to high-throughput sample analysis.

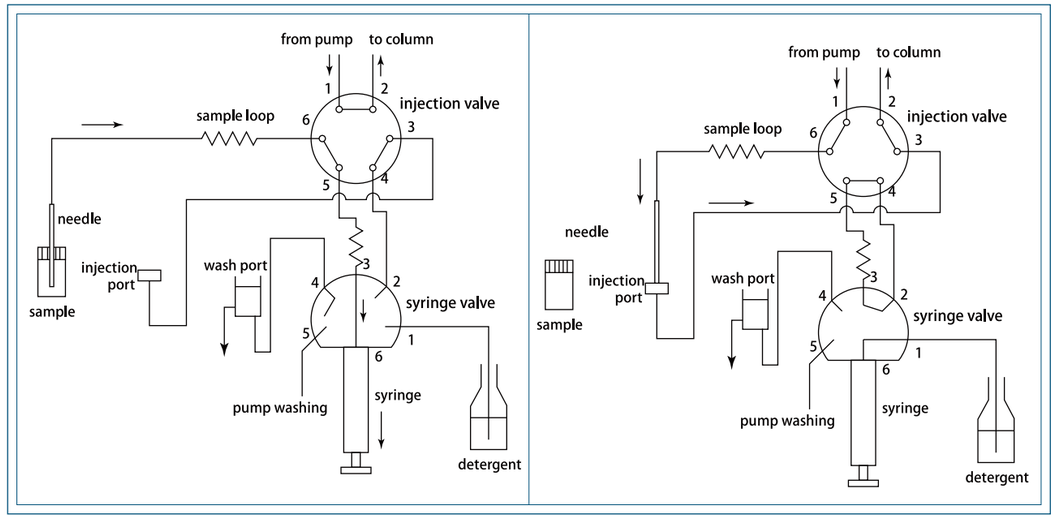
FTN injection with lower residue

Reduce sample waste, reduce sample residue and improve injection reproducibility

FTN injection mode: as a part of the flow path, the injection needle ensures that all samples enter the analysis system, avoids the waste of samples, reduces the residue of samples in the injection system, and improves the reproducibility of injection.

Increasing the injection speed is conducive to high-throughput sample analysis

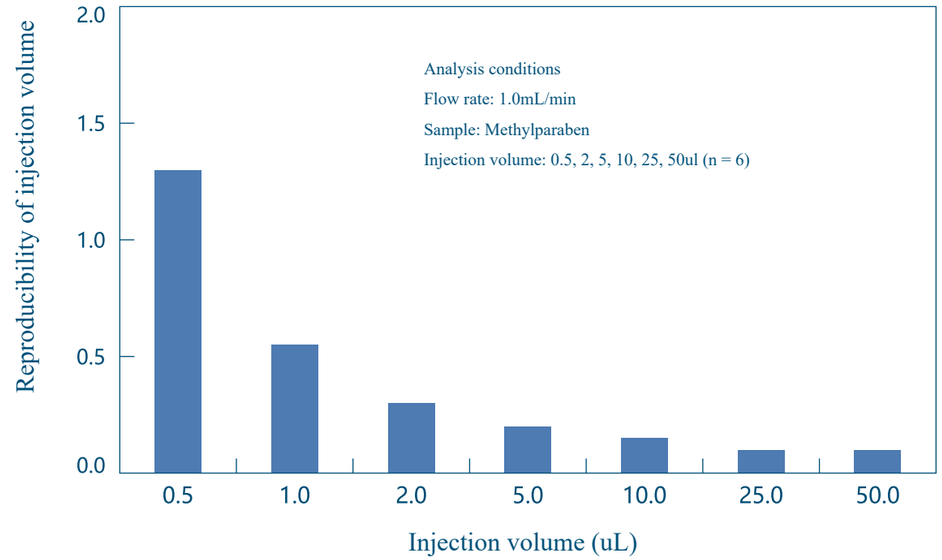
Compared with quantitative loop injection, the FTN injection mode shortens the injection cycle and is conducive to high-throughput sample analysis



3210 Automatic System

Higher precision injection control

The new high-precision syringe driving unit is adopted to achieve excellent reproducibility of injection volume and reliability of analysis results.



Humanized design

Wide window design for easy observation

The wide design of the automatic sampler can easily realize the placement of sample bottles, the observation and confirmation of the actions of syringes and injection needles.

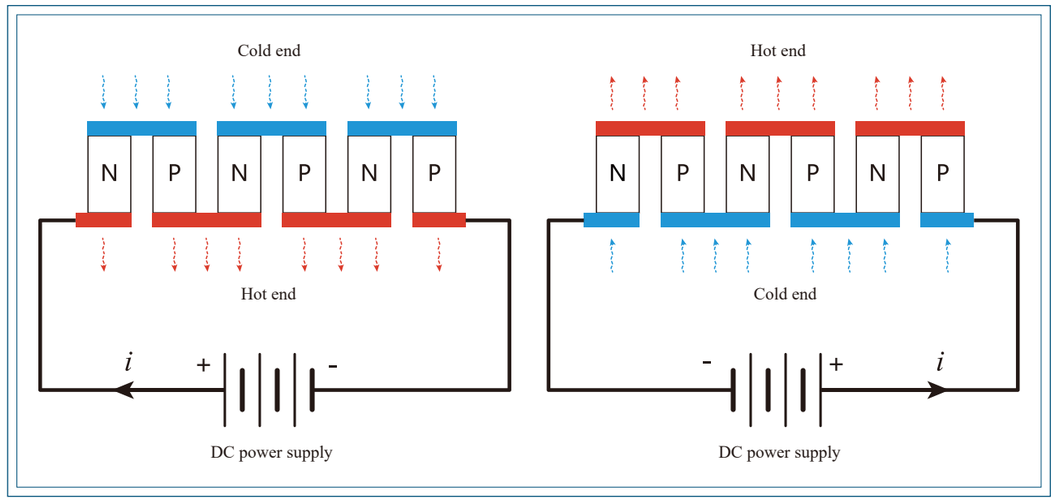
3310 Column Oven

More accurate temperature control accuracy
Wider temperature control range
More flexible column management

The 3310 column oven adopts Peltier temperature control element and specially designed preheating function to ensure the stability of the experimental results.

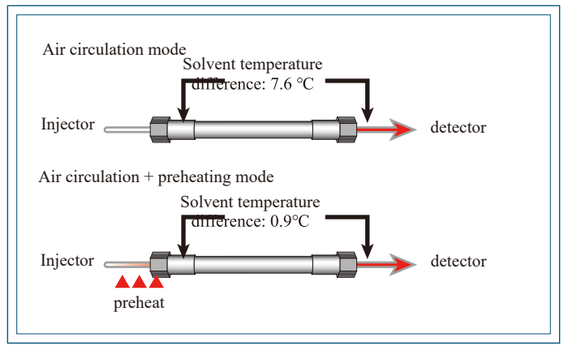
Peltier temperature control mode

It has the function of cooling and heating, providing a wider temperature control range;
Temperature setting range:
1 ~ 65 ℃ (the minimum unit is 1 ℃);
Temperature control range:
[ambient temperature - 15] ℃～ [ambient temperature + 50] ° C.



Mobile phase preheating function

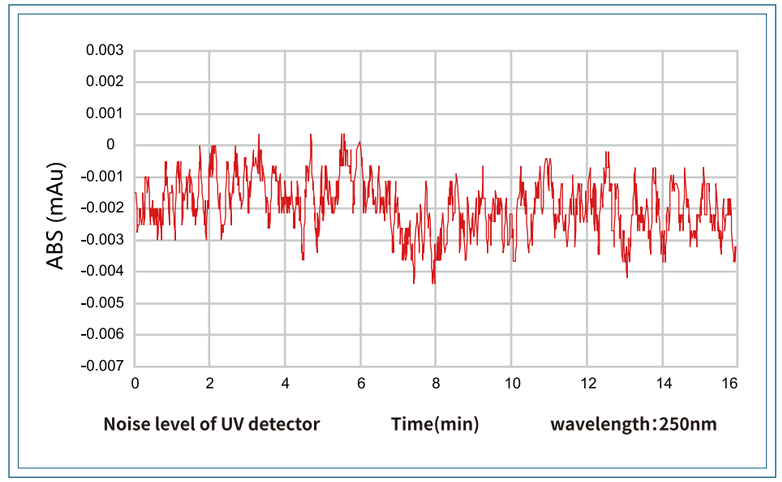
The mobile phase is pre heated before entering the column to reduce the interference to the temperature environment in the column;
The air inside the column oven always circulates to ensure the constant ambient temperature around the column;
Ensure that the internal temperature of the chromatographic column is constant during the experiment

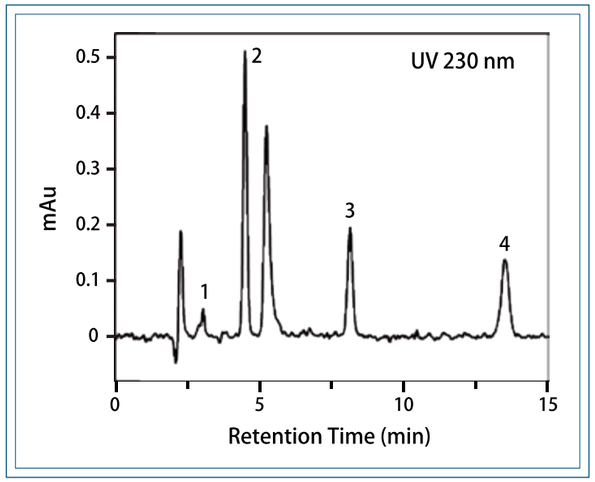


3410 UV Detector System

Lower drift and higher sensitivity

3410 UV detector adopts high-quality optical unit and optimized optical path design, which can provide higher sensitivity and meet the analysis of microamount and trance amount samples.



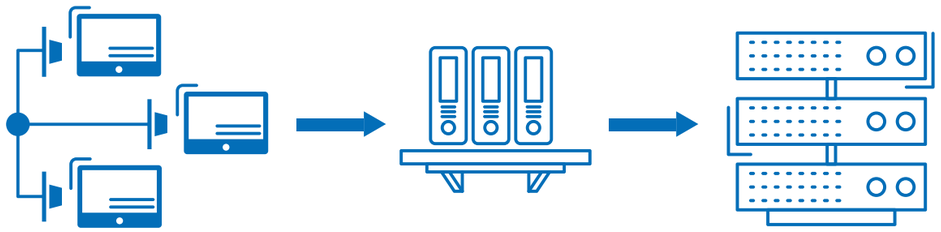


Less energy loss of D2 lamp
Ensure higher detection sensitivity

Peaks:
1. asulam (0.08 μg/mL)
2. thiophanate-methyl (0.08 μg/mL)
3. siduron (0.08 μg/mL)
4. iprodione (0.08 μg/mL)

Chromloong Chromatography Information Management System

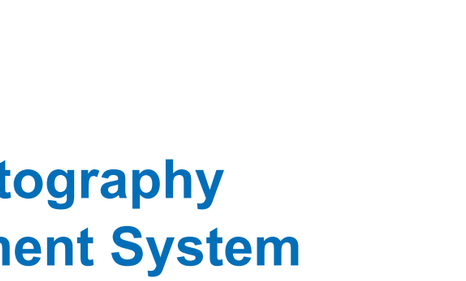
Helping labs run efficiently



lightweight client　　database management　　Networked distributed deployment

- Intuitive interface and simple operation
- Lightweight client that runs faster
- Database management, fast data retrieval
- Network distributed deployment, data processing is more convenient

Full-featured: to meet the various needs of users



- Comprehensive event
- Data comparison between projects
- Data batch function
- Wide range of report templates
- Equipment management, real-time monitoring of instrument performance

Completely independent research and development: to meet individual needs

- Method library: built-in typical projects, standard method library, user method library, spectrum library, etc., to facilitate knowledge accumulation and reuse
- One-click detection: Built-in instrument parameters such as instrument methods, sample sequences, processing methods, and report templates, enabling experiments with one click, streamlining the experimental process and saving experimental operating costs
- Knowledge base: built-in basic theory of chromatography, usage skills, product maintenance knowledge, pharmacopoeia and national standard documents; built-in national standard, pharmacopoeia, industry standard, enterprise standard, etc., can be consulted at any time
- Intelligent diagnosis: When the analysis system fails, diagnose the problem of the instrument and give reasonable solutions at the same time
- Cloud deployment, mobile office: Deploy the entire data result processing, report generation and approval process to the cloud, without being restricted by equipment, time, and location, enabling mobile office

Chromloong Chromatography Information Management System

Completely independent research and development, with completely independent intellectual property rights of the domestic chromatographic information management system

Facilitate experimental data compliance

- Dual database architecture
- Built-in compliance verification files
- Detailed permission assignment design
- Rigorous audit trail design
- Network version strategy, distributed deployment
- Perfect data backup and restore mechanism