优微科技
UVTECH

# 产品手册

PRODUCTS SELECTION

# XPOMATPOH 1411 HPLC

# ХРОМАТРОН 1411 HPLC

## High Performance Liquid Chromatography

# Reliability

With the reliable design and high-quality components, XPOMATPOH 1411 passes the reliability test performed by authority,  ensuring the long-term running in optimum condition.

# Precision

The precision and accuracy of the results are guaranteed with our unique pumping and sampling technology, high sensitivity detector, and powerful data processing software.

# Ease of use

The operation is convenient and efficient with a variety of user-friendly designs in the workstation software.

# Compliance

The workstation software fully complies with FDA 21 CFR part 11 with database mode and data traceability.

## Specifications:

| | |
|---|---|
| Flow rate range | 0.001mL/min~10.000mL/min |
| Pump type | Isocratic(P1), Binary(P2), Quaternary(P4) |
| Maximum pressure | 62MPa |
| Plunger rinsing | Supported |

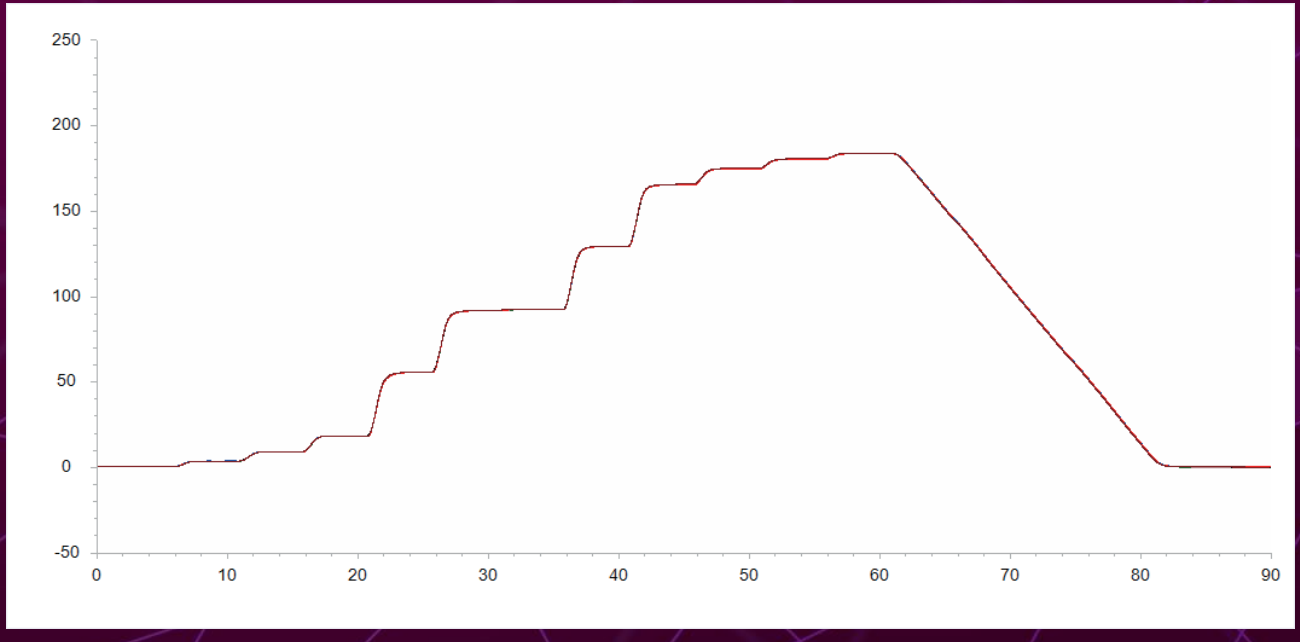
# PUMP


P2 Binary pump

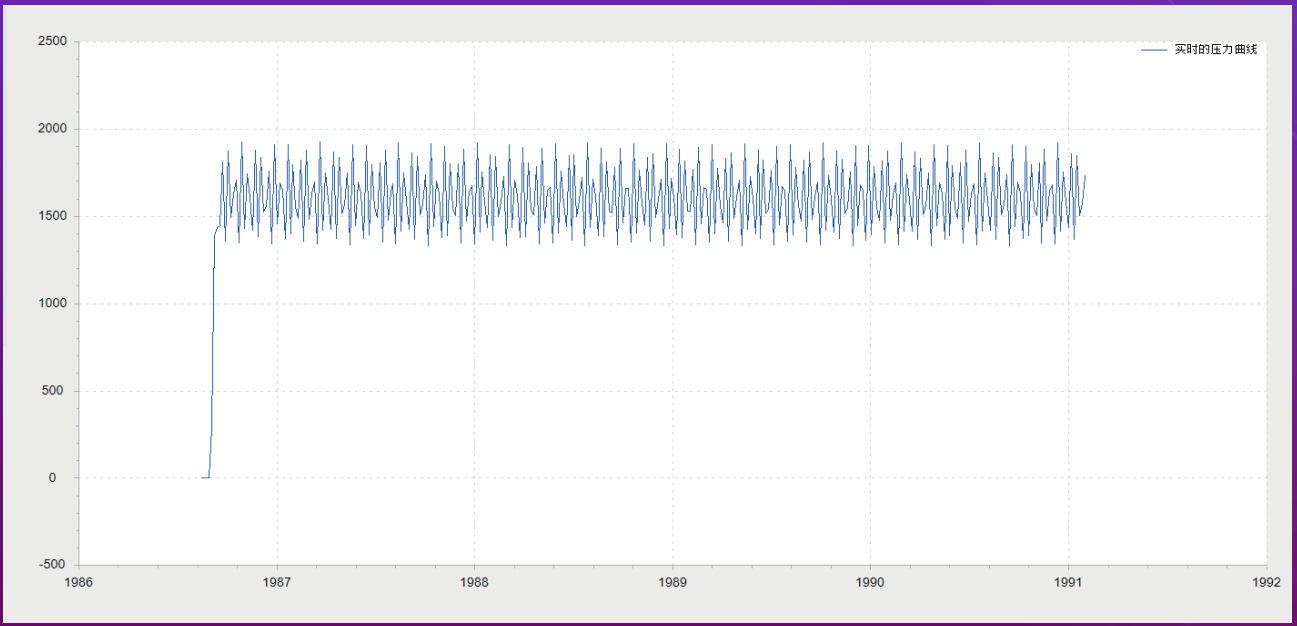
# Precision

## Excellent repeatability

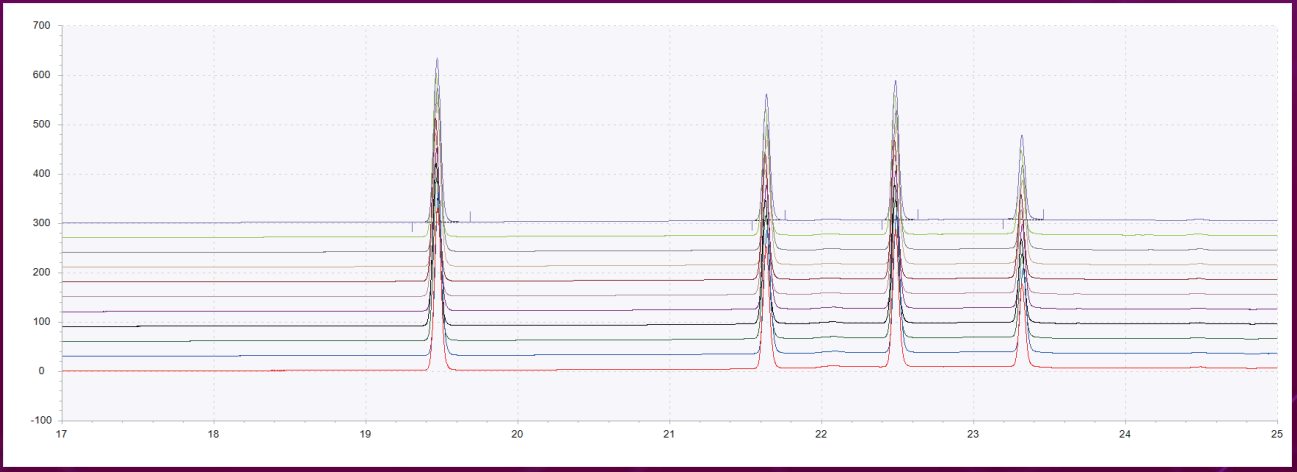
The precise gradient change and retention time are guaranteed with the reciprocating tandem plunger pump and pressure dynamic suppression algorithm. The repeatability of retention time is less than 0.2%.




Gradient test




Pressure fluctuation test




Retention time repeatability test

# Reliability

## The reliable design makes service life longer

### Material

The cam is integrally processed from high-hardness alloy steel and combined with high-frequency heat treatment technology, which makes the surface of the cam is more wear-resistant (the hardness is above 55HRC), and the service life is longer.

### Power

The high-power customized motor, Japanese NSK bearings, and independent air duct make the power and life even better.

### Gearing

Self-lubricating and wear-resistant materials imported from Germany are used for the piston drive mecha- nism. Also, the inner wall rifling design prevents the piston from accidentally locking, making the gearing more reliable.

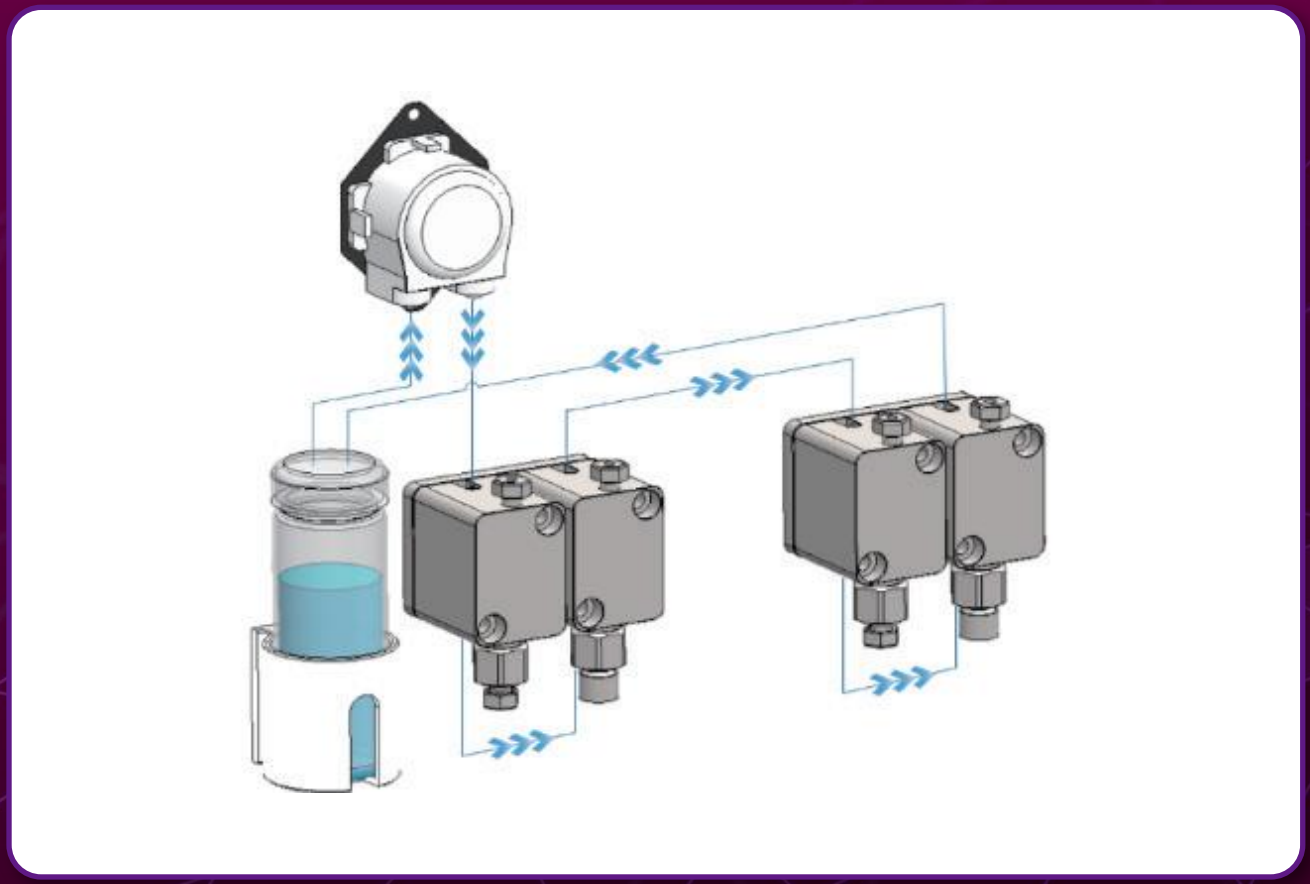
### Plunger

The patented suspended floating plunger(Patent Number: ZL 2020 2 1896102.3 ) can adapt to the working conditions automatically, which is convenient for disassembly and prevents the eccentric wear of the sealing ring effectively. With the special sealing structure and the automatic cleaning of the plunger, the pump seal is more reliable.

# Ease of use

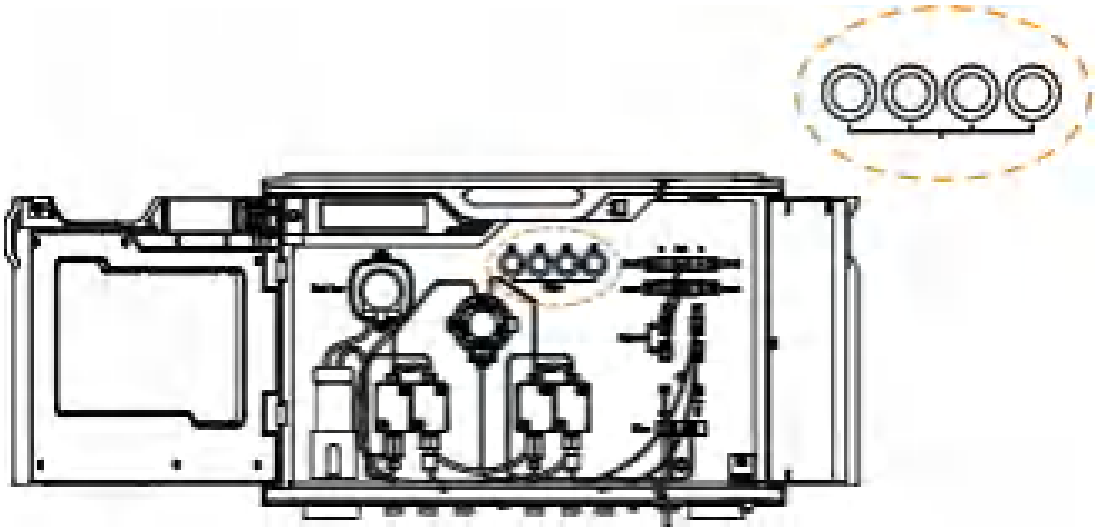
### Equipped with an online automatic rinsing mechanism

When the pump is working, the rinsing pump is automatically turned on and runs periodically, which can effectively prevent the crystallization of buffer salts and the growth of microorganisms, and prolong the service life of the plunger and plunger sealing.



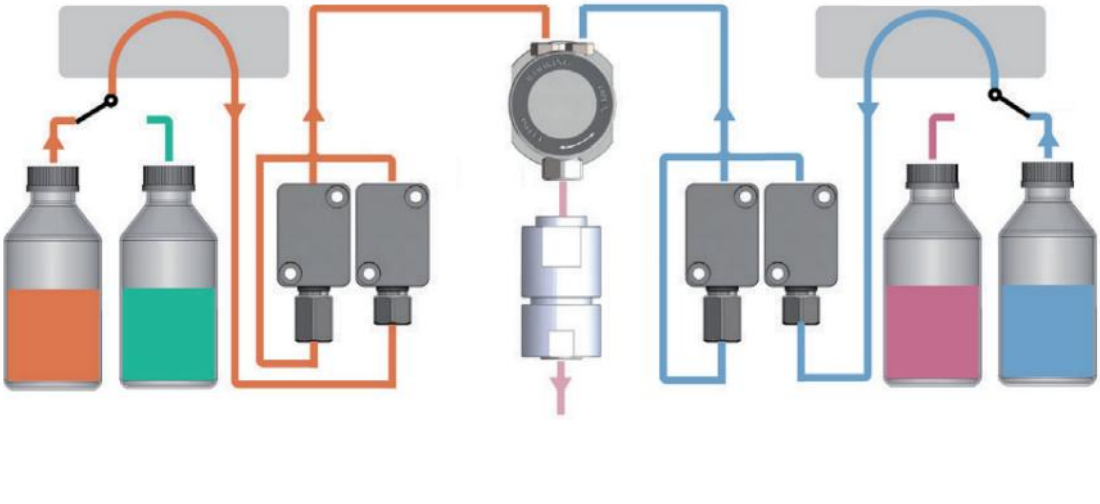
## Easy to purge

Both the workstation and the instrument  panel are equipped with a purging function, making it easier to purge.



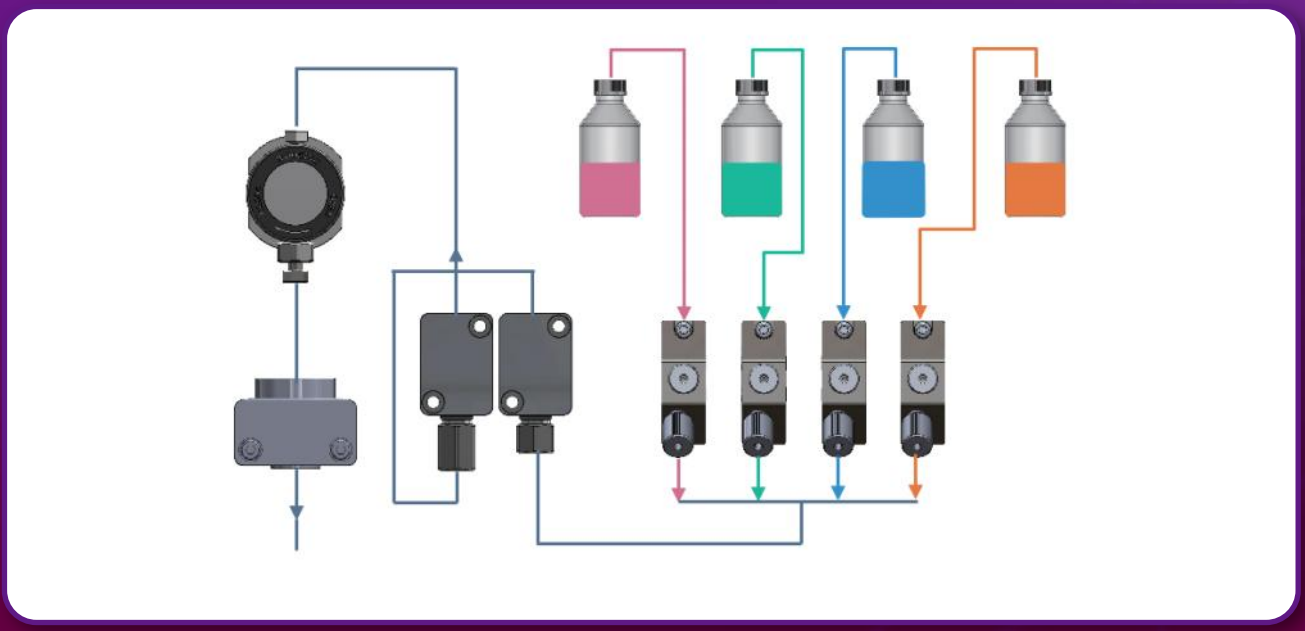
## Intelligent solvent switching to improve efficiency

Equipped with a 4-channel solvent selection valve for binary pump. The solvent can be automatically switched according to the method.



### Independent 4-channel gradient proportioning valve, easy for maintenance

The gradient proportioning valve of the quaternary pump adopts a 4-channel independent design. The intelligent monitoring and diagnosis can realize real-time monitoring and independent replacement of each channel, the whole design can reduce mainte- nance costs effectively.



# Autosampler

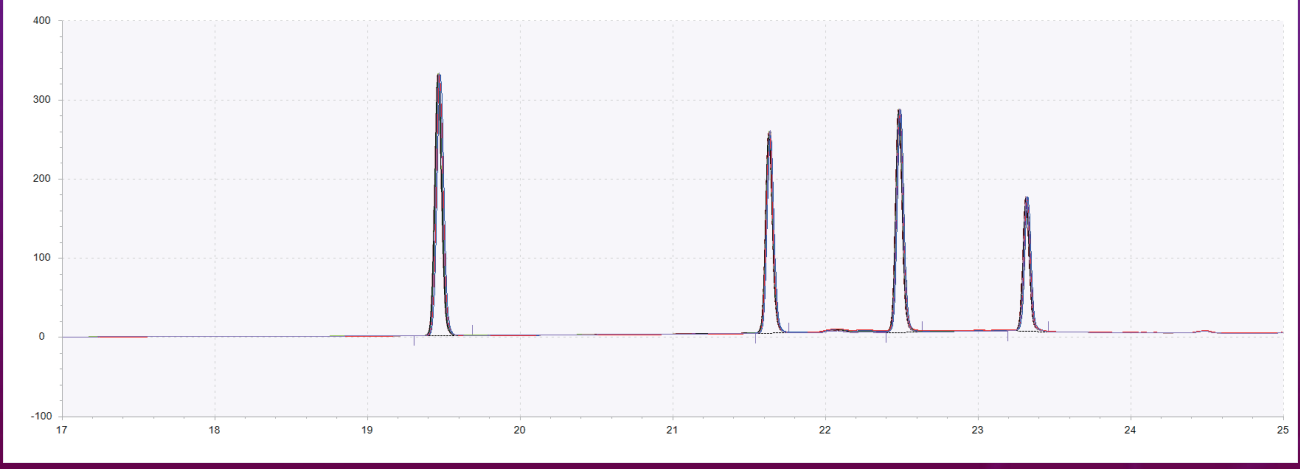
## Specifications:

| | |
|---|---|
| Sample capacity | 108, 2mL(96&384 well plates) |
| Injection range | 0-100μL |
| Injection mode | Low-loss, microliter carrying, full-loop |
| Injection time | Minimum to 5s |
| Carryover | 0.003% |
| Degassing unit | Online degassing(optional) |
| Temperature control | 4-40℃(optional) |

# Precision

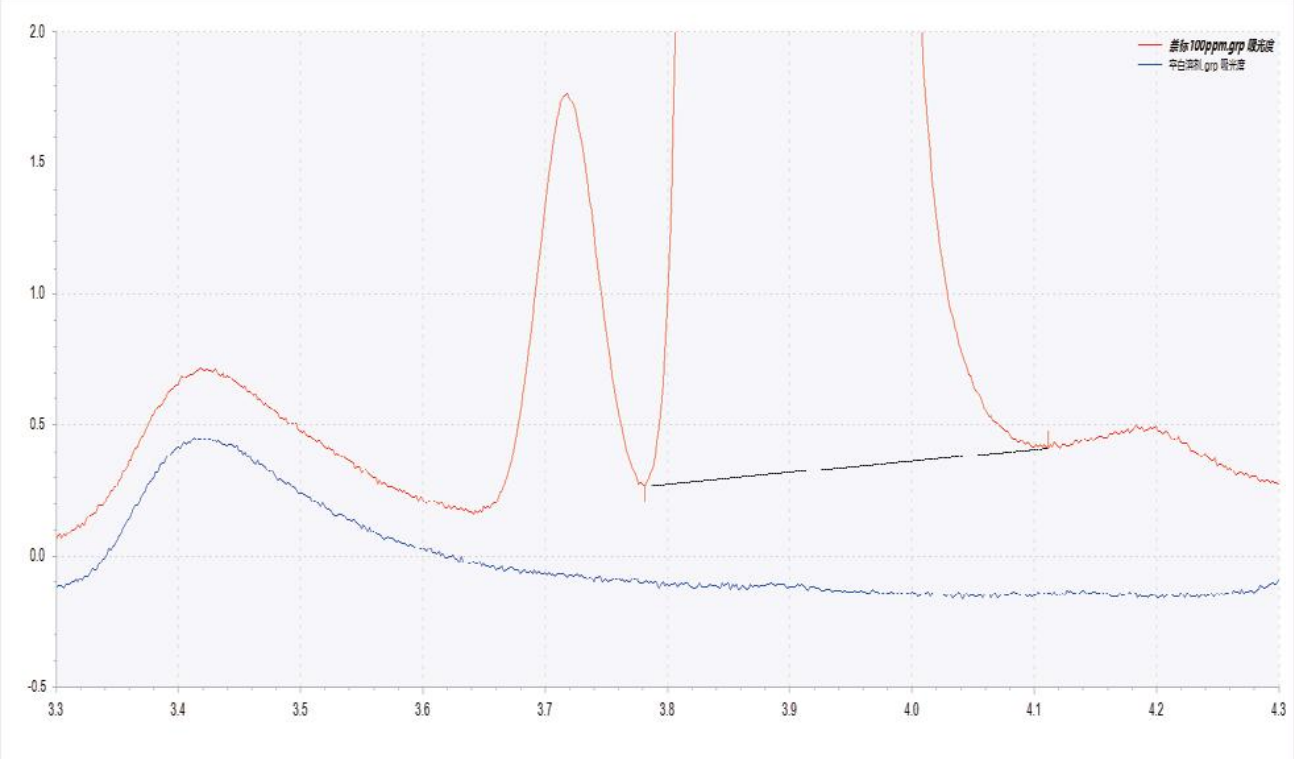
## Precise injection volume

The autosampler adopts a patented integrated constant pressure needle (Patent Number: ZL 2020 2 1159205.1) and a precise syringe pump, which ensures accurate injection volume and excellent linearity, making the results more precise and accurate.



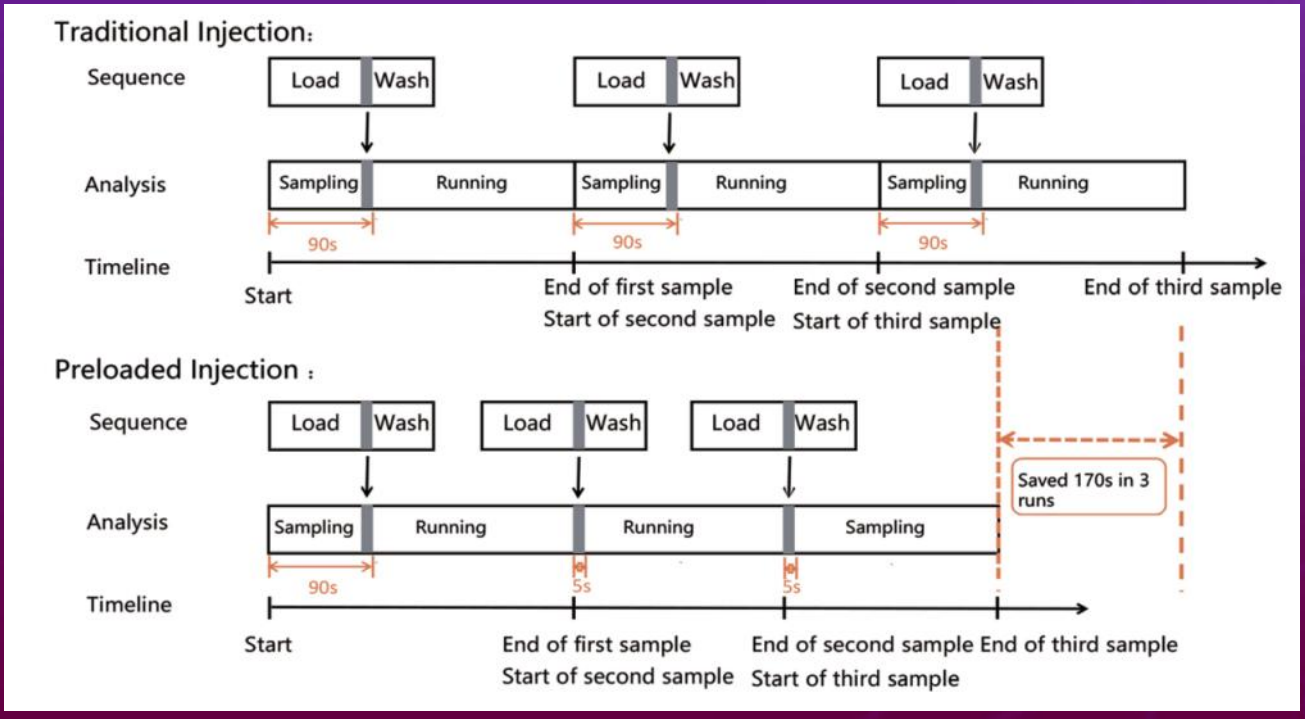

## Low carryover to make results more accurate

The sampling needle is highly polished for the outer surface and passivated for the inner surface, which can effectively reduce the sample residue. The carryover is much lower when needle washing of the outer and inner surfaces are performed.



# Ease of use

Patented preloaded sample injection mode(Patent Number: ZL 2020 2 2977790.2), the injection time can be shortened to 5s, which greatly improves the efficiency.




- A variety of injection modes combined with sample temperature control technology to satisfy different detection needs such as rare and unstable samples
- The dehumidification function is optionally equipped to avoid the generation of condensed water, effectively prevent the sample from being diluted, and ensure accurate results
- The maintenance is more convenient and efficient with the in-front injection valve.

# Column Oven

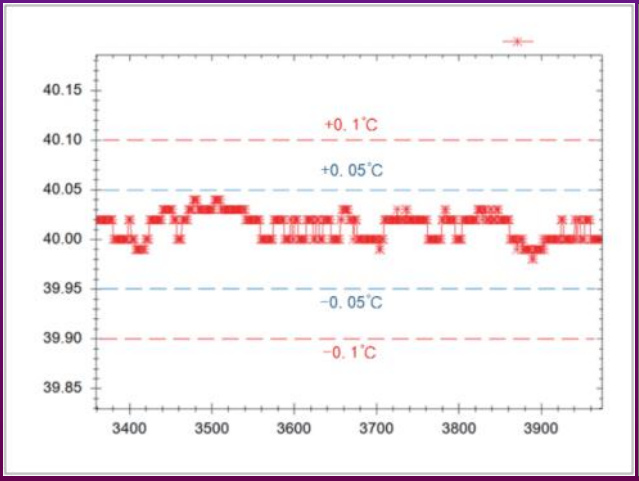
## Specifications:

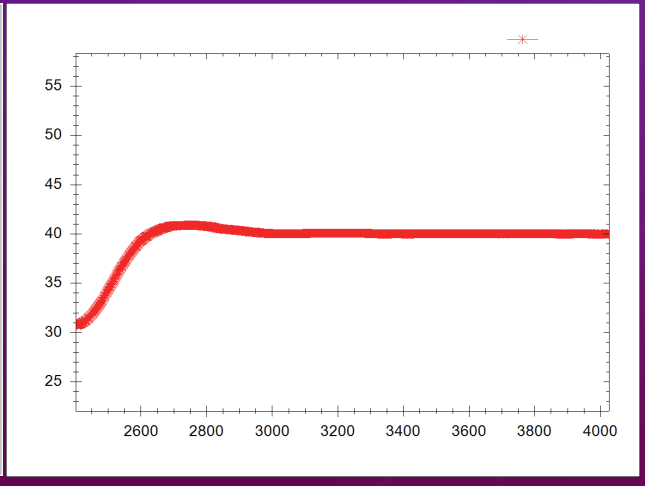
| | |
|---|---|
| Operating principle | Peltier element and fan-based forced air |
| Temperature range | 5 oC above ambient to 85oC<br>10 oC below ambient to 85oC |

# Precision

## Precise temperature control ensures good separation and repeatability

Using fuzzy PID intelligent temperature control algorithm, ban-based air circulation, and multiple insulation layer design, the column temperature is more accurate, stable, and uniform, the temperature stability is±0.1℃ , and the temperature for each analysis are constant and consistent.




# Reliability

## Triple protection, more safe to use

Real-time liquid leak protection, intelligent monitoring of Peltier and cavity temperature, over-temperature power-off protection, triple safety protection designs, effectively prevents accidental liquid leakage and dangers caused by over-heating.

# UV-Vis Detector

## Specifications:

| | |
|---|---|
| Light source | Deuterium(transmission type) and Tungsten lamp |
| Wavelength range | 190-800nm |
| Wavelength accuracy | +/- 1nm |
| Wavelength precision | +/- 0.1nm |
| Linearity | >2.5AU |
| Wavelength calibration | Mercury lamp |

# Precision

## Low LOD

The high-throughput optical path, reference subtraction algorithm, and ultra-precise signal acquisition circuit ensure the detector's excellent sensitivity.

Sample：1.0×10-7g/mL Naphthalene Column: C18, 4.6×250mm, 5μm

Mobile phase: 95:5=Methanol: Water Flow rate: 1.0mL/min

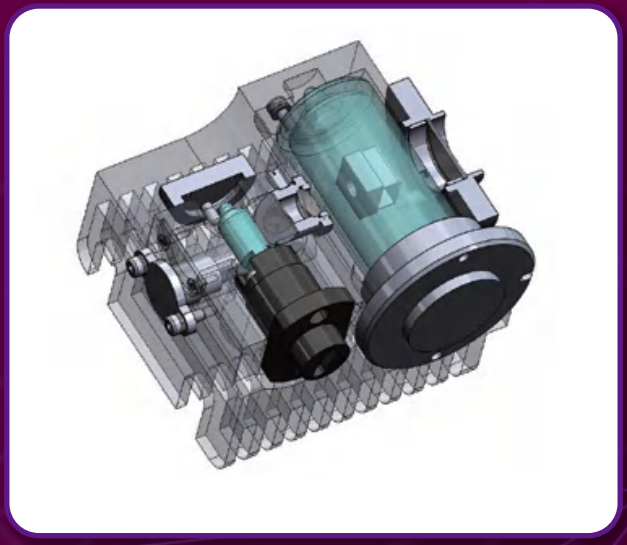
Injection Volume: 20 μL Wavelength: 254nm

## Wide linearity

The UVD covers a wide linear range of 2.5AU, making it easier to analyze high concentration samples

# Reliability

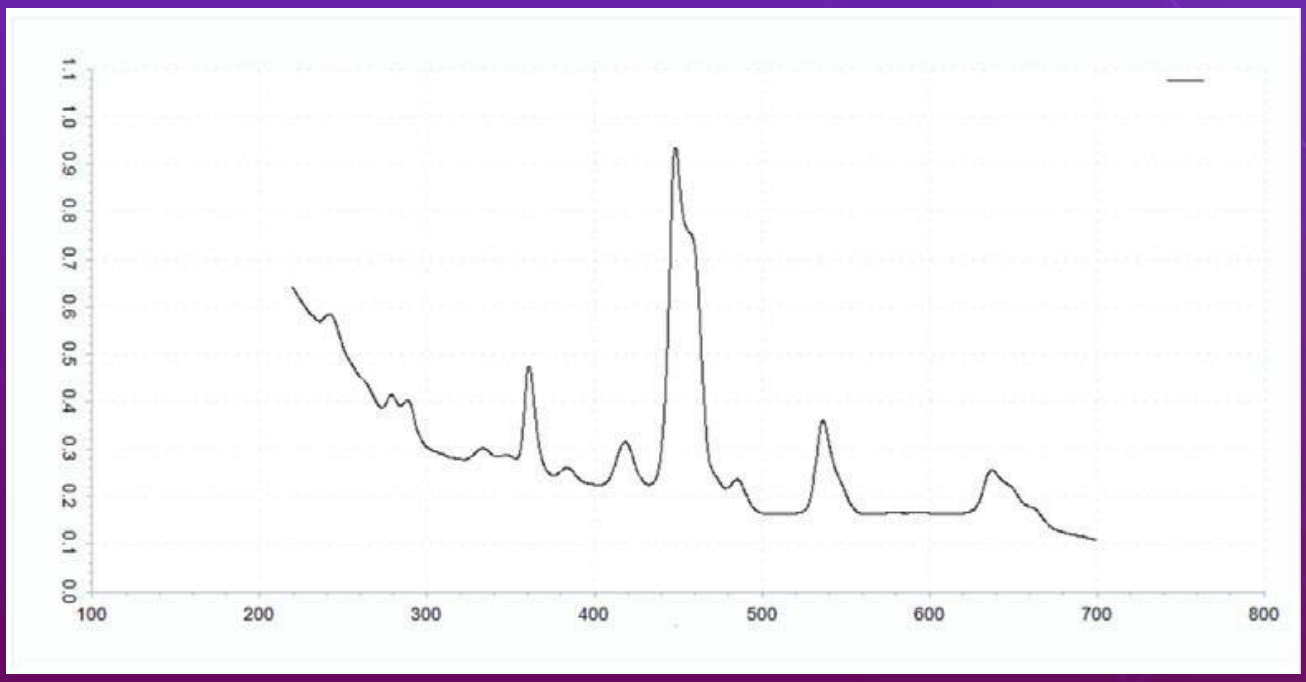
The patented transmission type deuterium lamp and static light path allow the light source switching without moving of lamp, which is more reliable.



# Ease of use

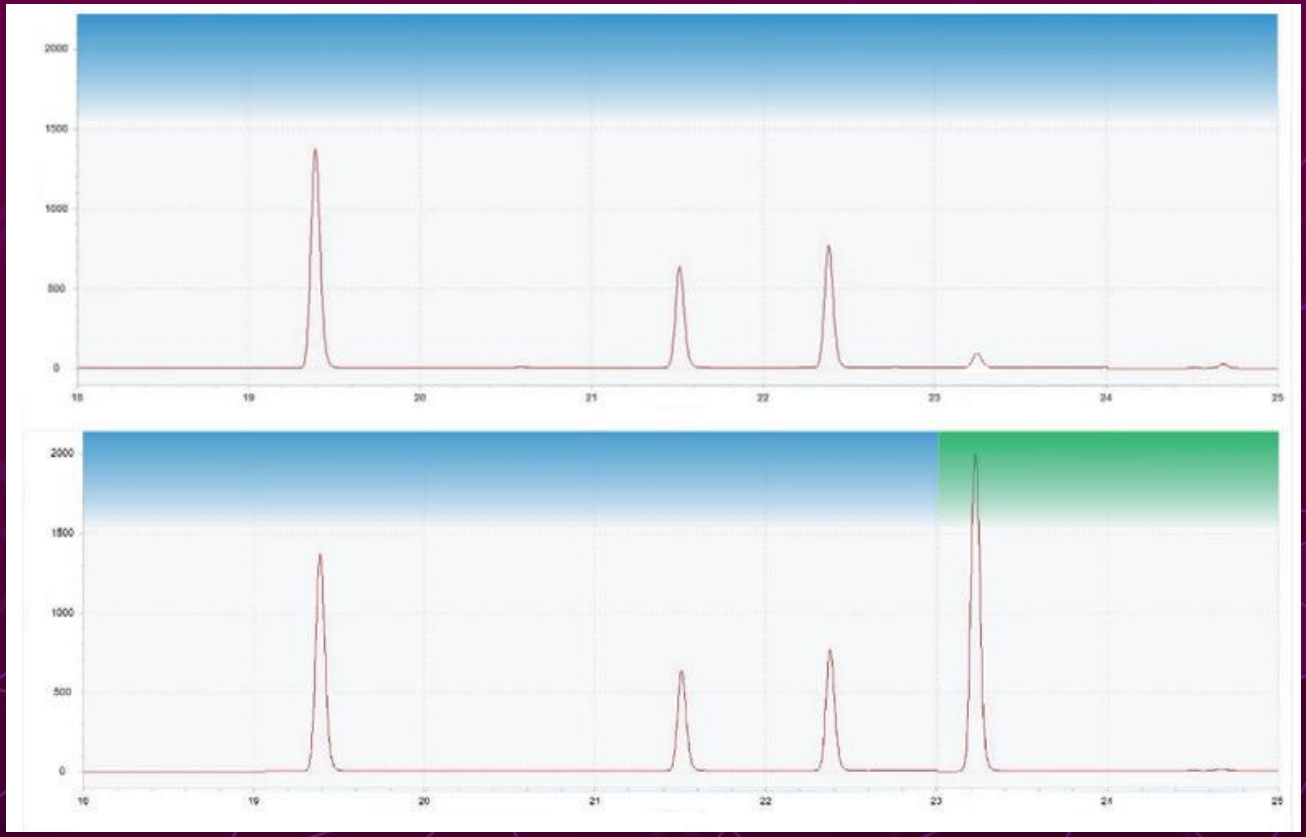
## Full-band spectral scanning

A full-band spectral scanning can be performed to easily find the optimal absorption wavelength of the target analyte.




## Wavelength time programming

Wavelength can be set for different analytes during different periods, to accomplish the high-sensitivity analysis of complex samples



# Diode Array Detector

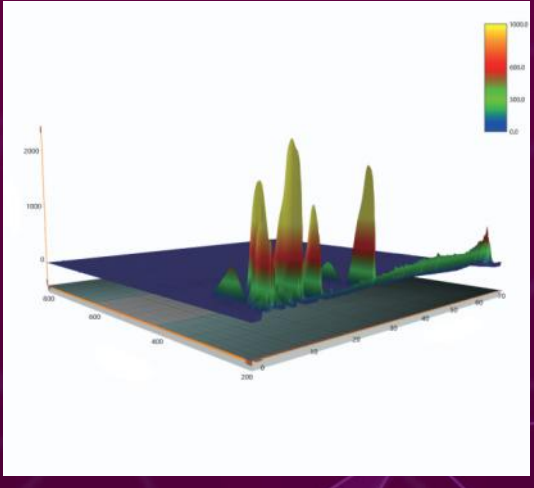
## Specifications:

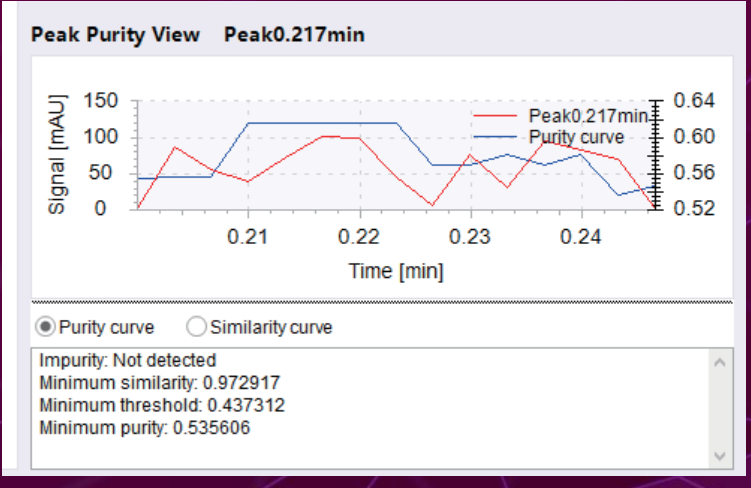
| | |
|---|---|
| Light source | Deuterium (transmission type) & Tungsten lamp |
| Wavelength range | 190~800nm |
| Slit width | 1nm, 2nm, 4nm, 8nm |
| Wavelength accuracy | +/- 1nm |
| Wavelength precision | +/- 0.1nm |
| Linearity | > 2.0 AU |
| Wavelength calibration | Holmium glass |

# Precision

### Spectral similarity alignment and peak purity determination are performed for precise qualitative and quantitative analysis

DAD provides full-spectrum information. The compounds can be identified by similarity comparison in the spectral database.  Peak purity determination can be performed in the workstation.






### High sensitivity—Close to UV Detector

High sensitivity mode can be performed for low  concentration samples,  the signal-to-noise ratio  of DAD can be reached to the same level of UVD.

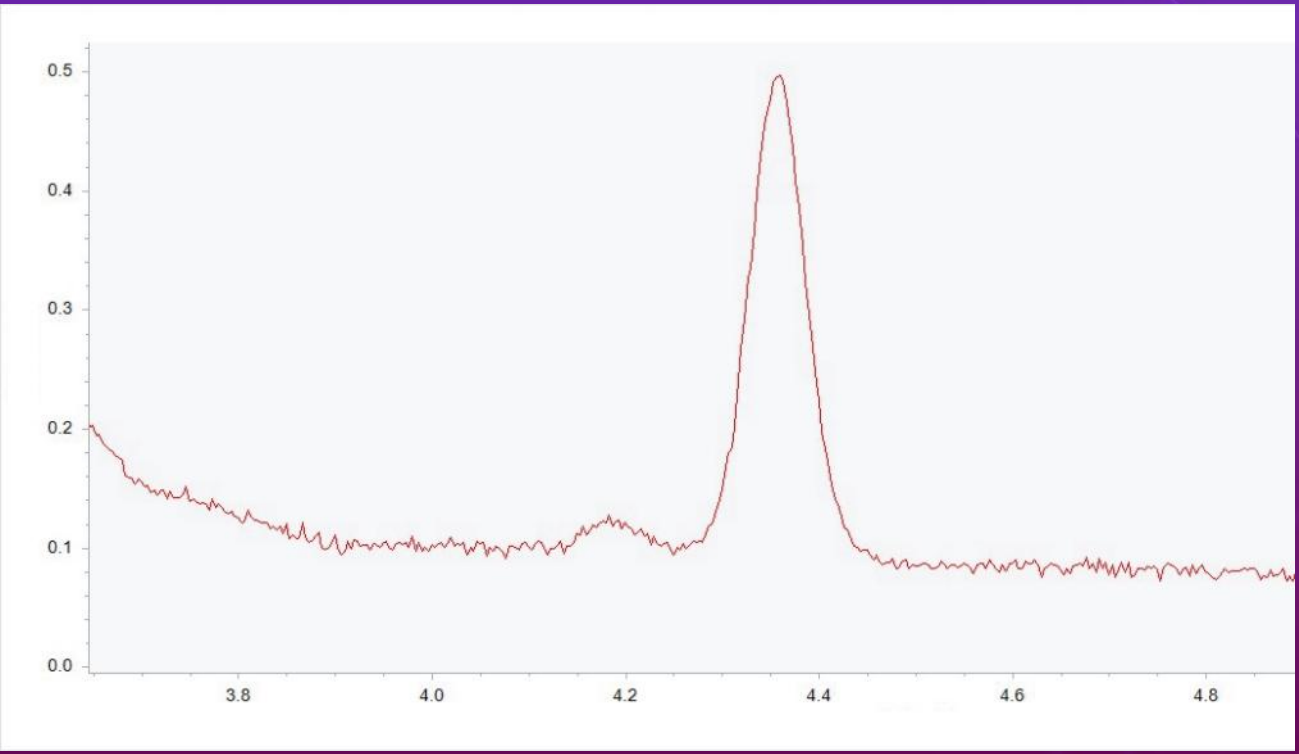
Sample: 1.0*10-7 g/mL naphthalene standard solution Column: C18, 4.6*250mn, 5um

Mobile phase: 95% methanol +5% water

Flowrate: 1.0mL/min

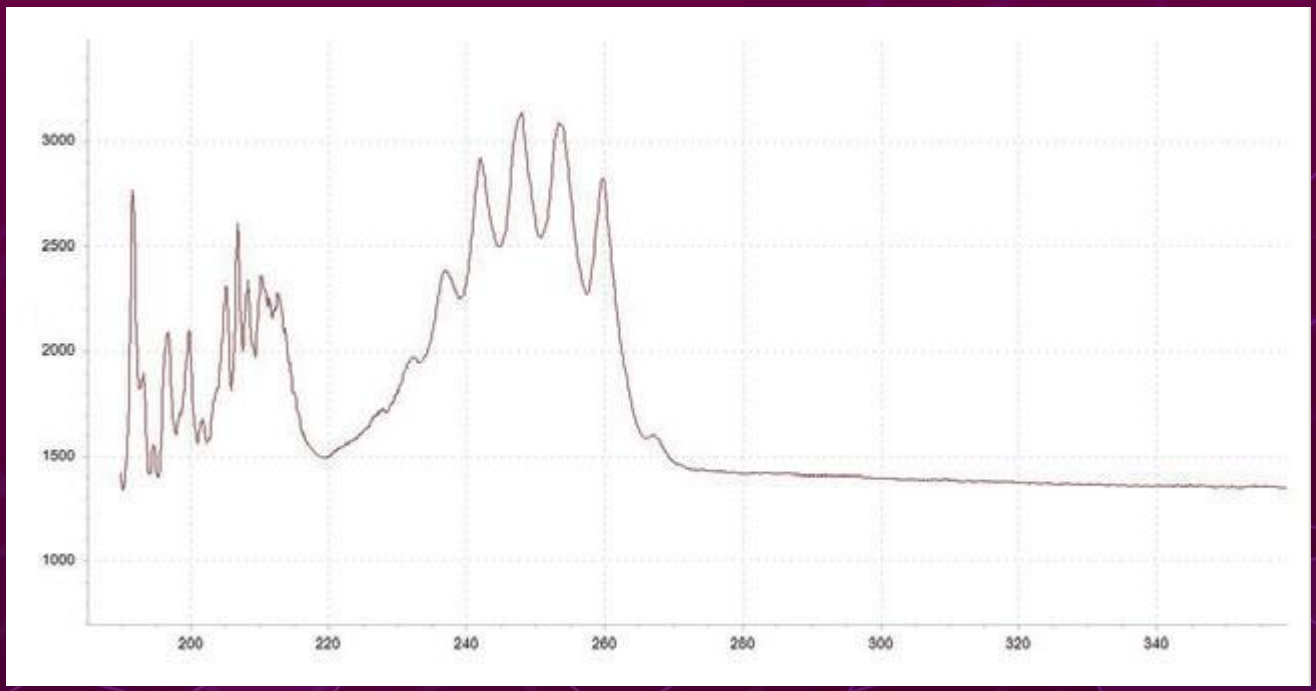
Injection volume: 20u

Wavelength: 254nm




### Achieving more accurate inspection data by high-resolution spectra.

When compound detection is performed in high-resolution mode, a finer spectral map can be output for better analysis of complex samples.




# Ease of use

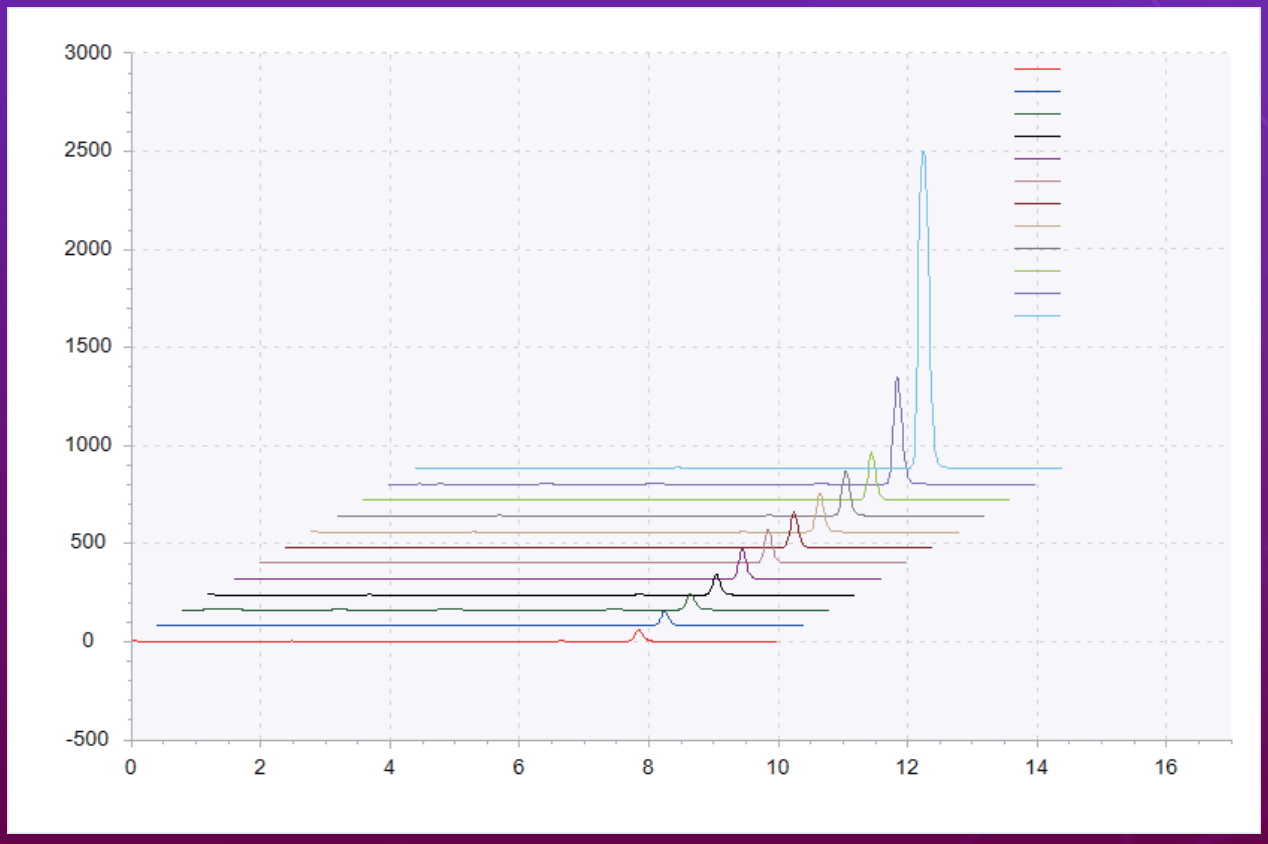
### Supports 12-channel real-time data collection

Significantly enhance the analysis efficiency by:

·Up to 12 wavelengths can be set for real-time detection;

Real-time analysis at a high sampling rate up to 150 Hz;

Full-spectrum detection.

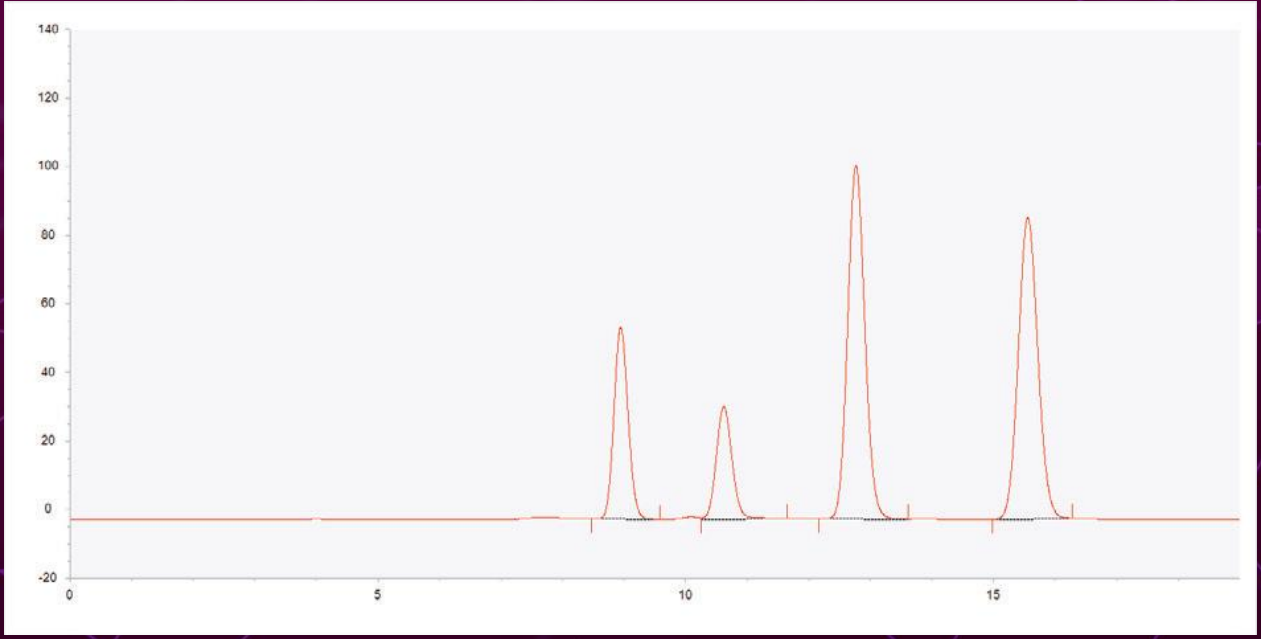



### Rapid spectral scanning for multiple use

When configured with a cuvette holder, samples can be loaded directly into the cuvette for rapid spectral scanning, to realizing UV spectrophotometer functionality.

# Other Detectors

By using high-resolution ATD, the detector can be equipped with versatile detectors such as Fluorescence Detector(FLD), Refractive Index Detector(RID), Evaporative Light Scattering Detector(ELSD), and CAD to meet the detection of different compounds.



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