

## High Performance Quaternary Liquid Chromatograph

# LC 3200

### Features:

- Calibration automation control provides high accuracy
- Integrated solvent switching system the high-pressure binary can have the function of double high-pressure binary, even double four high-pressure
- High efficiency autosampler and autodilution function
- Pressure range up to 600 bar
- Flow leak free detector provides warning in time
- Corrosion resistance materials used for black housing surface

### Application:

- Colorant brilliant blue, para blue
- Glyphosate
- Amino acid

### Description:

Optosky always takes high-tech products as the core, both inside and outside, soft and hard, with stylish design and full sincerity, to create more efficient and professional new products of the times. The newly developed LC3200 high performance liquid chromatography system meets the constantly upgraded regulatory requirements and redefines the appearance design of domestic liquid phase, perfects the automaticity, continuity and integrity of the analysis process, demonstrates the stability of laboratory results, and meets the feasibility of low-cost and high-efficiency operation of laboratories.



## 1. Performance parameters:

### Performance Specification of P3200 Pump

| Performance Specification               |   |
|---|---|
| Flow Rate                               | 0.001 -10.000mL/min (Step:0.00mL /min)  |
| Flow Accuracy                           | <±0.2%                                  |
| Flow Stability                          | RSD<0.06%                               |
| Max Pressure                            | 70MPa                                   |
| Pressure Display Error                  | ±0.3MPa                                 |
| Pressure Pulsation                      | <0.1MPa                                 |
| Gradient Composition Range              | 0-100%,0.01%delta                       |
| Gradient Mixing Accuracy                | <±0.5%, does not vary with backpressure |
| Gradient Composition Accuracy           | <0.1% RSD                               |
| Communication Mode                      | UDP                                     |
| Dimension/Weight (Long by wide by high) | 450x350mm x180mm/18kg                   |
| Power Supply                            | 110-220V,50-60Hz                        |
| Power                                   | 300W                                    |

### Performance Specification for O3200 column oven

| Performance Specification               |                              |                              |
|---|------------------------------|------------------------------|
| Models                                  | 3210                         | 3220                         |
| Temperature range                       | Ambient temperature+5°C~99°C | Ambient temperature+5°C~85°C |
| Accuracy                                | ±0.1°C                       | ±0.1°C                       |
| Precision                               | <0.1°C                       | <0.1°C                       |
| Communicate mode                        | 485line/UDP                  | 485line/UDP                  |
| Dimension/Weight (Long by wide by high) | 120x65x570mm/4.2kg           | 435x137x450mm/11kg           |
| power supply/Power                      | AC220V±10%,50Hz/110W         | AC110-220V,50-60Hz/130W      |

## Performance Specification of D3230 detector

| Performance Specification         |                           |
|-----------------------------------|---------------------------|
| Number of arrays                  | 512                       |
| Light resource                    | Deuterium lamp            |
| Array resolution                  | 1.2nm                     |
| Spectral resolution               | 2.4nm(slit100pm)          |
| Wavelength range                  | 190-800nm                 |
| Wavelength accuracy               | ±1.0nm                    |
| Dynamic short-term noise          | <±1.0x10 <sup>-5</sup> AU |
| Dynamic baseline drift            | 1.0x10 <sup>-4</sup> AU/h |
| Linearity range                   | >2.0AU                    |
| Detection pool withstand pressure | 1000psi                   |
| Detection pool                    | Analytics pool:10mm 11μl  |
|                                   | Semi-micro pool:5mm 2.5μl |
| Analog signal output range        | -0.5-2.5AU                |
| Communication mode                | UDP                       |

## Performance Specification of S3200 sampler

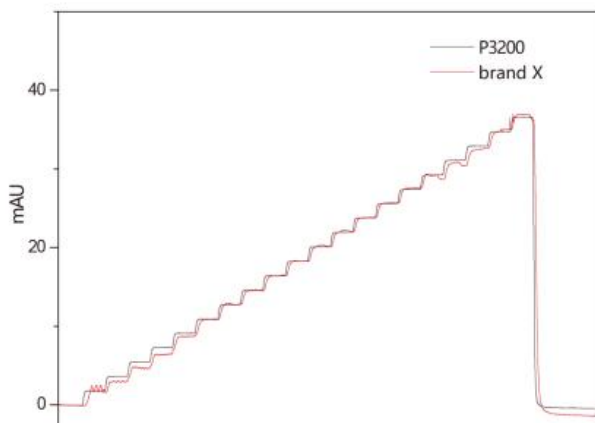
| Performance Specification |  |
|---------------------------|--|
| Injection range           | 0-100pL(Standard ), 1-2000pL (Matching)  |
| Capacity                  | 2mLSample vials 120bits; 1mL Sample vials 210bits;compatible 4.0mLSample vials and 96-well plate |
| Sample residue            | <0.002%  |
| Injection repeatability   | RSD<0.2%   |
| Max Pressure              | 45MPa  |
| Injection speed           | 10s or less  |
| Dimension/Weight          | 440x378x180mm (Long by wide by high) /13kg   |
| Power Supply              | 110-220V,50-60Hz   |
| Power                     | 30W  |

## Performance Specification of D3200 detector

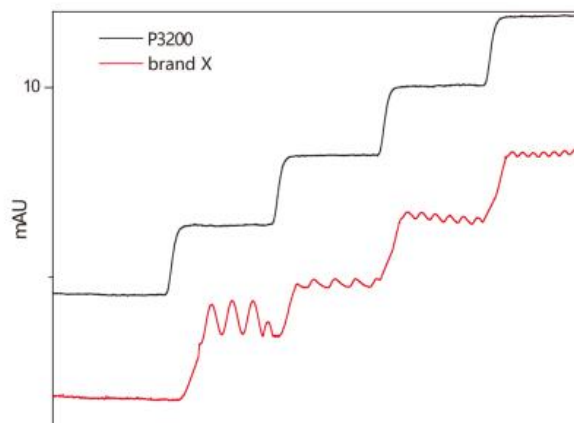
| Performance Specification       |  |
|---------------------------------|--|
| Wavelength range                | 190nm-800nm                                  |
| Light resource                  | Deuterium lamp and Tungsten lamp             |
| Noise                           | $<\pm 0.25 \times 10^{-5}$ AU                |
| Wavelength accuracy             | $\pm 1.0$ nm                                 |
| Sampling frequency              | 5-80Hzs adjustable (Single wavelength mode)  |
|                                 | A wavelength of 1 .0s (Dual wavelength mode) |
| Wavelength repeatability        | $<\pm 0.1$ nm                                |
| Max Pressure                    | 1500psi                                      |
| Spectral bandwidth              | 8nm  |
| Minimum detection concentration | $1 \times 10^{-9}$ g/mL                      |
| Drift                           | $<0.5 \times 10^{-4}$ AU/h                   |
| Linearity range                 | $>2.5$ AU (Customizable 3.0 AU)              |
| Detection pool                  | Analytcs pool: 10mm 11 $\mu$ L               |
|                                 | Semi-preparation pool: 5mm 2.5 $\mu$ L       |
| Time constant                   | 0.1s-5.0s adjustable                         |
| Dimension/Weight                | 440x378x160mm (Long by wide by high) /10kg   |
| power supply/Power              | 110-220V, 50-60Hz/100W                       |

## 2. Easy composition and perfect baseline

During the experiment, when the absorbance difference between AB and ab phases is large at the set wavelength, the baseline regular fluctuation is easy to appear in low proportion mixing. E3200 high pressure constant flow pump adopts patented pulsation damper and gradient mixer, which greatly reduces pulsation and improves mixing effect. Even at the limit ratio of 1:99, it has perfect baseline performance.



Comparison of 1% ~ 20% small scale baseline pulsation



Comparison of 1% ~ 5% small scale baseline pulsation

Mobile phase:

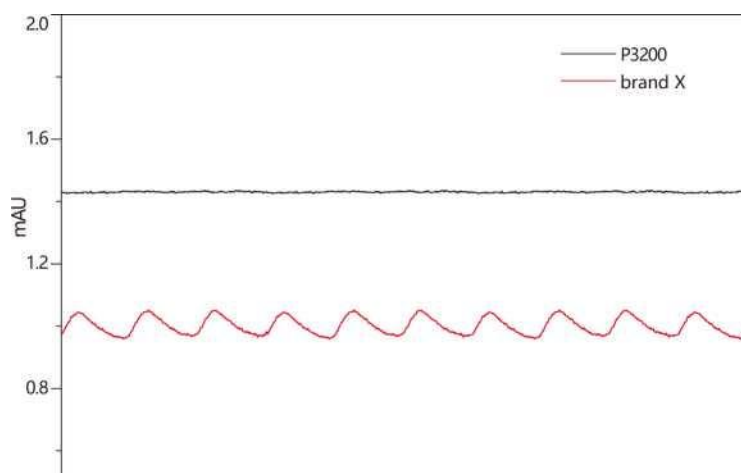
2% acetone aqueous solution:H<sub>2</sub>O=1:99

Detector: UV254nm

Flow: 1.0mL/min

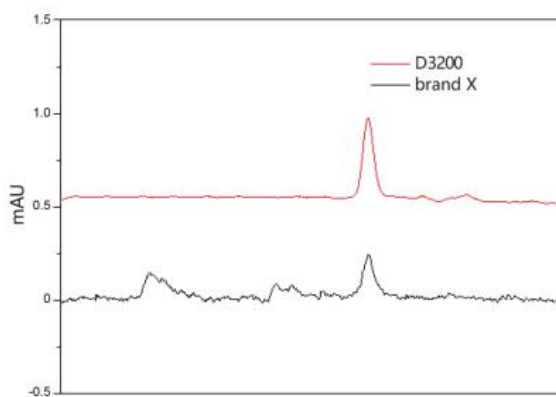
Temperature: room temperature

Pressure: No back pressure

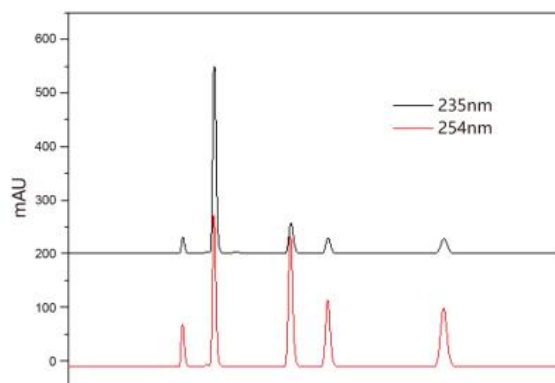


### 3. Easy to be sensitive and knows you better

It is often encountered in experiments that different analysis methods and different detection environments have different sensitivities. E3200 system's independent new detection pool, unique air duct system and micro step driver control the static angle of the unique technology, while achieving high precision, high sensitivity, low noise, low drift performance, so that the laboratory analysis work to achieve twice the result with half the effort



Comparison of baseline noise and detection limit of  $1.0 \times 10^{-7}$ g/mL naphthalene solution  
Minimum detection concentration: S/N=2, LOD  $5 \times 10^{-9}$ g/mL

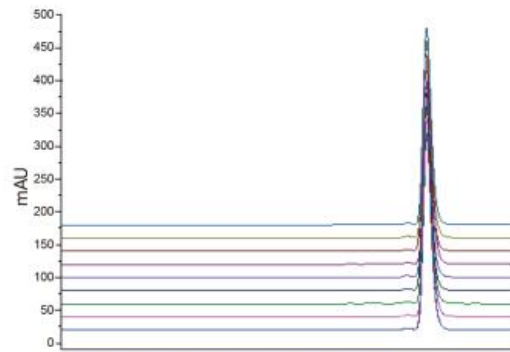
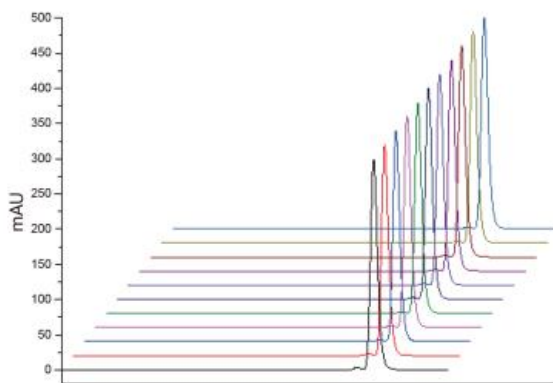
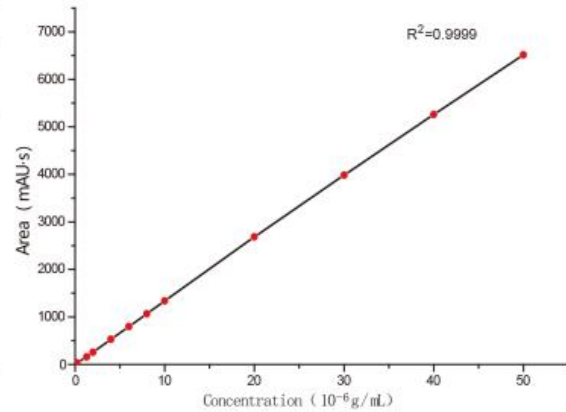
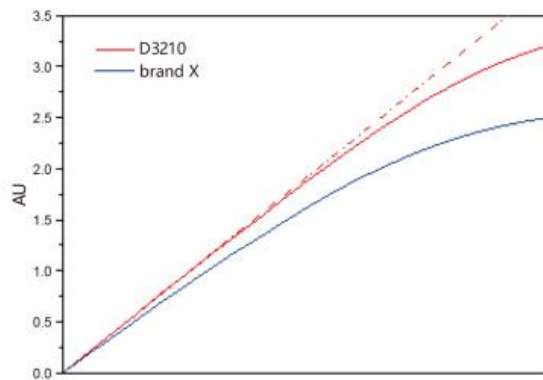


The acquisition interface in dual wavelength mode

## 4. Easy analysis and stable for quantitative

The data acquisition system adopts 24 bit high-precision AD conversion chip, with high data acquisition accuracy and wide linear range, up to 2.5AU, which can meet the requirements of high concentration and micro quantitative analysis at the same time.

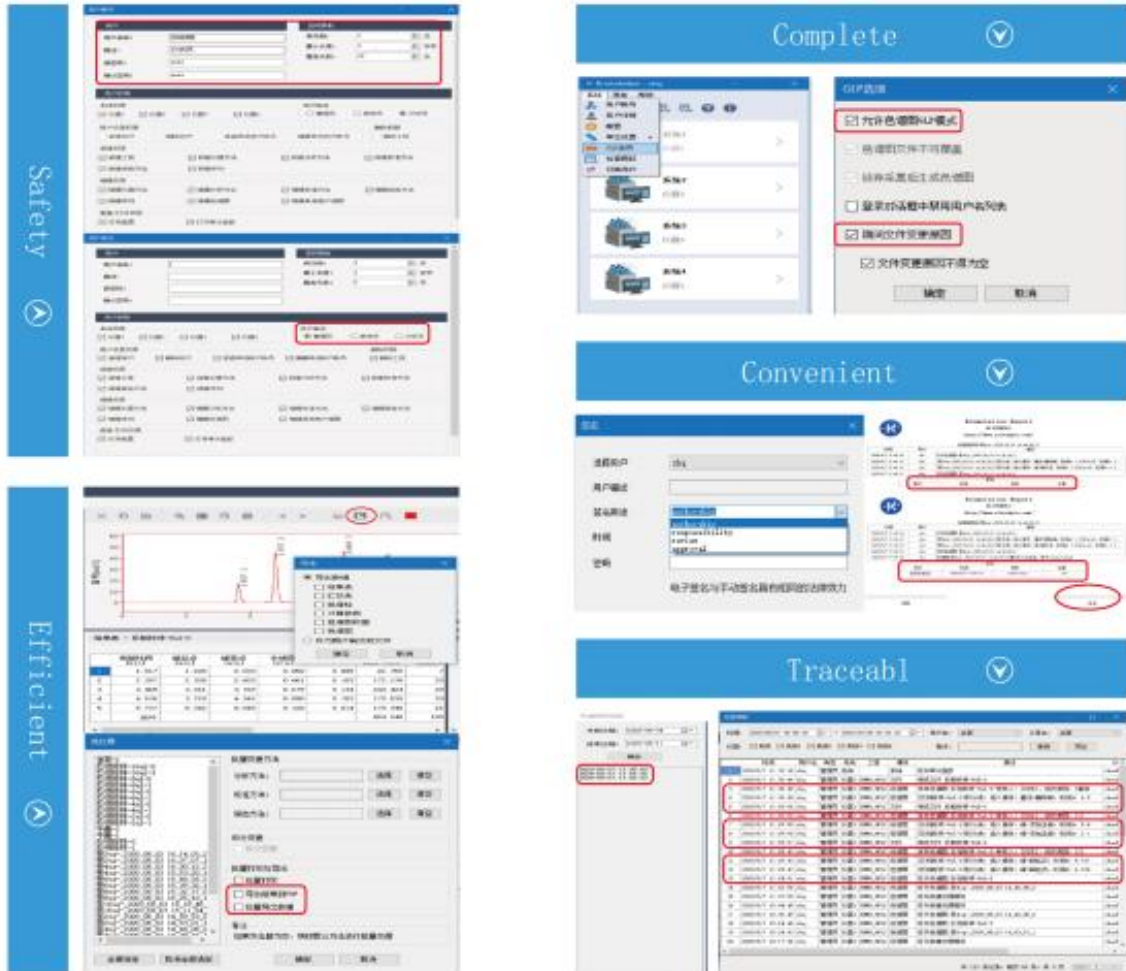
0.1-50uL The injection volume reached  $R^2=0.9999$ , both in micro injection and large volume injection.



RSD of peak area was 0.09%

## 5. Super housekeeper and smooth communication

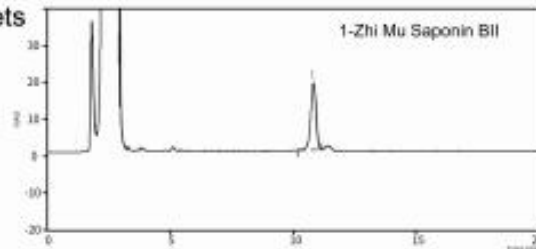
It can control liquid chromatography with personal computer and complete various operations. It has powerful functions such as database, audit tracking, GLP, data archiving and backup, electronic signature, permission setting, network management, etc. in the process of use, the interface is simple and easy to use.



## 6. Application examples

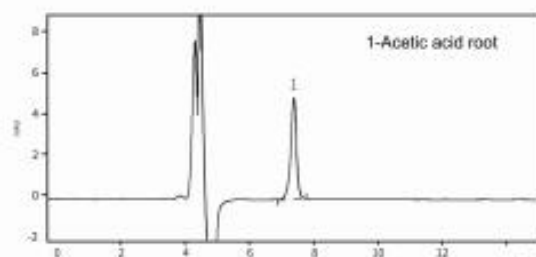
### Zhi Mu Saponin BII in Zhi Mu Drinking Tablets

Column: SinoChrom C8 5 $\mu$ m 4.6mm $\times$ 250mm  
 Mobile phase: Acetonitrile/Water =25/75  
 Flow rate: 1.0mL/min  
 Detector: ELSD  
 Injection volume:10 $\mu$ L  
 Column temperature:30 $^{\circ}$ C



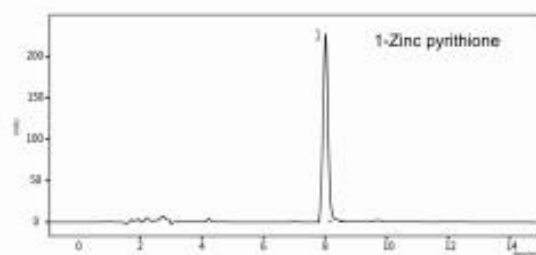
### Acetate in hemodialysis concentrate

Column: Supersil ODS2 5 $\mu$ m 4.6mm $\times$ 250mm  
 Mobile phase: Acetic acid root:10mmol/L Potassium phosphate (pH=2.3)/ Methanol solution=90/10  
 Flow rate:0.6mL/min  
 UV:220nm  
 Injection volume:10 $\mu$ L  
 Column temperature:35 $^{\circ}$ C



### Zinc pyrithione in shampoo

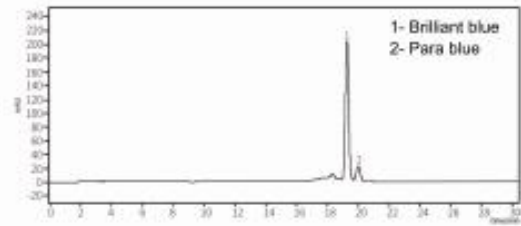
Column :SinoChrom ODS- BP 5 $\mu$ m 4.6mm $\times$ 250mm  
 Mobile phase: Acetonitrile/Water solution (0.01mol/L Potassium phosphate and 0.0005mol/LEDTANa2, Adjustment with phosphoric acid pH=4.0) =30/70  
 Flow rate:1.0mL/min  
 UV:230nm  
 Injection volume:5 $\mu$ L  
 Column temperature:25 $^{\circ}$ C





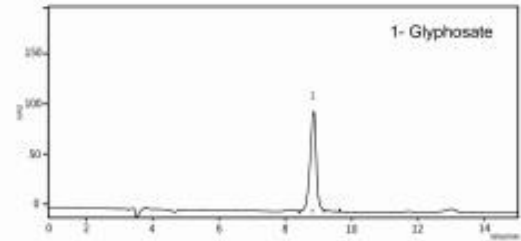
## ■ Colorant brilliant blue, para blue

Column: Supersil ODS2 5 $\mu$ m 4.6mmX250mm  
 Mobile phase A: Methanol; B: 1.42g Disodium hydrogenphosphate and 1.36g Potassium phosphate dissolved in 1000mL of water; Gradient elution  
 Flow rate: 0.8mL/min  
 UV: 254nm  
 Injection volume: 10 $\mu$ L  
 Column temperature: 40°C



## ■ Glyphosate

Column: Supersil SAX 4.6mmX 250mm  
 Mobile phase: 6.8g Potassium phosphate dissolved in 1000mL pure water, Adjustment with phosphoric acid pH=2.52  
 Flow rate: 1.0mL/min  
 UV: 195nm  
 Injection Volume: 30 $\mu$ L  
 Column temperature: 22°C



## ■ Amino acid

Column: Supersil Coreshell  
 Mobile phase: A: 50mM Sodium acetate aqueous solution (pH adjusted to 6.0); B: Methanol / Acetonitrile/Water = 45/45/10 (V/V/V); Gradient elution  
 Flow rate: 0.7mL/min  
 Detection wavelength: Excitation 230nm, Emission 450nm  
 Injection volume: 10 $\mu$ L  
 Column temperature: 30°C

