WUFENG®

PRESENTS

Wechat public account

SHANGHAI WUFENG SCIENTIFIC INSTRUMENTS CO.,LTD

www.wufengtech.com

**Head Quarter:**

Address: 3F, Building 3, Lane 1343 TongPu Road, Putuo District, Shanghai.
Tel: 8621-52695700 8621-52695702 8621-52695703
Fax: 8621-52695698
Postcode: 200333

Website: www.wufengtech.com
E-mail: service@wufengtech.com
Wufeng forum: www.instrument.com.cn/bbs/forum 500.htm

**Branch Company:**

**Trade Company:**

**Guang zhou Escalate Trade Co., Ltd.**
Address: 11/F., AXA Centre, 151 Gloucester Road,Wanchai, Hong Kong.
Tel: 852-58820238

**Application Support:**

**Anhui Wance Food Inspection Technology Co., Ltd.**
Address: Bengbu City,Anhui Province

**Machining Center:**

**Wufeng Precision Mechanism Co., Ltd.**
Address: AnfuIndustrial Park Ji 'an district Jiangxi province

**Office:**

**Beijing Office**
Address: Rm. 2011, Building A, Boutique ServiceApartment, No.2 Fangzhuang South Road,Fengtai District, Beijing
Tel/Fax: 86-13520267114

**Chengdu Office**
Address: Rm. 1307, Building 4, Lijingtiancheng,No.5 Xiaotian East Street, Wuhou District,Chengdu, Sichuan
Tel/Fax: 8628-84400584

**Wuhan Office**
Address: Rm. 811, 8/F, Modern Building (NorthBlock), No.317 Zhongshan Road, Wuchang District, Wuhan
Tel/Fax: 8627-88712112

**Zhengzhou Office**
Address: Rm. 7-2-2418, Manhattan Plaza, No.305 Jinshui Road, Jinshui District, Zhengzhou
Tel/Fax: 86371-69350587

Revision Date: 2018/10/08

Exformma Technologies®
BRAND OF WUFENG

# HPLC SYSREM

## EX-1700Ⓢ-HPLC
SPEEDY

## LC-100
TRUSTWORTHY

## EX-1600
DIGITAL / NETWORKED / INTELLIGENT CONTROL

2016~2018

# Top HPLC Producer of China

Combining with 20 years of committed focus and experience, Wufeng Instruments have developed a series of advanced, reliable HPLC products.

Dedicated to research and development of HPLC products for the past twenty years, Wufeng always maintaining the reliable quality, the excellent performance and the leading technology.

With a team of top engineers in micro-electronics, machinery, optics, and software, we execute the strict standard of design and engineering production. After two decades of experience, we have the leading HPLC technology.

- First digital control HPLC system in China;
- First U-HPLC system in China;
- First intelligent professional auto-sampler in China;
- First digital quaternary gradient infusion system in China;
- Number one in market share among the Chinese HPLC products.

Currently more than 7000 users are using the Wufeng LC-100 HPLC system. Wufeng Instruments have been deployed by many famous Chinese and international enterprises, research-oriented universities, institute etc. Some of our customers include:


**Tried & Trusted**

# History and Honors of Wufeng Instruments

**1998** Company established

**2002** Responsible for R&D of key project developed by Shanghai Science & Technology Committee LC-100

**2004** China's first digitally controlled LC-100 HPLC released to the market

**2005**

LC-100 won top award for Chinese analytical instruments, the BCEIA Gold Award

**2006** LC-100 awarded as "Annual New Product of 2004-2005" by instruments.com.cn and China Instrument Society

**2008**

China' s first EX1600 featuring GLP released to the market
LC-100 won the "2008 Science and Technology Progress Award" awarded by Qingpu district, Shanghai Science & Technology Committee

**2009** Wufeng Instruments ranked No.1 among Chinese HPLC brands by instruments.com.cn

**2013**

LC-100 awarded "Instrument of Most Attention"
Successful R&D and production of Arcus 5, China' s first intelligent auto-sampler.

**2014** EX1700, China's first S-HPLC ultra-fast HPLC released to the market

**2015**

LC-100 chosen as "Excellent Chinese Instrument"
EX1700 awarded BCEIA Gold Award
Anhui Wance Food Inspection Technology Co., Ltd and Wufeng Precision Machinery Co., Ltd established

**2016** Arcus 5 auto-sampler chosen as " Excellent Chinese Instrument"

**2017**

LC-100 second time awarded "Instrument of Most Attention"
LC-80 ChroMini HPLCreleased to the market

**2018** Chosen as Sinopec qualified supplier

# Chromatographic Workstation Software

Two kinds of chromatographic workstation software are provided to fulfill different needs. You can choose the most suitable system according to the demands of your application.

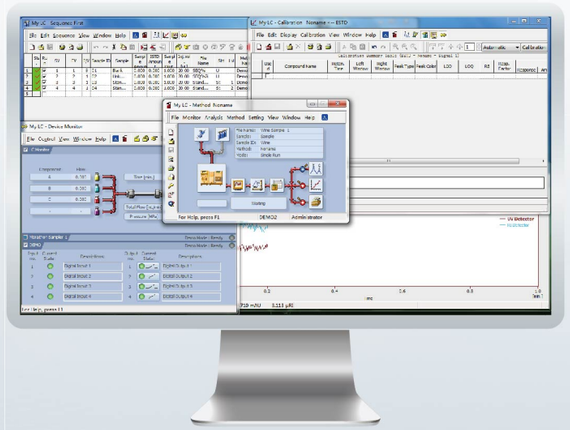
## Workstation Software - Professional Version

This workstation is custom-made for Wufeng Instruments by DataApex specializing in professional chromatography software. This company has provided professional chromatographic workstation software to numerous internationally renowned chromatograph manufacturers. A variety of high precision 24-bit chromatography signal acquisition modes enables digital control of the instruments .

The workstation conforms to data GMP certification, FDA certification, Installation Qualification/Operational Qualification (IQ/OQ), System Suitability Test (SST) and other specifications intended to ensure data validity and security. Efficient batch processing streamlines the whole process of instrument control, auto-sampler sequence acquisition, automatic integration calibration, and reporting output. It also features post-processing, chromatogram comparison, re-calibration, data input and output, and three-dimensional chromatogram processing.

The feature-rich interface is designed to meet diverse analytical demands. The workstation displays complex functions with graphs and arranges icons logically in the admin window to match the actual instrument sequence.

The software can control up to 400 instruments that are compatible with each other, and can collect one to four independent detector signals simultaneously. You can establish a high performance general chromatographic workstation with multi-channel analysis and multi-user access.



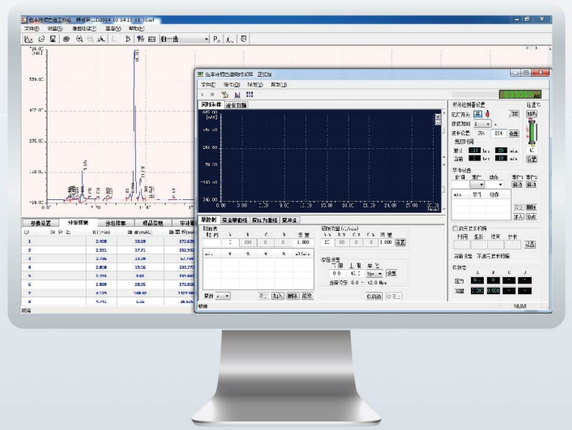
## Workstation Software - Standard Version

The chromatographic workstation supports RS232 serial port or USB interface as well as all digital signal output modes. It allows you to configure all of your instruments and fully-automate your system. The user interface is well-organized and straight-forward, providing you with all the most common analytic functions as well as some frequently-used advanced functions, such as spectrum scanning, variable wavelength scanning, etc. The streamlined interface allows you to seamlessly integrate chromatograms into professional presentations in the post-processing stages. This concise, but feature-rich software will satisfy most users' requirements.

- Gradient Elution
  You can manage gradient elution easily and accurately just by entering mobile phase ratio, flow rate, and gradient time in the corresponding lists. In addition, the software provides a pump flow curve so you can adjust gradient settings easily. This also allows you to follow the progress of gradient operations directly.

- Spectrum Scanning
  The software provides a spectrum scanning function for testing the deuterium lamp. First, it detects the light intensity of the deuterium lamp under different wavelengths, and then you can decide whether it is necessary to replace the deuterium lamp based on the results. Second, you can determine the wavelength error by the positions of two points on the chromatogram, 486 nm and 656 nm.

- Event Relay
  The event relay is controlled by a temporal program to help you perform all the required functions, e.g. switch on the conversion valve to separate and recycle the mobile phase. Many of these functions are not available in other popular workstation systems.



THE NEW THIRD GENERATION

## Configuration

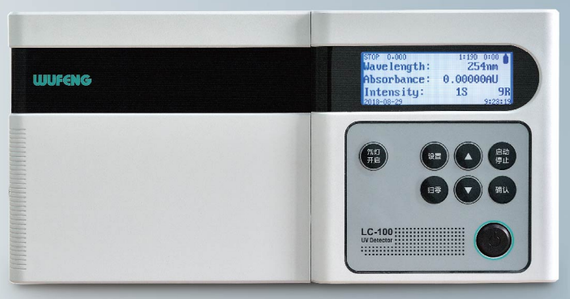
Isocratic System, Binary Gradient System and Quaternary Low-Pressure Gradient System

### Column Oven

The integrated temperature control and solvent tray makes the unit both attractive and practical.


### Detector Unit

Detector Units include: UV/ UV-VIS, FLD, DAD, RID, ELSD




### Infusion Unit

Infusion Units include: Analytical type, Semi-preparative type, High pressure Semi & Preparative type.


## Top-quality Products Thoroughly Tempered

Starting research and development in 1999, we released the first generation LC100 into the market in 2003. Although it has won numerous awards, it has been through hundreds of improvements and innovations in order to better meet the needs in various industries. After 15 years of accumulation and experience. the new third-generation LC-100 can finally be presented to you.

## Better Configuration and Multiple Options

### The new LC-100 covers analytical, semi-preparative and preparative types.

The workstation software offers two optional versions according to customer's needs . One of them can meet a variety of certification requirements, including GMP, FDA, 3Q, etc. Optional manual sample injector and auto-sampler are also provided.

### Reliable and stable, visible touch of high quality, all reflect superb

The professional team built the New LC-100, all parts through rigorous selection, from the exterior of each component shine began to reflect the strength beyond peers.

Strict production standards and management make LC-100 has always been a "tried & trusted" Chinese high-end product.

LC-100
HPLC System

### New Function Rich configuration

The new optional, Solvent Manager units can easily switch4 to 8 kinds of solvent base on binary gradient system. There are several configurations available for user selection.

### Program and Structure optimization

Base on years of experience and application requirements, program and structure has been optimized. The new solvent pressure real-time compensation control function makes the detection result more accurate. As well as one-piece check valve makes the infusion more stable, and the maintenance more convenient.

# Specifications of **LC-100**

## Infusion Unit

### Analytical

| | |
|---|---|
| **Model** | **P100 (Analytical)** |
| **Liquid Infusion System** | Dual-piston reciprocating parallel pump, equipped with a binary high-pressure mixer |
| **Flow Rate Range** | 0.001-10mL/min |
| **Max Output Pressure** | 42 MPa |
| **Flow Accuracy** | ≤ ±1% |
| **Flow Precision** | RSD<0.07% |
| **Qualitative Repeatability** | $RSD_6$ ≤ 0. 1% (naphthalene/methanol standards) |
| **Quantitative Repeatability** | $RSD_6$ ≤ 0 .3% (naphthalene/methanol standards) |
| **Pressure Fluctuation** | 0.1 Mpa |
| **Power Supply** | 220V/110V |

### Semi-preparation and Preparation HPLC System

| **Model** | **P100SP (40 mL)**<br>**semi-preparation system** | **P100HSP (50 mL)**<br>**high pressure semi-preparation system** | **P100HP (120 mL)**<br>**high pressure preparation system** |
|---|---|---|---|
| **Flow Rate Range** | 0.01 -40 mL/min | 0.01-50 mL/min | 0.01-120 mL/min |
| **Prsssure Range** | 0-25 Mpa | 0-42 Mpa | 0-42 Mpa |
| **Flow Accuracy** | ± 2% | ± 2% | ± 2% |
| **Flow Rate Accuracy** | RSD<0.1% | RSD <0.2% | RSD <0.2% |

## Column Oven

### Product Specifications

| | |
|---|---|
| **Model** | **CO100 column oven** |
| **Temperature Control Principle** | Air circulation heating |
| **Temperature Range** | 5°C (above room temperature)~80°C |
| **Temperature Accuracy** | ±0.2°C (test at 35°C) |
| **Temperature Stability** | ± 0.1 °C |
| **HPLC Columns Installed** | 2 (250mm) |
| **Power Supply** | 220V/110V |

## Detector

### UV Detector

| **Model** | **UV-100 UV detector** | **UV-VIS100 detector** | **UV-100S preparative UV detector** |
|---|---|---|---|
| **Flow Cell Volume** | 8 μL | 8 μL | 6 μL |
| **Light Source** | D2 lamp | D2 lamp＋W lamp | D2 lamp |
| **Wavelength Range** | 190-680 nm | 190-900 nm | 190-680 nm |
| **Spectrum Bandwidth** | | 8 nm | |
| **Wavelength Accuracy** | | ±1 nm | |
| **Wavelength Precision** | | Below 0.1 nm | |
| **Noise** | | ≤0.25 × $10^{-5}$AU (static)/± 1x$10^{-5}$AU (dynamic, under given conditions) | |
| **Drift** | | ≤ 0.4×$10^{-4}$AU/h (static) / ≤ 2 × $10^{-4}$AU/h (dynamic, under given conditions) | |
| **Minimum Detectable Concentration** | | 3x$10^{-9}$ g/ml (naphthalene/methanol solution) | |

### RI Detector

| | |
|---|---|
| **Model** | **RI 100** |
| **Effective range for refractive** | 1.00 – 1.75 RIU |
| **Temperature control optical bench** | 7°C above ambient temperature<br>35 °C up to 55 °C in 1 °C steps |
| **Noise（Analog signal）** | 7 nRIU (± 7 μV) |
| **Noise（Digital output）** | 3 nRIU (± 3 μV) |
| **Drift** | < 1 μRIU/h (< 1mV/h) |
| **Signal range（recorder）** | Selectable: 10 mV, 100 mV, 1000 mV |
| **Flower cell volume** | 4 μL / Micro　9 μL / Analytically　13 μL / Semi-preparative |
| **Max Pressure** | 6 bar (0.6 MPa) |
| **Max Flow rate** | 0.1 – 3.0 mL/min |

### ELSD

| | |
|---|---|
| **Model** | **ELSD 100** |
| **Light Source** | Laser diode with correction optical mirror, 670 nm, and maximum output being less than 5mW, in compliance with FCC safety standards |
| **Detection Element** | Silicon photoelectric diode |
| **Temperature Range** | Room temperature to 110°C |
| **Nebulizer Gas** | Nitrogen is optimal, maximum 3.0L/min |
| **Pressure Range** | 15-90 psi |
| **Mobile Phase Flow Rate** | 0-5 mL/min |
| **Analog Output** | 0-1 V or 0-10 mV |
| **Parameter** | Use keyboard to enter operation parameters |
| **Display** | LCD |

### DAD100 Detector

| | |
|---|---|
| **Wavelength Range** | 200-900nm (200-600*)<br>Above 600 nm just for W lamp |
| **Arrays** | 512 |
| **Spectrum Bandwidth** | 10nm |
| **Light Source** | D2 lamp + W lamp |
| **Noise** | ±5×$10^{-5}$AU |
| **Drift** | 5×$10^{-4}$AU |
| **Sample Rate** | max 100Hz |
| **Interface** | LAN USB R232 |

### FLD100 Detector

| | |
|---|---|
| **Flow Cell Volume** | 16μL |
| **Excitation Wavelength** | 200-890 nm |
| **Emission Wavelength** | 210-900 nm |
| **Wavelength Precision** | 3nm |
| **S/N** | ＞720 |

According to the application requirements, other special detectors can be selected by users.

# EX-1600 HPLC Sysrem

EX 1600 HPLC System is a networked, intelligent, automatic, high-precision chromatograph developed by Shanghai Wufeng Scientific Instruments Co., Ltd.

It employs cutting-edge microcomputer technology that encompasses a diversity of functions without the use of a central controller. The individual units interact with one another, coordinating to simplify your work and free you from the lab.



# Digital, Networked, Intelligent, Automatic

## Reliable infusion and detection system

Elaborately developed infusion system provides accurate liquid flow for excellent sample reproducibility. The Exformma Arcus HPLC columns ensure qualitative and quantitative reproducibility over ten thousand iterations for sample injections under specified lab conditions.

## Superb sensitivity

The unique flow cell design combines parallel dual bore holes with high performance D2 lamps produced by an internationally recognized company to enhance baseline stability and ensure optimal sensitivity.

## Leading quaternary technology

The brand new EX1600QP quaternary system features industry-leading infusion unit technology to effectively resolve problems with precision during small-scale mixing processes by allowing smaller pulse fluctuations under micro flow conditions. At present, we are one of the only HPLC producers in the world to offer this technology. Fully digitized technology enhances the user experience with personalized automatic instruments. This resolves problems with the quaternary gradient at low pressure causing large deviations in the amounts for mobile phases. This ensures highly precise proportions for A, B, C and D mobile phases.

## Intelligent control system

The EX1600WS chromatographic management system integrates full-featured user-friendly modules, including instrument control, data collection, and data processing modules. It also offers workstation software that meets GMP and FDA21CFR certification requirements, as requested by our users. Multi-task and multiple-window views enable you to keep abreast of all real-time analyses, and the advanced auto-diagnosis function monitors the status of all units in real time with multiple built-in sensors to provide timely solutions.

# EX1600P Infusion Unit

## Analytical

- The EX1600P infusion unit has a process monitoring device.
- An optional auto rinsing device is available to make the buffer salt system convenient and worry-free.
- The unit also has many user-friendly assistance functions like automatic piston rod retraction, which allows you to easily replace any consumable.
- If there is a leak inside the instrument, the system will alert the user.
- The unit's timer program allows the user to set human-machine interactions.
- Can be switched on/off automatically.
- Other functions include status detection, fault warning, and online help.
- A network control enables the unit to detect any current or potential failuresand offers online solutions.


EX1600P Infusion Unit

# Semi-preparation Infusion Unit

The EX1600PP semi-preparative pump can be used for high capacity tests and analysis or to prepare and extract microscale products.

The EX1600PP features multiplex pumps, with liquid pumped alternately by two pump heads. This ensures higher precision infusion, lower pressure fluctuation, a more stable system, and a longer component lifespan when pumping large-flow mobile phase.


EX1600SP Semi-preparative Infusion Unit

# EX1600QP - The New Digital Quaternary Gradient System

## Redefine quaternary gradient precision

Using the EX1600QP quaternary gradient system combined with the Arcus5 auto-sampler is a whole new experience in automation. During the experimental process, the system can mix four mobile phases at any desired ratio, providing you with full convenience and freedom.


EX1600QP Quaternary Gradient Infusion Unit

The application of innovative digital linear motor technology subverts the traditional cam drive quaternary gradient technology. With this new technology, it is possible to control the infusion unit's piston rod displacement digitally. This function, combined with a new motor featuring millisecond positive-negative switching-process, enables precise switching of up to four channel-infusion solenoid valves. This allows analysts to obtain optimal operating experience at any mixing ratio.

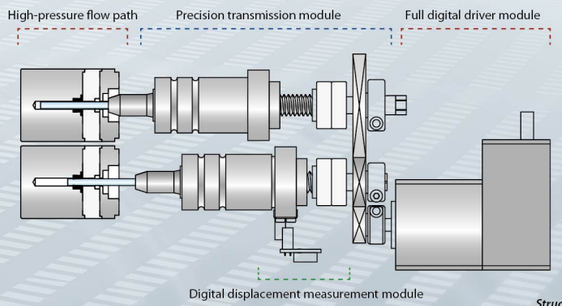
Traditional quaternary gradient products based on the cam structure have some inherent defects. The piston rod is set in motion by driving a non-circular cam actuated by a flexible conveyor belt on a step motor. This process is complicated, since the cam curve is not a standard Archimedes line. This means that it is difficult to process, and reproducibility is often poor. In addition, the positive and negative switching of the step motor is based in seconds, so it must rely on a jack-head pump for infusion compensation. This leads to an inaccurate proportion of diverse infusion channels and marked deviation.

### Traditional quaternary gradient technology has some fatal flaws

- Large deviation on mobile phase output proportion makes it unable to handle micro flow applications
- Unreliable instrument quality due to inconsistent manufacturing precision for internal components
- Commonly used static mixers are ineffective. Requires manual mixing, since it is difficult to deal with small proportional mixing of mobile phases.

### Advantages of the new digital quaternary gradient pump

- Accurate control of the mobile phase ratio Dynamic mix, outstanding mixing effect
- No manual mixing for small proportions
- Built-in degassers, effective and simple operation, and low failure rate
- Digital motor provides stable quality




*Structure diagram of the new digital motor*

# EX1600UV UV Detector

- Uses digital exchange system for full control of instruments via RS232, USB or LAN;
- Process monitoring function provided by built-in online leakage monitors that send alerts immediately in case of flow cell leaks or leakage of other key components;
- Smart functions enable automatic light intensity adjustments, automatic leakage alarm, man-machine interaction on time program setting, automatic start-stop function, and diagnosis of potential and existing faults to provide online solutions;
- Unique flow cell design with dual parallel conical bores, effectively amplifies light intensity and energy;
- Automatic spectrum scanning;
- Dual light source detector EX1600UV-VIS meets all detection requirements within the visible light range.

EX1600UV UV Detector

# Fluorescence Detector

## Specifications

| | |
|---|---|
| **Model** | EX1600 FLD |
| **Cell volume** | 16μL |
| **Excitation light wavelength** | 200-890nm |
| **Emitting light wavelength** | 210-900nm |
| **Wavelength accuracy** | 3nm |
| **Signal to noise ratio S/N** | >720 |

Fluorescence Detector

# EX1600RI Differential Refractive Index Detector

## Specifications

| | |
|---|---|
| **Model** | EX1600RI differential refractive index detector |
| **Effective range for refractive** | 1.00 – 1.75 RIU |
| **Temperature control optical bench** | 7°C above ambient temperature 35 °C up to 55 °C in 1 °C steps |
| **Noise（Analog signal）** | 7 nRIU (± 7 μV) |
| **Noise（Digital output）** | 3 nRIU (± 3 μV) |
| **Drift** | < 1 μRIU/h (< 1mV/h) |
| **Signal range（recorder）** | Selectable: 10 mV, 100 mV, 1000 mV |
| **Flower cell volume** | 4 μL / Micro<br>9 μL / Analytically<br>13 μL / Semi-preparative |
| **Max Pressure** | 6 bar (0.6 MPa) |
| **Max Flow rate** | 0.1 – 3.0 mL/min |

*Please contact Wufeng sales staff for more detector types*

EX1600RI Differential Refractive Index Detector

# Specifications of **EX1600**

## Infusion Unit

| **Model** | **EX1600HP/EX1600LP** | **EX1600SP** |
|---|---|---|
| **Liquid Infusion Principle** | In-parallel connected pumps with reciprocating dual pistons | In-parallel connected pumps with reciprocating dual pistons |
| **Maximum Operating Pressure** | 42 Mpa | 25Mpa |
| **Flow Rate Range** | 0.001mL/min-10mL/min | 0.01-50.00mL/min |
| **Flow Precision** | RSD<0.07% | RSD<1% |
| **Flow Accuracy** | ≤±1% | ≤±1% |
| **Pressure Fluctuation** | 0.1Mpa | 0.2Mpa |
| **GLP Function** | Providing pressure curve and flow curve, recording using frequency of piston seals | Providing pressure curve and flow curve, recording using frequency of piston seals |
| **Power Supply** | 110V/220V | 110V/220V |
| **Gradient System** | EX1600HP high pressure gradient system | EX1600QP quaternary gradient |
| **Mixing Capacity** | 2 types of liquid | 2-4 types of liquid |
| **Mixing Principle** | Gradient ratio controlled by two pumps with different flow rates | Gradient ratio controlled by the on/off time of the switch valve |
| **Mixing Accuracy** | ±1% | ±2% |
| **Mixing Precision** | ±0.2% | ±0.3% |

## UV Detector

| | | |
|---|---|---|
| **Model** | EX1600UV | EX1600UV-VIS |
| **Light Source** | D2 lamp | D2 lamp and W lamp |
| **Wavelength Range** | 180nm-700nm | 180 nm-900 nm |
| **Wavelength Accuracy** | ±1nm | |
| **Wavelength precision** | <0.1nm | |
| **Spectral Bandwidth** | 8nm | |
| **Noise** | $\pm 0.2 \times 10^{-5}$ AU | |
| **Drift** | $0.3 \times 10^{-4}$ AU | |
| **Measuring Range** | -2AU-2 AU | |
| **Adjustable Response Time** | 0.1, 0.2, 0.5, 1, 2 | |
| **Wavelength Time Program** | Arbitrary time varying wavelength | |
| **GLP Function** | Time lamp use, record D2 and W light energy | |
| **Size and Weight** | 61(L) × 44(W) × 35(H) cm, about 17 Kg | |
| **Power Supply** | 110V/220V | |
| **Flow Cell Volume** | 8μ (PRE 6μ) | |

# EX1600CO Column Oven

- Horizontal/Vertical column oven;
- Stable and fast heating with high precision;
- CO II column oven is provided with cooling function to meet test requirements of biochemical samples.
- Large volume allows installation of two HPLC columns;
- Temperature control range:
  - CO I Room temperature + 10°C ~ 85°C
  - CO II Room temperature - 10°C ~ 85°C
- Temperature Accuracy: ±0.2°C (test at 35°C)
- Temperature Stability: ± 0.1 °C

CO I Horizontal Column Oven

CO II Vertical Column Oven

# Intelligent ARCUS 5 Auto-sampler

Arcus 5 is equipped with control software can easily operate via PC. Sample analysis, dilution and mixing, and other steps in processing can be performed conveniently and quickly by the user-friendly design facilitates.

The use of the internationally advanced metering pump with non-wearing materials enables the number of sampling to reach 1 million times, ensures the long-term stability of the analysis data, and avoids the troubles of regularly replacing the accessories.

Advanced self-protection functions with a variety of sensors completely avoid wrong operation, wrong puncture, leakage, pipe blockage and other problems. Arcus 5 give early warning to operators to avoid damage to equipment.

The 0.1 - 1000μL injection volume ensures that both large and small volume samples can be injected with high precision.

It employs short highly efficient injection cycle consisting of rapid repetitive injections to save time.

Various optimizations reduce cross contamination among samples.

Arcus5 auto-sampler is compatible with most types of HPLC systems from different suppliers.


Patent No.: 2012.2.0010632.2
2012.2.0540207.4
2011.2.0431981.7
2013SR056355


## Specifications of the ARCUS 5 Auto-sampler / ARCUS 5-plus Auto-sample

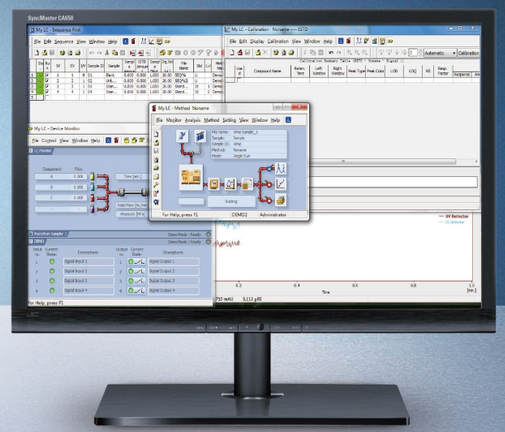
| Model | ARCUS-5 Analytical (I) | ARCUS-5 Preparation (II) |
|---|---|---|
| **Sample Loading** | Standard tray<br>Expanded tray<br>Each side could be set with one of the tray types and the tray in one side could be different from the other side; the system could automatically identify the tray type; maximum108 vials are available (2 mL vial) | (1) 2 mLx 54 vials<br>(default standard configuration)<br>(2) 10 mL x 15 vials<br>(3) 4 mL x 35 vials |
| **Vial Height** | H≤ 52mm (including septa and cap-mat) | |
| **Metering Pump Volume** | 200μL (precision: 0.1μL) | |
| **Injection Mode** | Full loop injection<br>Partial loop injection<br>No waste injection | |
| **Automatic Protection** | Vial-missing alarm, sample needle fault alarm, pipeline jammed alarm, and leakage alarm | |
| **Power Supply** | AC 115-230V, 50/60Hz | |
| **Injection Volume** | | Maximum volume 500uL |
| **System Test Quantitative Repeatability** | Full loop injection: $RSD_6$ ≤ 0.3%<br>Partial loop injection: $RSD_6$ ≤ 0.5%<br>(injection volume≥ 10μL)<br>No waste injection: $RSD_6$ ≤ 1.0%<br>(injection volume≥ 10μL) | |
| **Memory Effect** | ≤ 0.005% (designated washing procedure) | |
| **Maximum Pressure** | 40 Mpa (conventional) 60 Mpa<br>(ultra-high performance system) | 40 Mpa |
| **Metering Pump Precision** | | Accuracy of pumping fluid≤±3%<br>Pumping accuracy≤1% |

# Leader in China

## A Real Speedy HPLC Made in China

EX1700 S-HPLC® is another inspiring and innovative product developed by Shanghai Wufeng Instrument . It is epoch-making among China's HPLC products and was developed through years of effort benchmarking against the world's leading UHPLC chromatographic technology.





# EX1700S-HPLC®

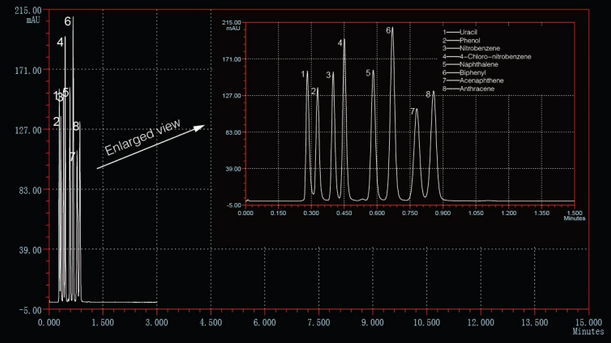
## Performance Comparison

The EX1700 S-HPLC® has a pressure range of 9000Psi and can handle 1.8-2.0 μm HPLC columns. It provides better separation, higher resolution, and faster analysis than conventional HPLCs. Actual analysis time can be reduced to 1/8-1/10 that of a conventional HPLC. EX1700 S-HPLC® offers superior lab solutions for fast super-efficient analysis, while greatly lowering operation costs. Whether it's about efficiency, precision, or overall costs, EX1700 S-HPLC® has the absolute advantage over international HPLC products which run under normal pressures.


Compared with the conventional HPLC products of world-renowned brands, the EX1700 speedy HPLC offers better separation ability and peak symmetry, as well as more stable baseline and higher resolution. It also greatly reduces analysis times and costs while minimizing environmental impact. The EX1700 makes it possible to analyze hundreds of samples in just one day!

## EX1700S-HPLC System

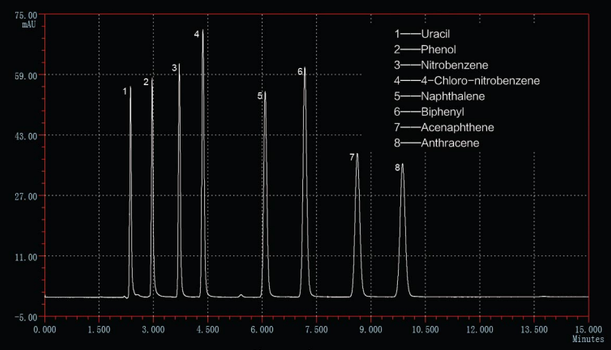
- Flow rate 1.5 mL/min
- Mobile phase A acetonitrile, B water. Mixing ratio A: 80%, B: 20%
- Fast HPLC, all peaks appeared in one minute



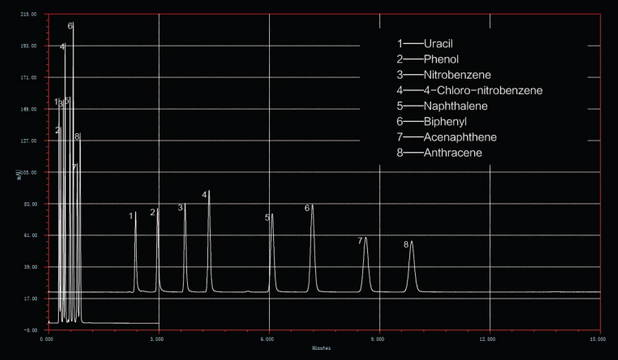

Fast peak appearance

## Comparison with conventional HPLC

- HPLC column specifications: Particle size 5 μm, 4.6 mm×250 mm HPLC column
- Flow rate 1.0 mL/min
- Mobile phase A acetonitrile, B water. Mixing ratio A: 80%, B: 20%
- For the same sample, the analysis time of conventional HPLC is 8-10 times of that of high-speed chromatography




Slow peak appearance




Fast peak appearance vs. slow peak appearance

# EX1700S-HPLC® Overview of Main Units

## EX1700DP Ultra-high Precision Infusion System

1. High pressure stable constant-flow pump
2. High efficiency small-sized mixer

*Enhanced Detection Sensitivity!*

## EX1700UV Highly Sensitive UV Detector

1. Low noise, low drift, and high sensitivity
   Patent No. 201320217848.0
2. Optional devices are available based on user's needs including a micro-flow evaporative light-scattering detector and differential refractive index detector.

# Specifications of **EX1700**

## Infusion Unit

| | |
|---|---|
| **Model** | **EX1700DP infusion unit** |
| **Liquid Infusion System** | Double parallel reciprocating infusion pumps equipped with binary high-pressure mixer |
| **Flow Range** | 0.001-5.000 mL/min |
| **Maximum Output Pressure** | 10000psi (69MPa) (0.001-2.500 mL/min) |
| **Flow Accuracy** | ≤ ±1% |
| **Flow Precision** | RSD<0.07% |
| **GLP Function** | Providing pressure curve and flow curve, recording using frequency of piston seals |

## UV Detector

| | |
|---|---|
| **Model** | **EX1700 UV detector** |
| **Light Source** | D2 lamp |
| **Wavelength Range** | 190-700nm |
| **Spectrum Bandwidth** | 4 nm |
| **Flow Cell Volume** | 1.6μL (optical path length of 5mm) |
| **Noise** | $4 \times 10^{-5}$ AU* (dynamic, specified test conditions) |
| **Drift** | $5 \times 10^{-4}$ AU/h* (dynamic, specified test conditions) |
| **Wavelength Accuracy** | ± 1 nm |
| **Wavelength Precision** | < 0.1 nm |
| **Response Time** | 0.02, 0.1, 0.2, 0.5, 1, 2  6,adjustable |
| **Sampling Rate** | 50 sps (50 times per second) |
| **Minimum Full Width at Half Maxima** | < 0.5 sec |
| **GLP Function** | Recording spectral energy and D2 lamp burn time |

## Column Oven

| | |
|---|---|
| **Model** | **EX1700CO** |
| **Temperature Control Principle** | Air circulation heating |
| **Temperature Range** | 5°C above room temperature~80°C |
| **Temperature Acuuracy** | ±0.2°C (test at 35°C) |
| **Temperature Stability** | ±0.1°C |
| **HPLC Columns Installed** | 2 (short columns) |

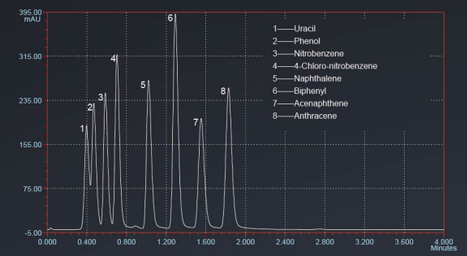
# EX1700UV

## High sensitivity UV Detector

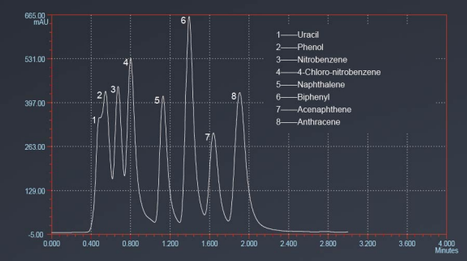
The EX1700 UV detector adopts a micro flow cell (1.6 μL volume) and a high speed A/D data acquisition card (100 samples per second)
to dramatically enhance quickly-eluted peak detection and waveform accuracy. It can measure a minimum full width at half maxima within 0.5 sec.

## Chromatogram Comparison between EX1700 and General HPLC System

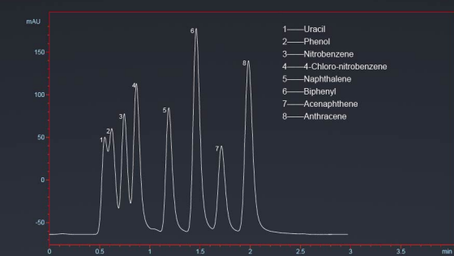
HPLC column specifications: Particle size of 2.7 μm, 2.1 x 50 mm
Flow rate: 0.3 mL/min
Mobile phase A: acetonitrile, B: water. Mixing ratio: A: 70% B: 30%
Column pressure: 25.4 MPa




**Micro flow cell allows good separation**
Micro flow cell, optical path length of 5 mm, volume of 1.6 μL




**Standard flow cell did not provide good separation**
Standard flow cell, optical path length of 8mm, volume of 8 μL




**Semi-micro flow cell did not provide good separation**
Semi-micro flow cell, optical path length of 6 mm, volume of 5 μL

**Temperature control optical bench**

**Noise（Analog signal）**
**Noise（Digital output）**
**Drift**
**Signal range（recorder）**
**Flower cell volume**
**Max Pressure**
**Max Flow rate**

# Arcus 7

## Auto-sampler

Arcus 7 auto-sampler is an analytical auto-sampler designed for UHPLC (ultra-high pressure liquid chromatograph). It can be used for injection with all brands of UHPLC (ultra-high performance liquid chromatograph). It is a highly cost-effective and premium LC auto-sampler.



## Product Specifications

| | |
|---|---|
| **Model** | Arcus 7 auto-sampler |
| **Sample Loading** | Standard tray (1) 2 mL × 54 vials (default standard configuration)<br>Expanded tray (2) 10 mL × 15 vials<br>(3) 4 mL×35 vials<br>(4) 1 mL×96 vials<br>Each side can be loaded with different tray types. The system can automatically identify the tray type. Maximum192 vials are available (1 mL vial). |
| **Vial Height** | H ≤ 52 mm (including septa and cap-mat) |
| **Metering Pump Volume** | 200 µL (precision: 0.1 µL) |
| **Injection Mode** | Full loop injection<br>Partial loop injection<br>No waste injection |
| **Injection Volume** | Full loop injection: 0.1-80 µL (maximum), 50 µL (standard)<br>Partial loop injection: 0.1-50 µL (up to 80 µL)<br>No waste injection: 0.1-50 µL (up to 80 µL) |
| **Quantitative Repeatability** | Full loop injection: $RSD_6$ ≤ 0.3%<br>Partial loop injection: $RSD_6$ ≤ 0.5% (injection volume: ≥ 5 µL)<br>No waste injection: $RSD_6$ ≤ 1.0% (injection volume: ≥ 10 µL) |
| **Memory Effect** | ≤ 0.005% (designated washing procedure) |
| **Maximum Pressure** | 10000 psi (69 MPa) |
| **Automatic Protection** | Missing vial alarm, sample needle fault alarm, jammed pipeline alarm, and leakage alarm |

# Accessories

### HPLC Column

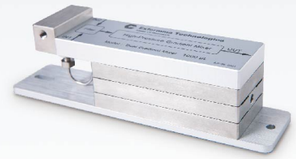
All the HPLC columns are strictly tested and selected to ensure high performance. They support a wide range of pH, and their excellent efficiency and separation capability facilitates analysis of samples under any conditions, while guaranteeing reliable stable results.

### Filter

The filter is produced according to international standards. It uses screw threads for tightening so it can be installed and removed easily. The filter membrane is designed to effectively filter as many samples as possible.

### High Precision 1000µL Mixer

The new generation high-performance mixer is compact and can quickly mix mobile phases to a homogeneous state. This mixing effect is comparable to that of advanced international mixers.

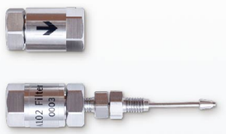


### Guard Column

The guard column is produced using universal fittings to fit all major brands and protect your HPLC column effectively.

### Online Filter

The online filer is made from stainless steel and has a built-in 0.45µm sieve to prevent granular materials in the solvent from entering the system. The sieve can be easily cleaned or replaced



### Semi-preparative Pump Mixer

The standard 2000 L static mixer for gradient analysis mixes liquids quickly and evenly. It also provides excellent gradient linearity and repeatability.


### Stainless Steel Sample Loop

The stainless steel sample loop is made of 316L stainless steel.

It makes use of high pressure tolerant finger-tight fittings that allow you to install and remove the loop easily.


### High Pressure Finger-tight Fitting

The stainless steel tube can tolerate a pressure up to 80 Mpa, and the PEEK tube can tolerate 45 Mpa. The brown ferrule is fixed in the optimum location so that it can connect to any HPLC column with no dead volume.

### Micro Mixer

The newest generations of micro mixers are available in two sizes: 80 L and 150 L. They have a compact design with a superb mixing effect. You can also use 2 or 3 mixers connected in series.

# LC-80 ChroMini HPLC

LC-80 ChroMini HPLC is designed to fit the needs of uses in special fields, such as Chemical industry,agricultural feed, teaching and training. As a cost-effectiveand integratedliquid chromatograph, the installation, operating, service and moving of LC-80 ChroMini HPLC is more convenience. On the basis of the analysis needs for food and feed industry, Wufeng have developed various application packages, such as fat-soluble vitamins, watersoluble vitamins, amino acid analys is,clenbuterol,melamine,aflatoxin,be nzopyrene and Sudan Ⅲ etc.

SMALL fiGURE
GREAT WISDOM

## Structure of LC-80 ChroMini HPLC

*Integrations | Modularity | Intelligence*

### Tray

On the left of the top situates the tray which enables the placements of 4 reagent bottles of 500ml capacity.

### Injection Valve

Basic configuration of manual injection valve.Possibility of connection to Auto-sampler.

### Infusion System

Replacement of infusion pump by micro-pump provides a smaller size and a higher intergration of unit.

M80 micro-pump


### Installation of internal chromatographic column

Erecting frame of internal column canbe ungraded into a column heater.

### Intelligent control

Intelligent control ,real-time monitoring and data sharing available.

### Detector

UV (ultraviolet absorption) detector is the basic configuration which can be updated as AA (amino acids) detector, aflatoxin detector,etc, which provides a convenient connection and operation.

Wufeng LC-80 h i g h performance liquid chromatograph is a brand new chromatographic instrument of high accuracy. The intergration, the modularity and the intelligence are all in this instrument of a small size with the convinence of maintenance and free mobility.

Adoption of the leading technology of microcomputer makes the control of unit with just the connection to the PC chromatographic working station possible.- Simplification of operation will emancipate you from the hard work in the laboratory!

Intergration reduces the distance of tubing between units and the quantity of interface.Thereby the reduction of dead volume and potential leaking point improves the overall performance and meanwhile provides a convinent maintenance.

### M80 micro-pump

The M80 micro-pump uses a unique mechanical structure and made of special materials. It can be widely used in liquid chromatography systems, ion chromatography systems, gel chromatography systems, post-column derivatization systems, and glycosylated hemoglobin meters, etc. M80 pump has super wear-resistant, stable and reliable performance.The detailed parameters of the M80 can be referred to the pump of LC-80.

## Specifications

(1) Flow Rate: 0.001 ～ 5.000 mL/min
(2) Flow Precision: RSD < 0.07%
(3) Flow Accuracy: ≤±1%
(4) Max Pressure: 40MPa
(5) Qualitative Repeatability: $RSD_6$ ≤ 0.2% (Naphthalene/Methanol standards)
(6) Quantitative Repeatability: $RSD_6$ ≤ 0.5% (Naphthalene/Methanol standards)
(7) Pressure Fluctuation: 0.1MPa
(8) Spectrum Bandwidth: 8nm
(9) Wavelength Accuracy: ±1nm
(10)Wavelength Precision: Below 0.1nm
(11) Noise: ≤ $0.25\times10^{-5}$AU(Static) ;
≤ $\pm1\times10^{-5}$AU(Dynamic, given conditions)
(12)Drift: ≤ $0.4\times10^{-4}$AU/hr(Static) ;
≤ $2\times10^{-4}$AU/hr(Dynamic, given conditions)
(13)Minimum Detectable Concentration: ≤ $5\times10^{-9}$ g/mL (Naphthalene/Methanol standards)
(14)Overall dimension: L 455×W 220×H 267(mm)