



UHPLC 3000 PLUS

**Ultra High Pressure Liquid
Chromatography System**

EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Excellent Performance

Instrument installation & various training
courses Application & regulatory compliance
service Remote diagnose & prompt response
Preventive maintenance & service plans
Proactive and comprehensive service

Professional service

Modularized design
Multi-channel pumps
Alternative injection modes
Various detectors
Custom combination

Flexible configuration

9000PSI working pressure
2.5AU Linearity range
100Hz Sampling rate
Rapid analysis achievable
More efficient, less consume



Typical Configuration



Isocratic System with Manual Injector

This isocratic system could deliver one type of mobile phase. By combining the best performance cost ratio, system stability and maintenance simplicity, this system is an ideal solution for routine QA/QC analysis and GPC/SEC application. It can also be simply upgraded into gradient system with autosampler to boost your productivity.



Quaternary System with Autosampler 3000 Plus

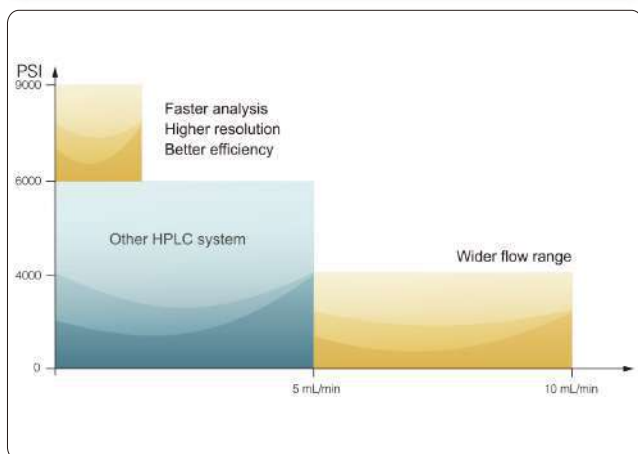
Quaternary system possesses the advantage of great flexibility, and it can further be automatized by combining our autosampler. This combination could fulfil the complex requirements from pharmacy, environmental, food safety, petrochemical engineering, agricultural & farming fields. With the control from ALT Chromatography workstation, it realized full automatic analysis, report, system flush, shut down and then raised up the efficiency.



Binary System with Autosampler

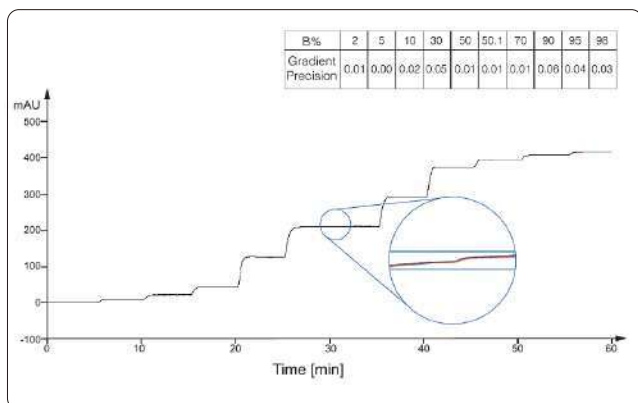
With excellent gradient precision & optimized delay volume, this binary system plus autosampler is ideal for complex gradient application or be used in combination with mass spectrometry. With the convenience of autosampler and various detector, the user could easily get more data.

3000 Plus High Pressure Pump



Precise Flow Rate & Gradient

3000 plus serial high pressure injection pump could monitor the pressure status by its digital signal processor and adjust the motor operation status based on working parameters and solvent type. This real time feedback mechanism plus the high performance proportional valve realized the steady flow output as well as precise .

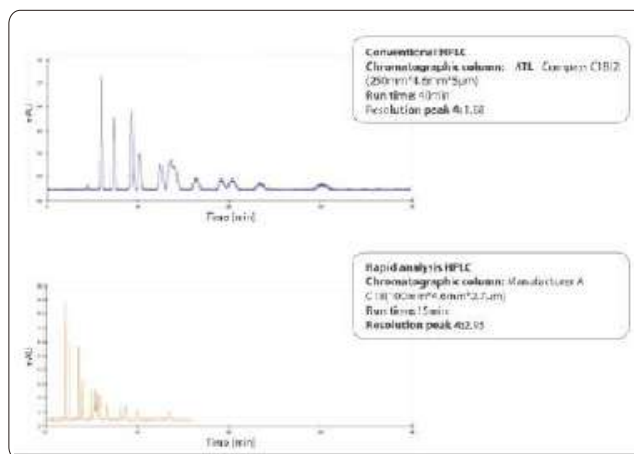


Column: back pressure tube (1000PSI)
Mobile Phase A: 1% isopropanol aqueous solution
Mobile Phase B: 0.2% acetone/1% isopropanol aqueous solution
Flow rate: 1.0ml/min
Temperature: room temperature

Performance Highlights

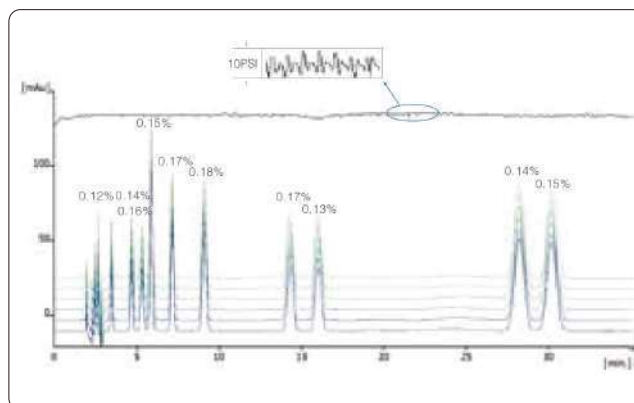
High Precision

3000 plus serial high pressure pump could reach 9000psi (62Mpa) working pressure with the flow rate up to 10mL/min. This high performance extend the application field from normal HPLC to Fast HPLC. With the help of 100Hz detecting and high precision sampling, you can take advantage of small piratical size column and reduce solvent consumption.



Stable Pressure

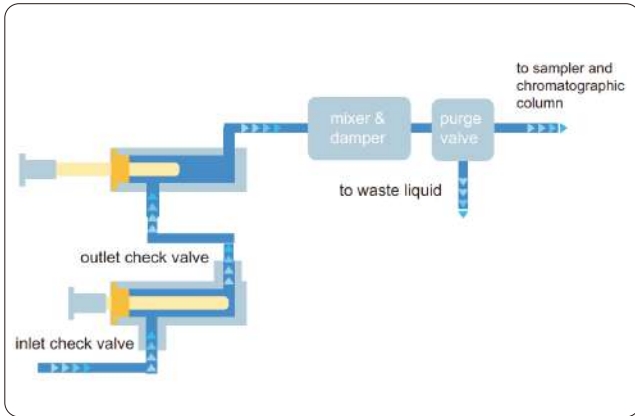
3000 plus serial high pressure pump's pressure pulsation could be controlled under 10psi with best qualitative repeatability based on it state of art patent design, precise engineering and strict quality control.



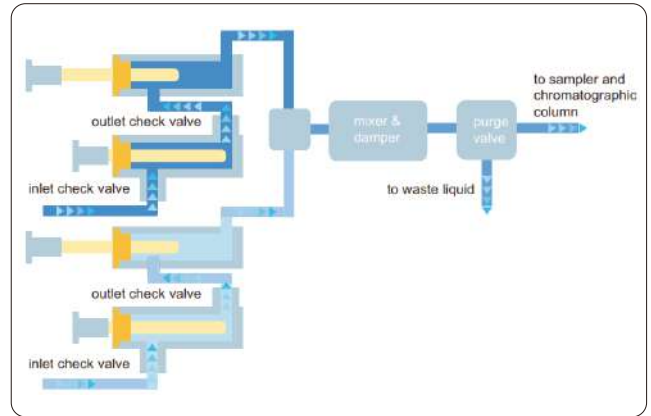
Chromatographic column: Manufacturer A C18(250 mm*4.6mm* 5µm)
Mobile Phase: 0.05mol/L phosphate buffer(pH = 3.5)/MeOH/acetonitrile (50/35/15)
Flow rate: 1.0ml/min
Temperature: 40°C
Detection wavelength: 254nm
Injection volume: 20µL

Working Principle

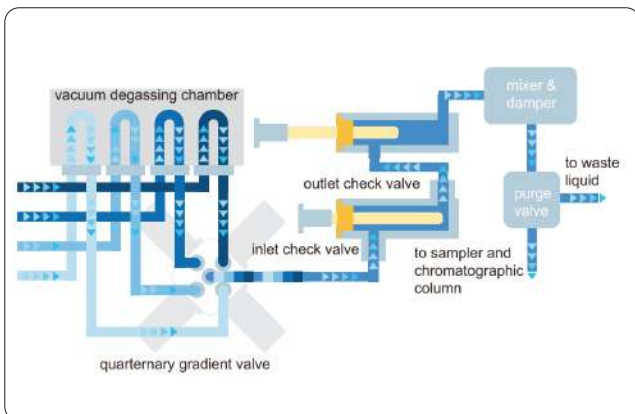
3000 plus serial high pressure pump provides isocratic, binary and quaternary model base on request.



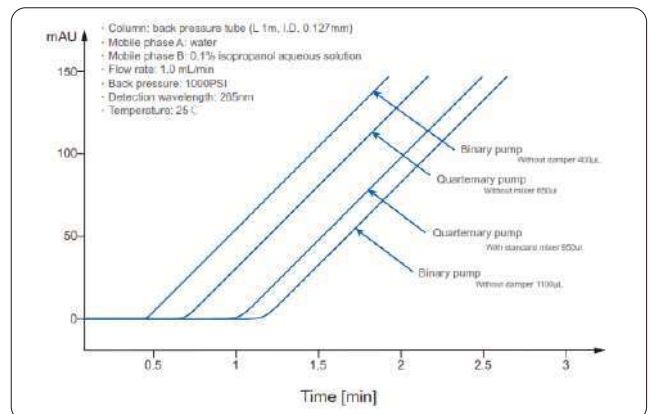
- Isocratic pump for regular QA/QC usage



- Binary pump for high-throughput & fast analysis



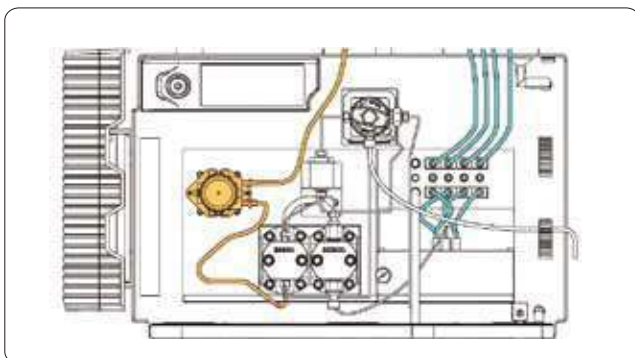
- Quaternary pump for pharmaceutical, food and environmental test.



- Lower delay volume enables a cleaner & faster response to the gradient changes.

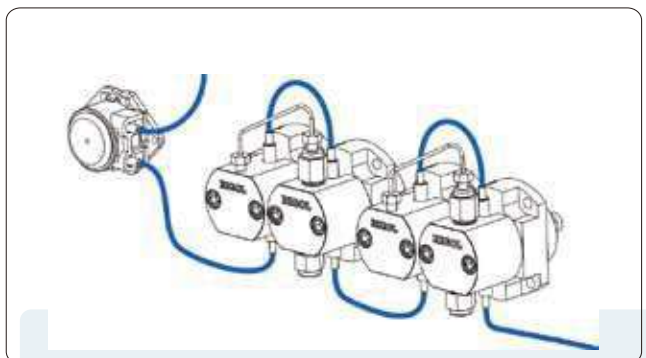
Special Design

Integrated Design



3000 plus Quaternary gradient pump combine online degasser and seal wash function. This integrated design reduce delay volume, save bench space and simplify maintenance procedure.

Built-in Seal Wash Function



Seal wash is a standard parts in 3000 plus serial HPLC system. The part could flush the salt crystallization on the piston and extend the service life of sealing rings.

3000 Plus Autosampler

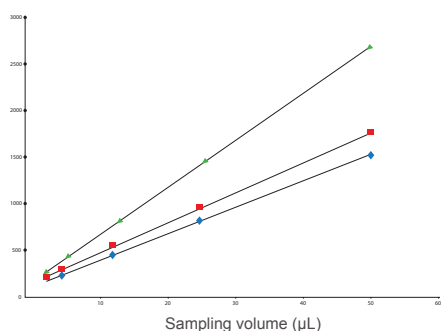


Performance Highlights

High Precision

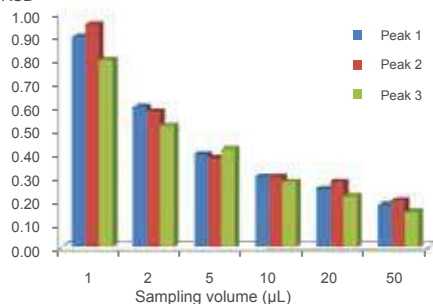
3000plus autosampler delivers high injection accuracy of 0.3% RSD, thanks to its high precision machining parts and advanced control algorithm. It also employ a design of changeable sampling loop, which extend linearity range and meet the need of more applications.

Peak area %RSD



- sampling volume from 2.5 to 50µL, correlation coefficients of the 3 compounds are all 0.9999

Peak area %RSD



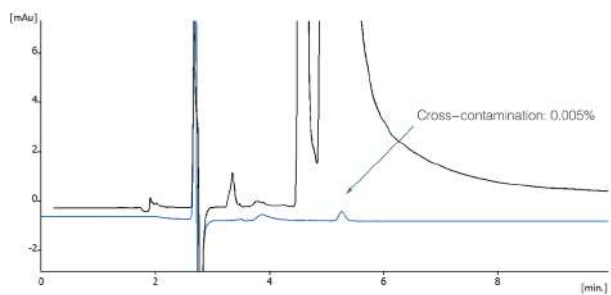
- Peak-area repeatability of 3 compounds with different sampling volume (RSD%)(n=6)

Low Cross Contamination

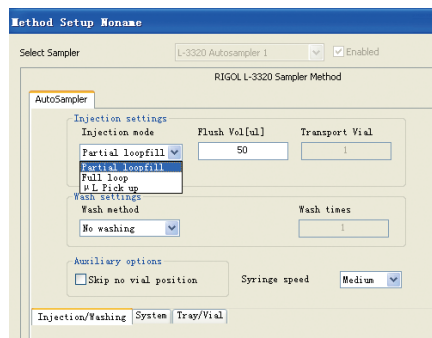
The special design of needle washing assembly could clean interior and outside of the sampling needle separately, combing the patented sampling needle design and extra precision inner and outer polishing technology, it could reduce the carryover of sample and avoid cross contamination.

Multi Injection Mode

3000plus support three sampling mode including full loop, partial loop and micro pick-up injection for different requires. It could be easily choice in the method editor without hardware replacement.



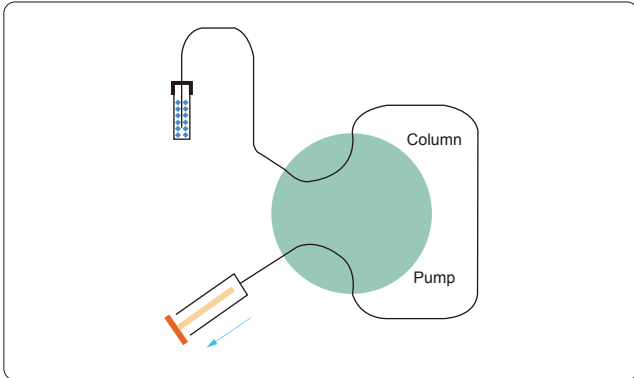
Chromatographic column: ATL (250 mm x4.6mm x 5µm)
Mobile phase: MeOH/Water(90/10)
Sampling volume: 10µL
Cross-contamination: 0.005%(based on naphthalene-methanol solution)



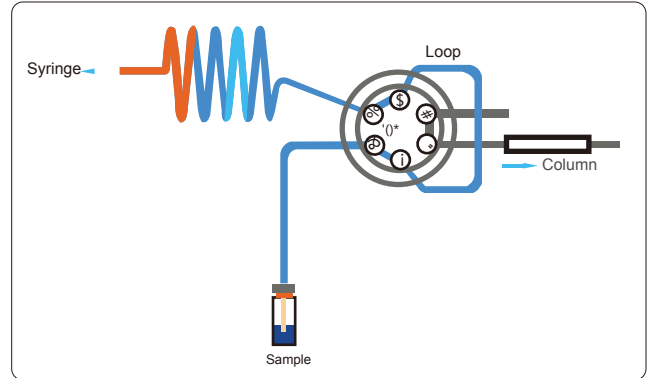
In the Method Setup interface you can simply choose to click a different injection mode, then the replacement is completed.

Working Principle

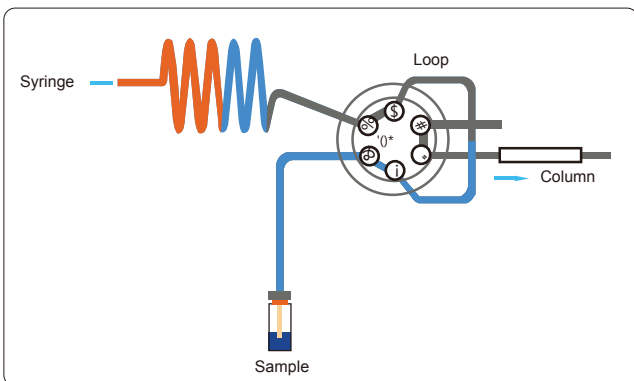
Three Sampling Mode



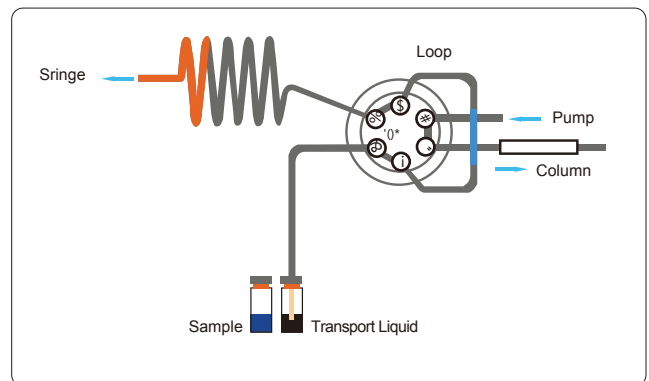
- 3000 plus AutoSampler adopt suction sampling principle with simple & reliable structure to reduce delay volume, it divided into triple specific sampling modes.



- Full loop injection possess best sampling precision, with the support of changeable sampling loop, this mode fulfill most requirements.



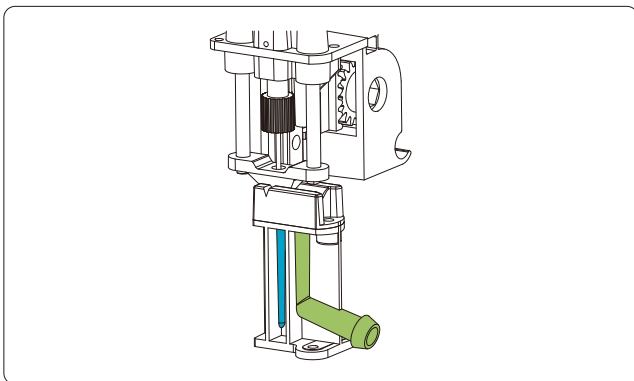
- Partial injection has the best and most flexible performance, you can set the injection volume to match the application.



- Micro Pick-up mode was suitable for small quantity and precious sample, the injector will only pick up the setting volume sample and use the suitable

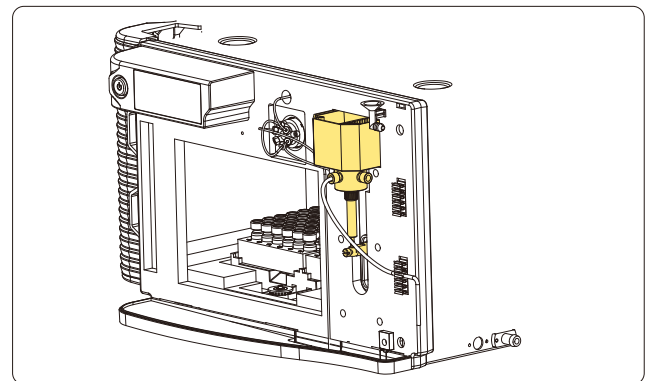
Special Design

Build-in Needle Wash Assembly



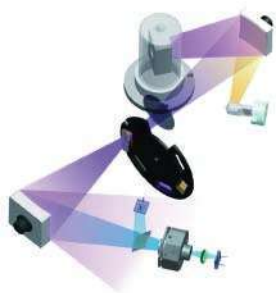
- The build-in needle wash assembly has two washing positions for inter and outer needle wash separately, this double wash mechanism reduced the carryover significantly.

Front Access to Maintenance Parts



- All maintenance parts could be reached on the front side, which simplify the service procedure and lower maintenance cost.

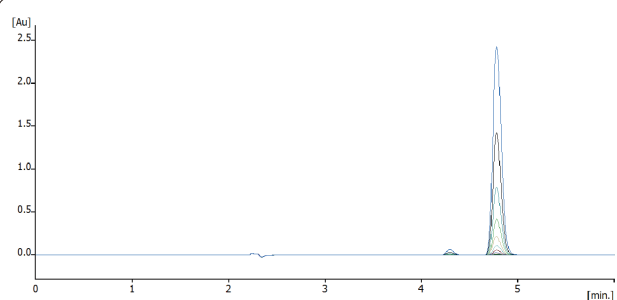
3000 Plus UV-VIS Detector



- Proprietary optical design for improved signal to noise ratio.

Wider Linearity Range

Adopt unique light path design, multi color optical filter and high quality grating, the detector realized more lower stray light, and extend the linearity range to 2.5AU.

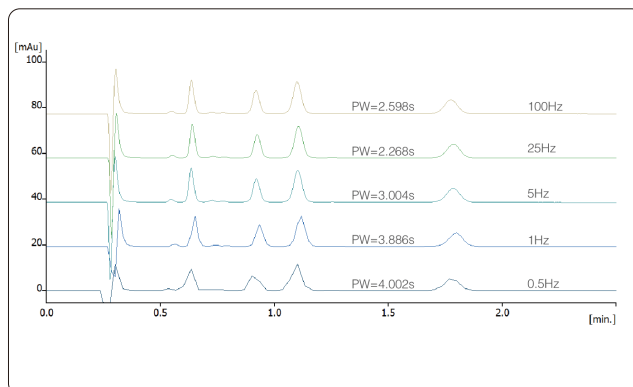


The detector keeps excellent linearity up to 2.5 AU absorbance

Performance Highlights

High Sampling Rate

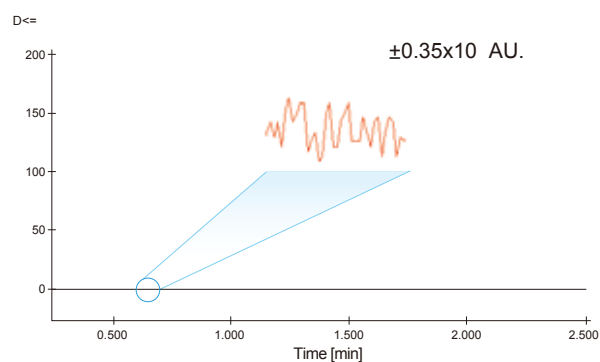
As support by unique high speed signal processing technology, 3000plus UV - VIS detector realized 100 Hz sampling rate, which make the detection of narrow peak with width lower than 5s possible. This high sampling rate also helps to record the chromatography peak accurately and get the best resolution.



- 100Hz data sampling rate means that detection of peaks sharper than 5s wide is possible with excellent separation resolution.

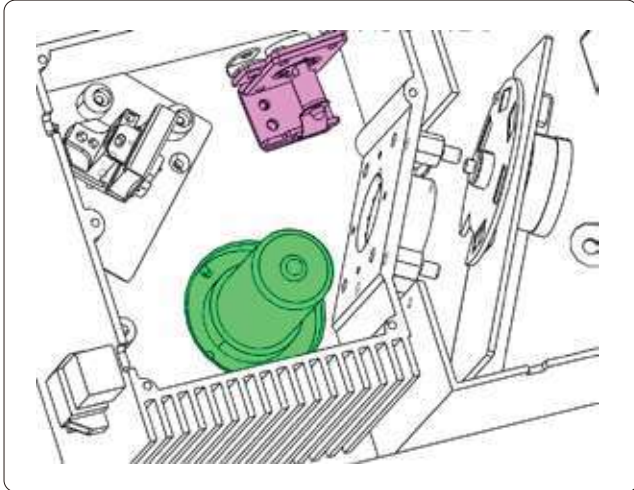
Low Noise

3000 plus have a high performance SNR by the patent electric and structure design.



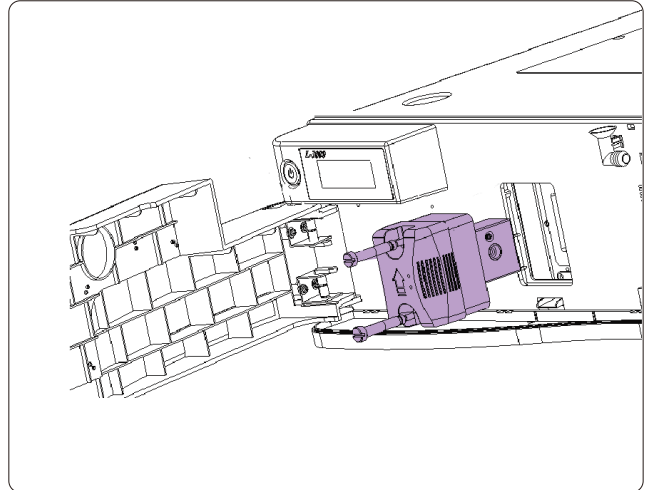
Working Principle

Dual Lamp Design



- 3000 plus UV-VIS detector employ a dual lamp design, the deuterium & tungsten lamp enable the detector to cover both UV and visible range and fulfill the visible section detection and cover more application scope.

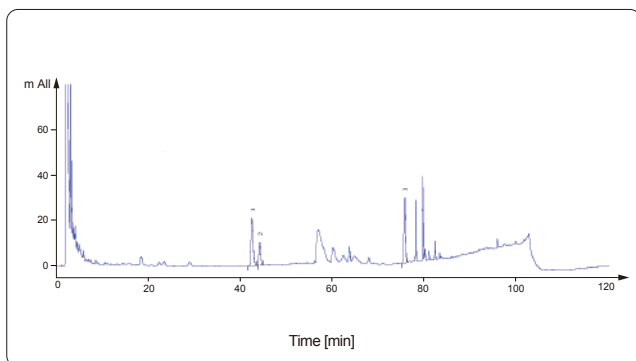
Easy Maintenance Flow Cell



- The flow cell adopt modular design, it could be taken off by only 2 screws removing, very easy to maintenance.

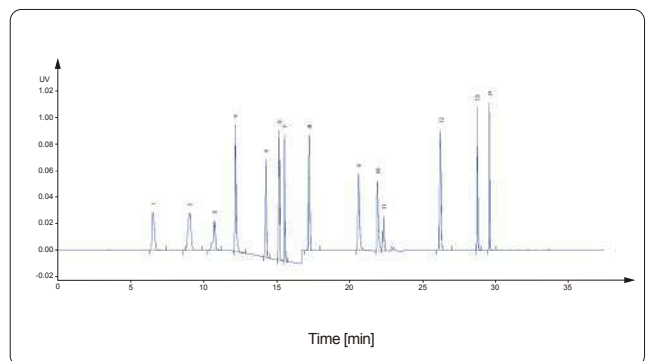
Application Notes

3000 plus shows great stability, especially in those applications with longrun time and low detecting wavelength, this advantage can be perfectly shown by the 120min run.



Chromatographic column: ATL Compass C18(250mm*4.6mm*5 μ m)
 Mobile phase: water/acetonitrile; gradient elution
 Flow rate:1.0mL / min
 Column temperature:40°C
 Detection wavelength:203nm
 Injection volume:10 μ L

3000 plus can run wavelength program , which means switching detection wavelength during acquisition. This feature realized the programmable detection of several analytes with different chromophore.



Chromatographic column: Manufacturer AC18(100 mm*4.6mm*2.7 μ m)
 Mobile phase:20mM aqueous ammonium acetate/acetonitrile;
 gradient elution
 Flow rate: 1.0mL / min
 Column temperature: 40°C
 Detection wavelength: wavelength time program
 Injection volume: 20 μ L

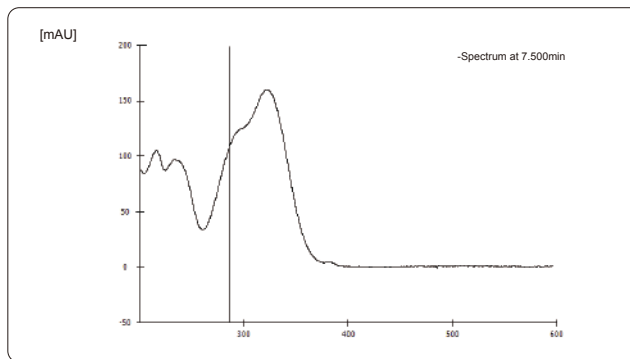
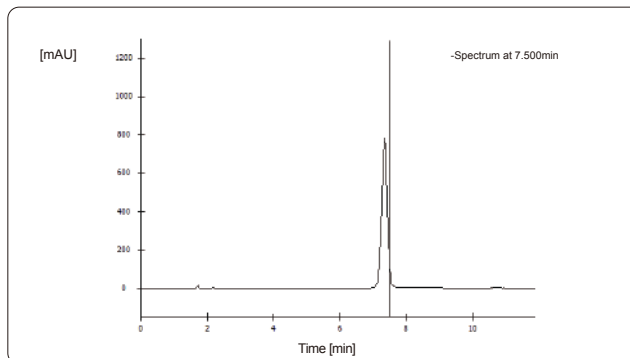
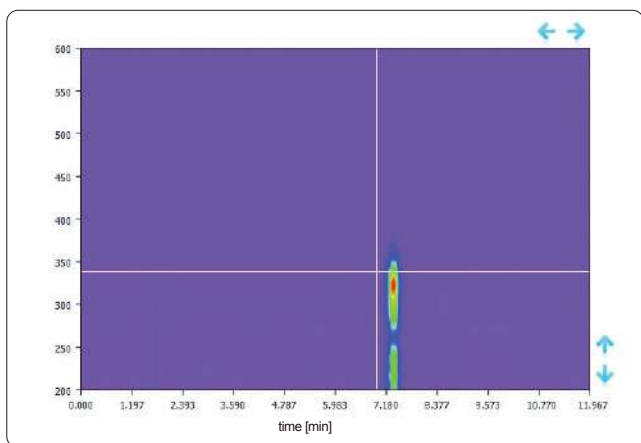
3000 Plus Diode Array Detector



Performance Highlights

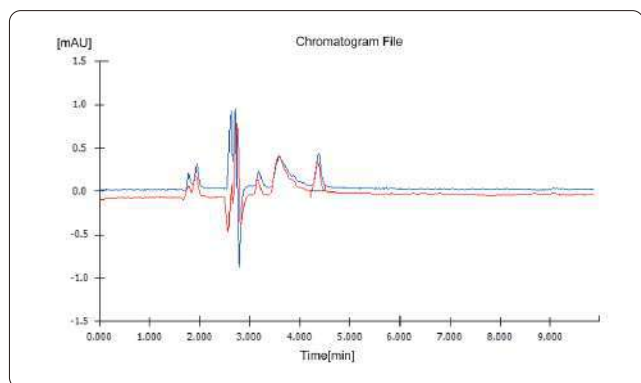
High Resolution Full Spectrum Scanning

3000plus has a 1024 diode array sensor with pixel resolution of 0.6nm. Combine with high quality optical grating, it could record full high resolution spectrum while chromatogram recording.



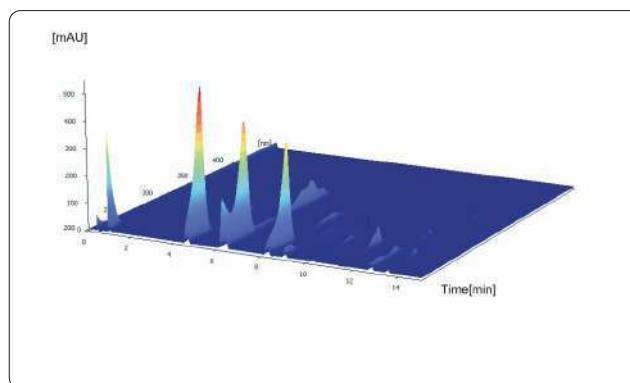
High Sensitivity

3000 plus realized $\pm 0.6 \times 10^{-5}$ AU noise level by its advanced optical and electric design, and gain more lower detection limit.



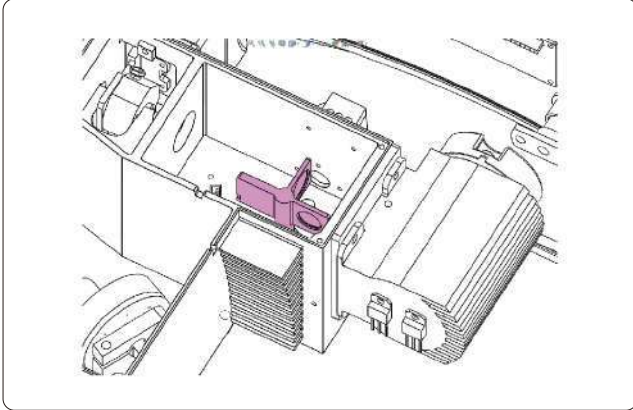
High Sampling Rate

ATL remains and advances the high sampling rate character of UV detector, and keep 100 Hz sampling rate with full spectrum scanning. Users can acquire high resolution spectrum, and also could extract chromatogram for quantitative analysis.



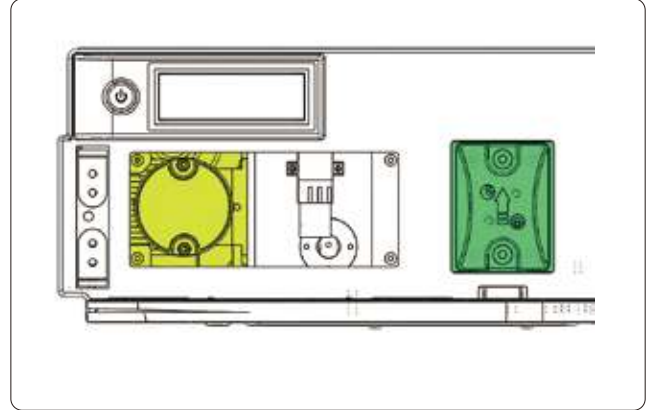
Working Principle

Easy Calibration Function



- 3000 plus could realize full spectrum calibration by mercury lamp standard emission lines, and ensure the instrument stable and reliable by double inspecting the wave length accuracy via deuterium lamp characteristic peak and build-in holmium oxide filter.

Easy Accessed Lamp

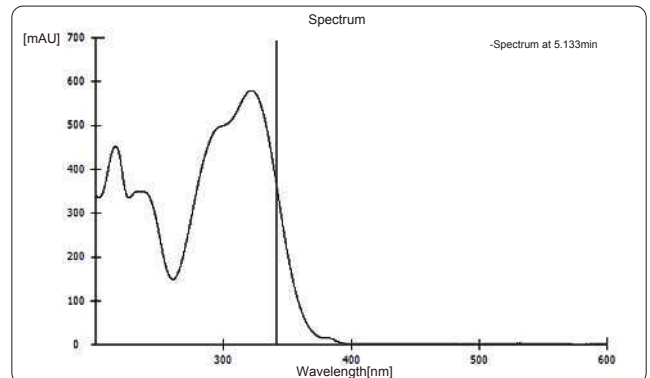
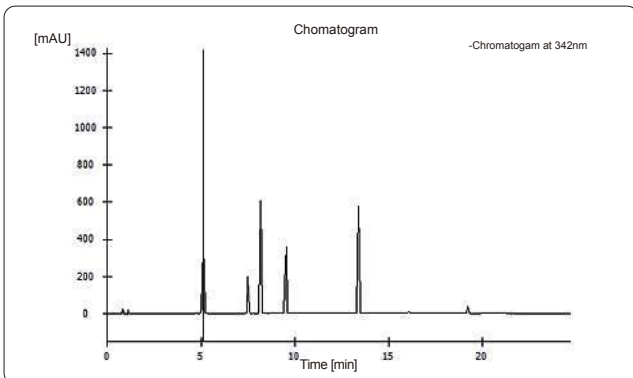
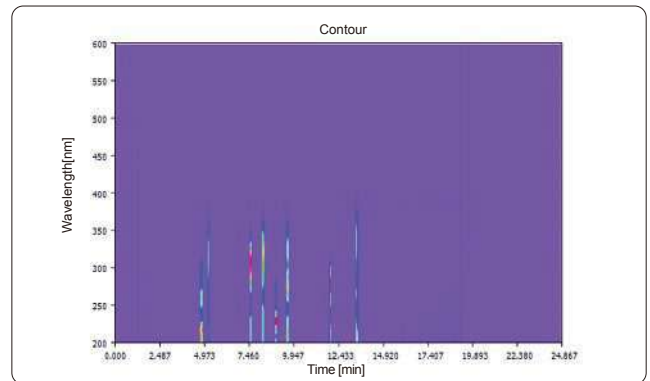
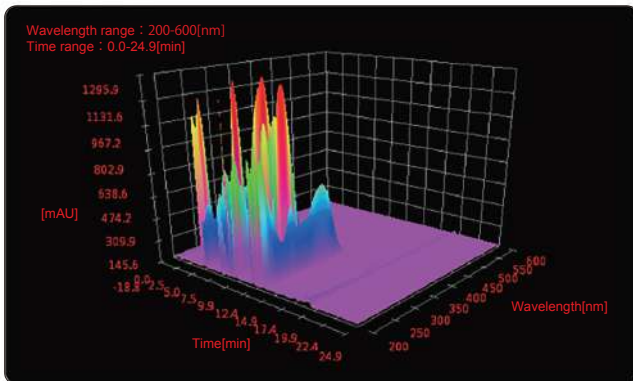


- 3000 plus DAD adopt light prepositioning design, and equipped with easy disassembling flow cell. Client could do the lamp replacing independently and then reduce the future maintenance cost.

Applications

The chromophore of the eight phenols in olive oil varies a lot, those analytes must be monitored at different wavelength and the retention time is similar, those realities makes it impossible to analysis it by UV-VIS detector. DAD possess the ability of multi-wavelength detection and full spectrum acquisition, perfect for qualitative and quantitative analysis.

Chromatographic conditions
 Chromatographic column: Manufacturer AC18(100mm*4.6mm*2.6μm)
 Mobile phase: 0.2% aqueous phosphoric acid/acetonitrile; gradient elution
 Flow rate: 1.0mL / min
 Column temperature: 28°C
 Injection volume: 5μL



Evaporative Light Scattering Detector



Performance Highlights

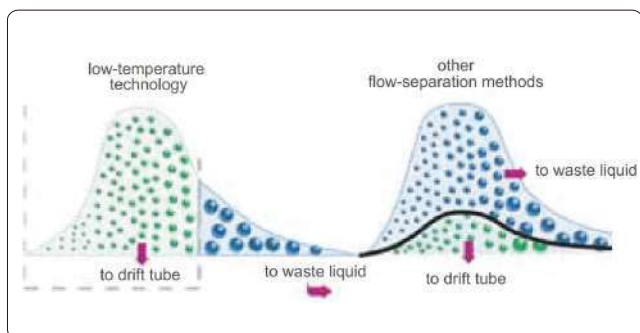
Low-Temperature Evaporation

SEDEX Automated Gain Adjustment (SAGA)

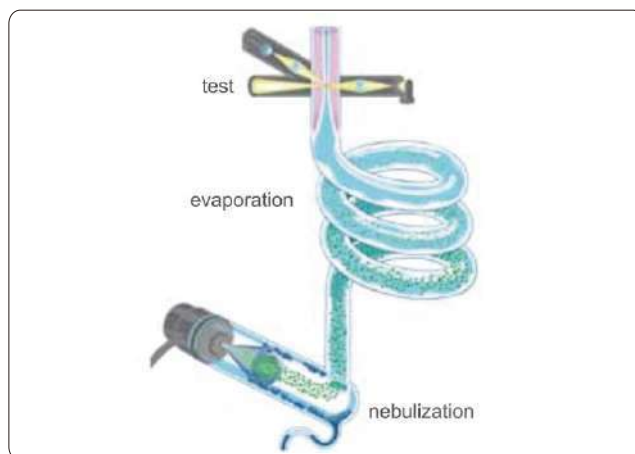
SAGA is an innovative gain control available when it is driver-controlled by software. SEDEX LC automatically adapts the gain setting to avoid any off-scale saturation of the detector.

Easy Maintenance

A single and dedicated SEDEX LC HPLC nebulizer and an innovative cell design minimize band broadening. This nebulizer covers the flow rate range from 100 μ L/min to 2.5mL/min and can be readily and quickly mounted and dismantled.

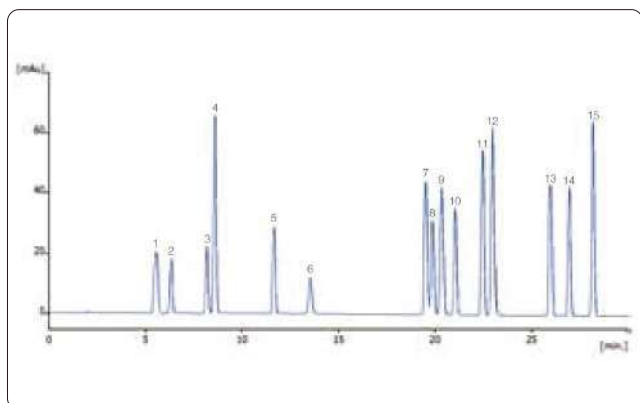


With low-temp evaporation technology, the 3000 plus can dramatically reduce baseline noise to improve sensitivity.



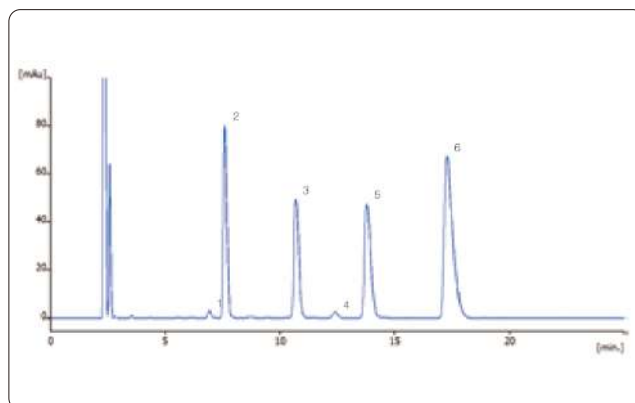
Application

Determination of 15 underivatized amino-acids via HPLC-ELSD



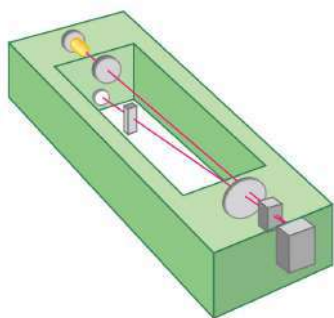
Chromatographic column: ATL (250 mm x4.6mm x 5 μ m)
Mobile phase: 0.2% Heptafluorobutyric Acid /MeOH; gradient elution
Temperature of drift-tube: 40°C
Increment: 7

Determination of gentamycin sulfate injection via HPLC-ELSD



Chromatographic column: ATL (250 mm x4.6mm x 5 μ m)
Mobile phase: 0.2mol/L trifluoroacetic acid solution/MeOH (92/8)
Temperature of drift-tube: 50°C
Increment: 6

Refractive Index Detector



3000 Plus achieve better stability and repeatability by inner temperature control system.

Performance Highlights

Broad Application

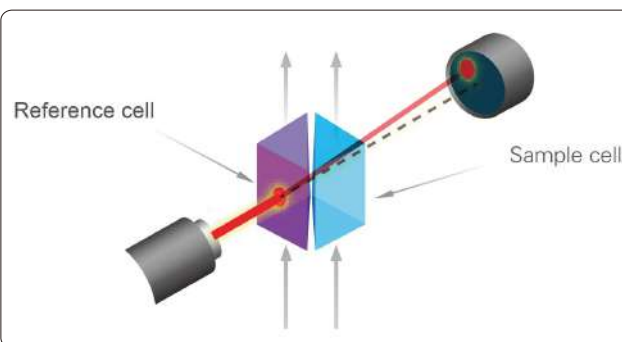
Detection is based on a universal property of all analytes and does not require the presence of a chromophoric group, electroactive group, etc.

Stable Performance

Base line will be rapidly balanced by the inner temperature control system. And prevent the influence due to the outside temperature floatation.

Easy Operation

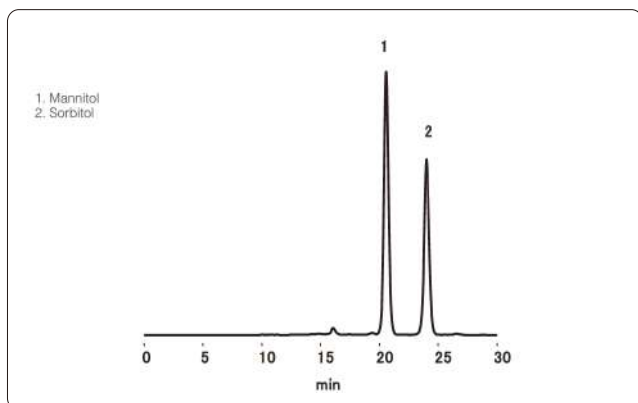
Preposition operation panel will help you set the instrument in several steps, and no need to revise the parameter during the operation. This will reduce the learning cost and enhance the efficiency.



3000 Plus can detect all analytes that have different refractive coefficient in the mobile phase.

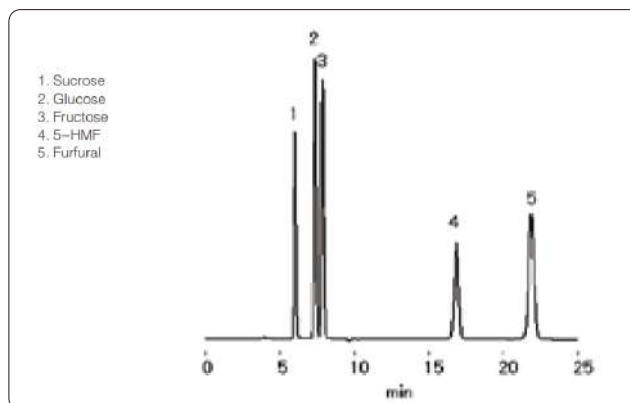
Application

Analysis of Mannitol according to EP method



Chromatographic column: EP SC1011-7F (7.8mmI.D. x 300mm)
Mobile phase: Water
Flow rate: 0.5mL/min
Column temperature: 85°C

Analysis of Sugar and Furfural



Chromatographic column: SUGAR KS-801 (8.0mmI.D. x 300mm)
Mobile phase: Water
Flow rate: 1.0mL/min
Column temperature: 80°C

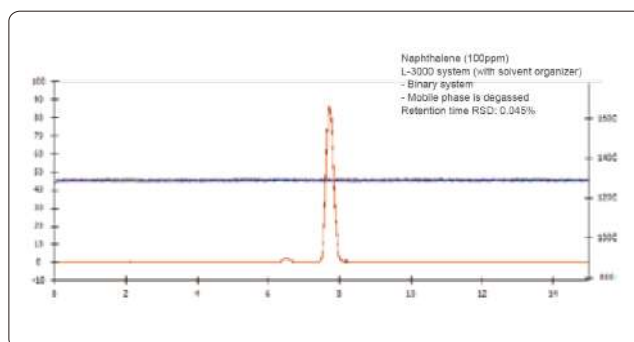
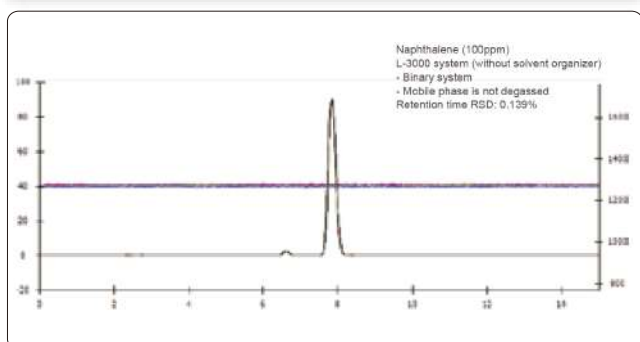
3000 Plus Solvent Organizer



Performance Highlights

Ultra Experience Operating

3000 Plus UHPLC system equipped with L-3100 serial solvent organizer, which could remove the bubble influence effectively, and reduce the pressure fluctuation & base line noise.

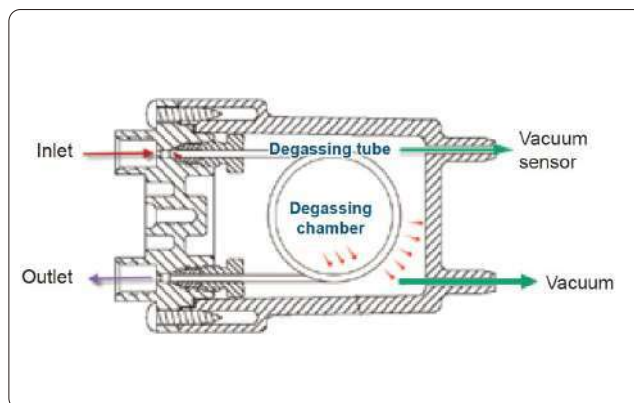
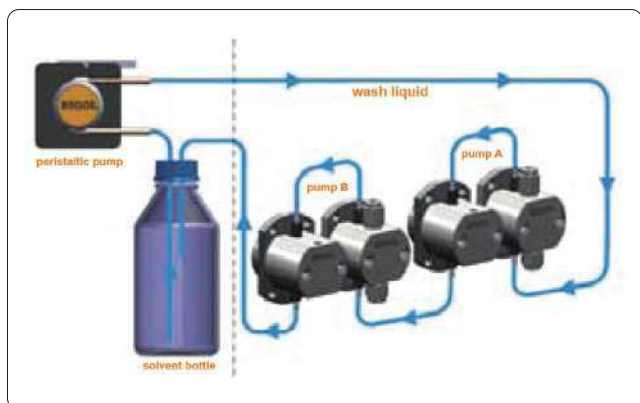


Pole Washing System

The washing system composed with solvent organizer and pump coordination, it could wash the pole and sealing ring salt crystallization and prolong the service life.

High Efficiency Degasser

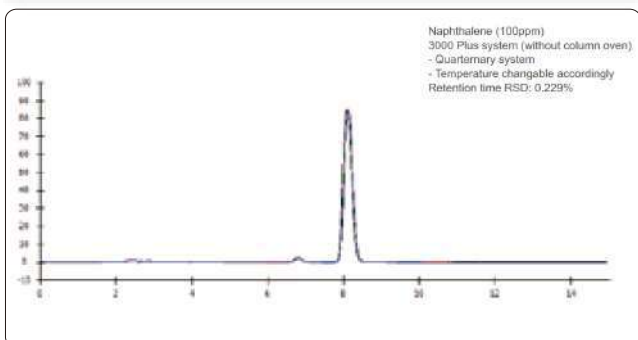
3000 Plus solvent organizer equipped with 2-Channel degasser which will remove the remaining gas dissolution in the mobile phase, and make the pump operation more stabilized and reduce the base line noise.



Bubbles Damages

- (1) It will lead to the big base line noise, and influence the base line till it could not be regularly works.
- (2) It might raise the problem with single direction valve, especially will cause big pressure floatation once you choice the pressure floatation control option.
- (3) Gradient mixing will generate the bubbles due to different characters of solvents. None degassing solvent provide the condition of bubbles generation.
- (4) Influence the detector operation, likes fluorescence quenching, reduce the sensitivity of FLD.

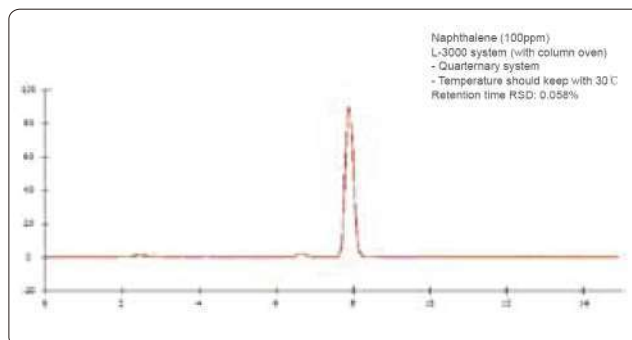
3000 Plus Column Oven



Performance Highlights

Excellent Testing Results

3000 Plus HPLC system work with 3000 Plus column oven, which could minimize the impact of environmental factors and then guarantee the superior results.

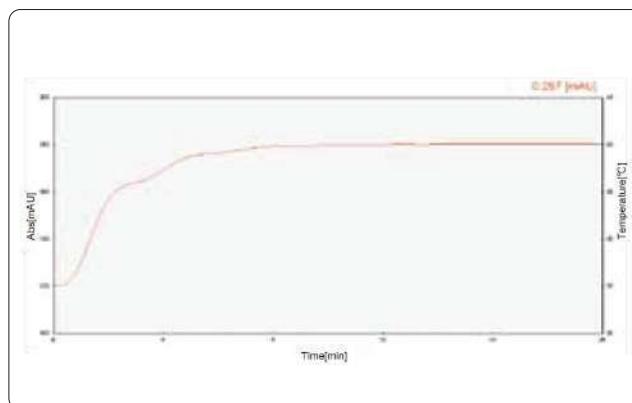
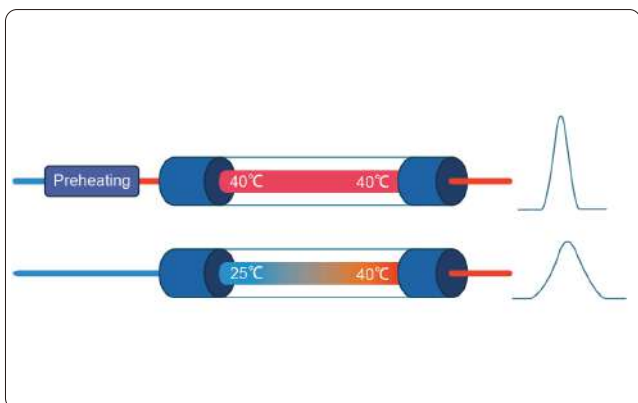


Preheating Function

Via preheating treatment, mobile phase will be reach rated temperature before coming into the column, so avoid the unbalance temperature status in the column, then avoid the influence of temperature floatation also.

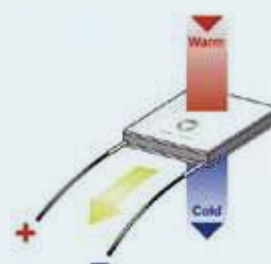
Precision Temperature Control

3000 Plus utilized the semiconductor heating technology, and avoid the over shoot of temperature raising, then ensure the stable temperature raising and precision control.



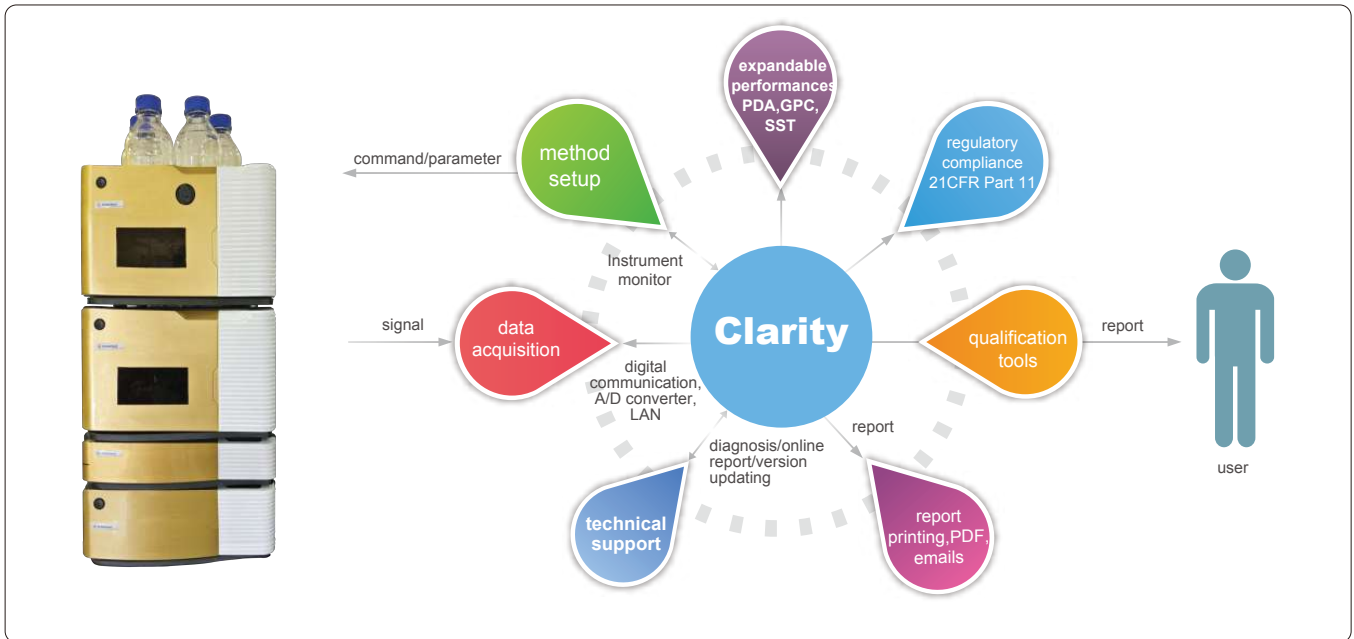
What is the semiconductor temperature control?

Utilized the Peltier reaction of semiconductor material, once the DC go through two different semiconductor material assembly couple, the couple will absorb and release the heat, so it could realized the cooling or heating target. The feature is, there is no any mobile parts and more reliable also.



Clarity Chromatography Workstation

Clarity workstation furthers the capability of 3000plus series HPLC system with Analysis solution research and development, instrument control, data acquisition and processing, report generation, and traceable record management with versatile extensibilities.



© Compliance with FDA 21 CFR Part 11/GMP/GLP

User List: [admin]

Other Users Can: Read & Write, Read, No Access

User Access Rights: Open User Accounts, Open Configuration, Edit Method, Edit Chromatogram, Edit Calibration, Projects, Import Chromatogram

Access To: Instrument 1, Instrument 2, Instrument 3, Instrument 4

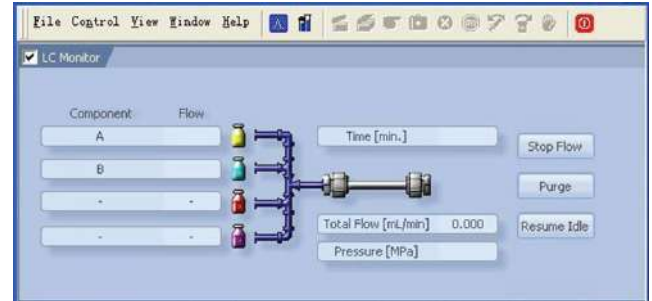
Other Rights: Edit Sequence, Edit Report Style, Select Method, Open Audit Trail Settings, Archive / Restore, Post Run Settings

Change Password, Select Certificate, Clear Certificate, Certificate For Exporting To PDF

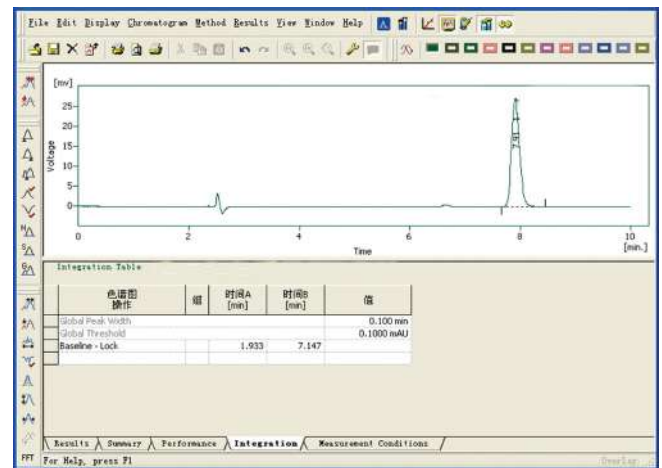
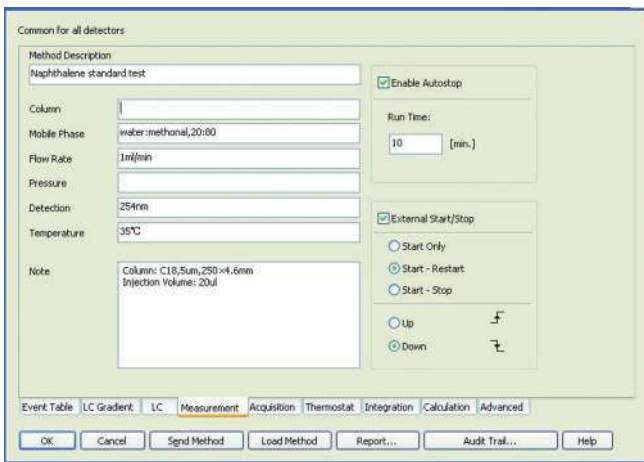
OK	Time	Type	Analyst	Instrument	Area	Description	User
1	2012-4-13 18:42:04	System	System	System	System	End System	sn00692
2	2012-4-13 18:42:04	Adminis	Instrument	Instrum		Close Instrument	sn00692
3	2012-4-13 18:42:04	Adminis	Instrument	Acquisi		Not ready (no method sent): Instrument was aborted by user	sn00692
4	2012-4-13 18:42:04	Adminis	Instrument	Files		Save File c:	sn00692
5	2012-4-13 15:13:44	Adminis	Instrument	Chromat	C:		sn00692
6	2012-4-13 15:13:44	Adminis	Instrument	Files		Open File C:	sn00692
7	2012-4-13 15:13:43	Adminis	Instrument	Files		Open File c:	sn00692
8	2012-4-13 15:13:43	Adminis	Instrument	Files		Open File c:	sn00692
9	2012-4-13 15:13:43	Adminis	Instrument	Method		Rename.MET - Method has been created.	sn00692
10	2012-4-13 15:13:43	Adminis	Instrument	Files		Open File c:	sn00692
11	2012-4-13 15:13:43	Adminis	Instrument	Instrum		Open Instrument	sn00692
12	2012-4-13 15:13:40	System	System	System	System	Message Can't find hardlock key ! Press F1 for help. OK	sn00692
13	2012-4-13 15:13:38	System	System	System	System	Start System, Version: 3.0.6.539	sn00692
14	2011-9-13 16:24:19	System	System	System	System	End System	sn00692
15	2011-9-13 16:24:12	System	System	System	System	Message Can't find hardlock key ! Press F1 for help. OK	sn00692
16	2011-9-13 16:24:04	System	System	System	System	Start System, Version: 3.0.6.539	sn00692
17	2012-7-3 14:43:45	System	System	System	System	User Account Dialog Canceled	sn00692
18	2012-7-3 14:42:30	System	System	System	System	User Account Dialog Opened	sn00692
19	2012-7-3 14:42:27	System	System	System	System	Message Can't find hardlock key ! Press F1 for help. OK	sn00692
20	2012-7-3 14:42:25	System	System	System	System	Start System, Version: 3.0.6.539	sn00692

Session: Daily Audit Trail: 2012_07_03 + 2011_09_13 + 2012_04_13
For Help, press F1

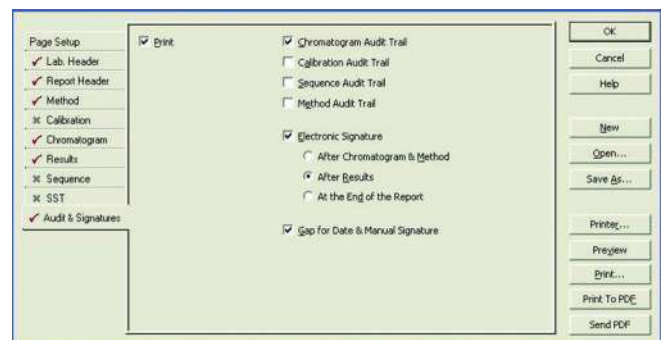
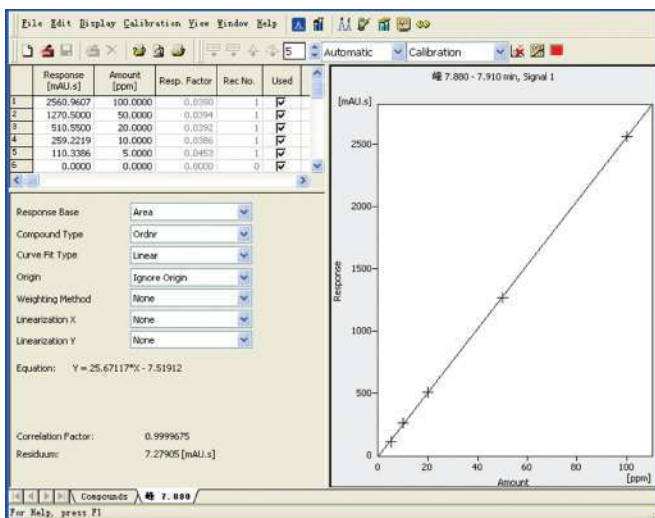
Direct instrument control plus intuitive user interface give user the simplicity of operating the instrument from software.




Simple method editing interface and powerful data processing with more than twenty integral functions.





Various calibration procedures and customizable report editor.





Specification


Solvent Organizer		3000plus Solvent Organizer	3000plus Solvent Organizer
	Online	standard Configuration	
	Online Degassing	None	2-channel (480µL/channel)


Delivery Pump		3000plus Isocratic pump	3000plus Binary pump	3000plus Quarternary pump
	Online Degassing	None	None	4-channel (480µL/channel)
	Flow Rate Range	0.0001mL/min -10.000mL/min (increment 0.001mL/min)		
	Flow Rate Accuracy	±0.5% (@1mL/min, water)		
	Flow Rate Precision	≤0.07% RSD (@1mL/min, water)(ASTM)		
	Max. Pressure	9,000 psi (Standard) 12,000 psi (Optional) 18,000 psi (Optional)		
	Pressure Pulsation	≤1% (@1mL/min, water, backpressure 60Mpa)		
	Gradient Accuracy	None	+0.5%	
	Gradient Rreproducibility		≤0.2% SD	≤0.2% SD
	Flow Precision	0.1% RSD		
	Pump Seal Wash	Automatic		

Column Oven		3000plus Column Oven
	Temperature Range	10°C below ambient to 100°C
	Temperature Accuracy	± 1.0 C
	Temperature Stability	± 0.1 C
	Temperature Precision	±0.1 C
	Column Length	300mm, upto two columns,50mm guard column
	Display	4 digits
	Power Consumption	145W


		Evaporative Light Scattering Detector
	Light Source	Tungsten / Halogen/LED 470mm
	Temperature Range	20-100°C, 0.1°C Increment, feedback accuracy to 0.1°C
	Flow Rate	0.1mL/min - 2.5mL/min (standard)
	Air Consumption	<3.0L/min
	Air Required	>5L/min nitrogen gas or air, 65 Psi
	Nebulizer(high flow rate)	100-3000 µl/min
	Nebulizer chamber	Thermally controlled, Heater 0-100%, Cooler(on/off)
	Gain Setting	0-1000
	Sample Rate	upto 80 Points
	Optics	Heated Optics Bench
	Lamp calibration	Pre aligned assembly
	Detector	PMT
	Scattering angle	60 Degree
	Measurement range	0.1-2000light scattering units full scale
	Angle Output	2, LS units nebulizer,drift tube, CHM Gas pressure


UV-VIS Detector		3000plus UV-VIS Detector
	Wavelength	190-800 nm
	Light Source	Deuterium lamp, Tungsten lamp
	Spectral Width	8nm
	Wavelength Accuracy	±1 nm
	Wavelength Precision	0.2 nm
	Noise	±0.25x10 ⁵ AU(ASTM)
	Drift	1x10 ⁴ AU/Hz
	Linear Range	>2.5AU (ASTM)
	Max. Sampling Rate	100 Hz
	Flowcell Pressure	1200 PSI
	Flowcell light Path	10 mm
	Flowcell Volume	12µL
	Detection limit	5x10 ⁹ g/mL
	Lamp Hour	D2 lamp > 2000hr Lifetime
Repeatability	0.1 nm.	

Diode Array Detector		3000plus Diode Array Detector
	Diode Array	1024 diodes
	Wavelength	190 - 800 nm
	Light Source	Deuterium lamp & Tungsten lamp
	Spectral Resolution	0.6 nm/pixel
	Spectral Width	4.8 nm
	Wavelength Accuracy	± 1 nm
	Wavelength Precision	± 0.1 nm
	Noise	± 0.6x10 ⁵ AU (ASTM)
	Drift	5x10 ⁻⁴ AU/Hr.
	Linear Range	>2 DAU (ASTM)
	Max. Sampling Rate	12 channels, 100 Hz Full spectrum, 100Hz
	Flowcell Pressure	1200 PSI
	Flowcell Light Path	10 mm
	Flowcell Volume	12 µL, 2.5µL (semi-micro)
	Detection Limit	2x10 ⁹ g/mL (naphthalene)
	Wavelength Calibration	Mercury peaks and built-in homium oxide filter
	Temperature Operating Range	5°C below ambient temp to 50°C (temperature control facility)
	Lamp Hour	D2 lamp > 2000hr Lifetime
	Rise Time	0.0s - 9.9s
	Power	AC 10V / 220V, 50Hz / 60Hz
Consumption	110W	
Dimensions	420mm x 280mm x 175mm	

Refractive Index Detector		3000plus Refractive Index Detector
	Flow cell type	3 chamber-type
	Measuring method	Deflection type
	Refractive Index range	1.00 to 1.75
	Measuring range	0.125 to 600µ RIU
	Drift	1x 10 ⁻⁷ RIU/h (pure Water, Response : 1.5 sec)
	Response	0.1,0.25,0.5,1,1.5,2,3,6 sec
	Flow rate(Typical)	0.2 ~3.0mL/min
	(Max.)	10mL/min(solvent: pure water)
	Auto Zero	Full Auto Zero
	Auto Zero Range	All Range
	OFF - Set Response	25 nRIU
	Noise	< ± 1.5x10 ⁻⁹ RIU

Integrator output	DC 0 TO 1 V
	(Sensitivity) 4m V/ μ RIU, 16m V/ μ RIU)
Cell Volume	8 μ l
Max .back Pressure	50kpa
IN to Cell	ca .80 μ L
Internal Volume	cell to Out :ca 600 μ L
	ALL (Cell to Out :ca 690 μ L
Recorder output	0 to 10m V/FS
External Output	(1) READY (temperature control)
	(2) LEAK
	(3) ERROR (ROM, RAM, PARAMETER, HOME POSITION, OVER-HEAT, OPTI.-BALANCE, INTENSITY)
Temperature Accuracy	\pm 0.5 $^{\circ}$ C
Temperature Control	OFF, 30 to 500 $^{\circ}$ C (1 $^{\circ}$ C Step) 77 $^{\circ}$ C Temp. fuse (Double Temperature Control)
Communication port	USB
Operational support functions	None
Wetted materials	Stainless steet 316, Teflon, Quartz glass
Power Source, Power consumption	AC 100 to 240V +10%, 50/60 Hz, 150VA max.
Demensions, Weight	W260xD400xH150(mm),ca.12Kg
Linearity Range	\leq 1 n RIU

Fluorescence Detector	Fluorescence Detector 3000plus Optical System	
	Monochromators	Holographic concave diffraction grating monochromators for both execution and emission
	Light Source	150W Xe lamp
	Settable wavelength	Zero order, 200 - 1200 nm Both Ex And Em
	Measuring wavelength Range	Zero order, 200 - 1200 nm for both Ex and Em Optional PM tube extends the range up to 900 nm.
	Spectral bandwidths	Ex: 18 nm Fixed Em: 18, 40 nm selectable
	Wavelength Accuracy	\pm 2.0 nm
	Wavelength repeatability	\pm 0.3 nm
	Detectors	Ex: Photodiode Em: photomultiplier
	Cell volume	16 μ l (standard)
	Temperature Operating Range	5 $^{\circ}$ C, Ambient temp to 50 $^{\circ}$ C
	Temperature Accuracy	+0.5 $^{\circ}$ C
	Pressure	2Mpa
	Sensitivity	S/N \geq 350 for Raman peak of water (Ex=350 nm, time constant=1.5 sec, with standard cell
	Sensitivity range	1, 2, 4, 8, 16, 32, 64, 128, 256, and S.
	Gain	x1, x10, x100, x1000
	Response	Response
	Power	FAST, STD, SLOW (0.5, 1.5, 5 Sec.)
	Digital filter	3, 5, 10, 20, 40 sec
	Signal processing	Digital processing by A/D and D/A converters
	Output	10mV/FS for recorder (Polarity change is possible.) 1 V/FS for integrator marker, leak out
	Input	marker, autozero, program reset/ran
	Self-diagnostics	memories, DC power supply, Ex. energy, leak in cell, lamp operation time
	Time programming	64 steps, 10 files, 0.1 to 999.9 minutes in 0.1 min increments for Ex and Em wavelength, range, gain, autozero, spectral bandwidth, and spectral measurement
Spectral scanning	Ex and Em spectra	
Spectral subtraction	Ex and Em spectra	
Lamp timer	shows accumulated lamp operation time	
Lamp pff timer	settable from 0-99.9 hours (0.1 hour increments)	
Temperature compensation	compensates PM tube response for temperature variation	

Autosampler	AS-3000plus	
	Injection modes	Full-loop Partial loop-fill μ L-pick-up
	Cross Contamination	<0.02%
	Injection volume	Programmable from 0 μ l - 100 μ L 1 μ L increments(optional for 10,20,100 μ L)
	Injections Volume Accuracy	0.1%
	Injection precision	Full-loop injection < 0.25% RSD Partial loop-fill < 0.5% RSD μ L-pick-up < 1.0% RSD
	Sample viscosity	0.1 - 5 cP
	Needle wash Inside and outside needle wash with drying.wash can be programmed between injections and between vials/wells.	1 solvent 5 additional wash solvents
	Injection cycle time	< 60 seconds
	Valve switching time	60 msec
	Wetted parts	SS316, PTFE, TEFZEL, VESPEL, glass, For Bio-kit option: PEEK and Coalet-steel (needle) instead of SS316
	Carry-over	<0.005% RSD with standard wash Typically <0.01% with extra wash Vials: 2x 48 (1.5 mL)
	Sample capacity	2x48 1.5ml vials(Standard) (optional: 96 hole panel)
	Injection linearity	<0.9999
	Pressure limit	6000psi (15000psi sampling valve is optional)
	Dimensions	300 x 510 x 360 mm (WxDxH) 300 x 575 x 360 mm for ALIAS™ cool
	Weight	19 kg 21 kg for ALIAS™ cool
	Max load on top cover	65 kg
	Power requirements	95 - 240 Volt AC \pm 10%; 50-60 Hz 200 VA
	Sound pressure level	LeAq < 70 dB
	Working temperature	4° - 60°C
Temperature Accuracy	\pm 0.5°C	
Storage temperature	-25°C to -60°C	
Humidity	20 - 80% RH	

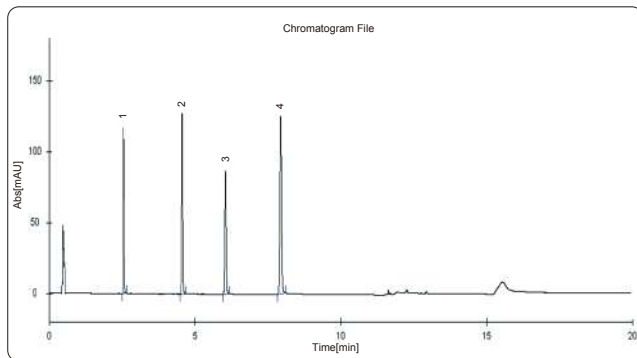
Application and Solutions

Pharmaceutical Analysis

Determine the content of soybean isoflavones in Soybean Isoflavone Soft Capsule by ATL 3000 HPLC system with core-shell column

Soybean isoflavones are a class of secondary metabolites formed in the growth of soybean. They are extracted from plant, similar structure with female hormone, so soybean isoflavones also called phytoestrogen. Soybean isoflavones can improve skin condition and osteoporosis, relieve the symptoms of menopause syndrome.

Chromatographic column: Manufacturer A C18(50mm*4.6mm*2.6um)
 Mobile phase: Phosphoric acid solution (pH=3.0)/Acetonitrile; gradient elution
 Flow rate: 1.0mL/min
 Column temperature: room temperature
 Detection wavelength: 260nm
 Injection volume: 5µL

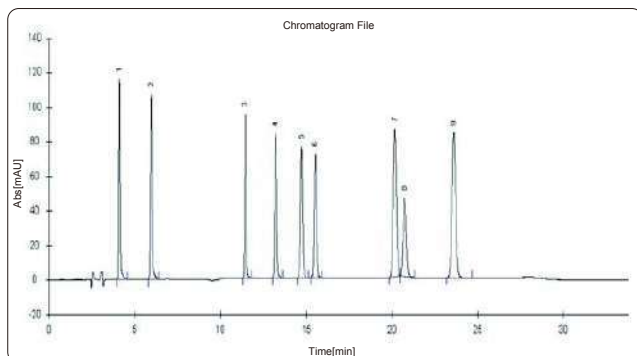


Environment Protection

Content determination of phenols compounds by HPLC

Phenols pollution in environment field means that phenols compounds pollute water. Waste water with phenols is one of the greatest dangerous, and most widely polluted industry waste water. In this paper, 9 phenols compounds were determined by using ATL 3000 HPLC system. The results show that the method is accurate and sensitive.

Chromatographic column: ATL compass C18(250mm*4.6mm*5µm)
 Mobile phase: Water/Acetonitrile; gradient elution
 Flow rate: 1.0mL/min
 Column temperature: 40C
 Detection wavelength: 223nm
 Injection volume: 5µL

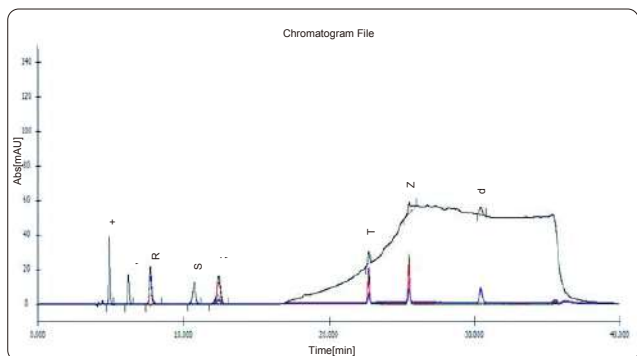


Food Safty

Simultaneously determining the content of 8 kinds of organic acids and Vitamins in fruit by using HPLC-DAD

Organic acids and vitamins are very important dry matter in fruits. They usually decide the special taste of fruits and play an important role in food science and nutriology field. In this paper, the new method can simultaneously determine organic acids and vitamins in fruits by using HPLC-DAD.

Chromatographic column: ATL Compass C18(2) (250mm*4.6mm*5µm)
 Mobile phase: Water/Acetonitrile; gradient elution
 Flow rate: 0.6mL/min
 Column temperature: 30C
 Injection volume: 10µL



Agriculture

Simultaneously determining the content of 4 kinds of sulfa-drugs in fodder by using HPLC-DAD

Sulfa-drugs are a class of chemical medicine for disease prevention and treatment of bacterial infections. If take sulfa-drugs standard exceeding livestock products as food for a long time, it might lead to the damage of hematopoietic system, agranulocytosis and so on problems. So that the application limit of sulfonamides in livestock and poultry raise up and play an important role in food safety field. In this paper, an accurate and sensitive method was established to determine the content of 4 kinds of sulfa-drugs in feed by using HPLC-DAD.

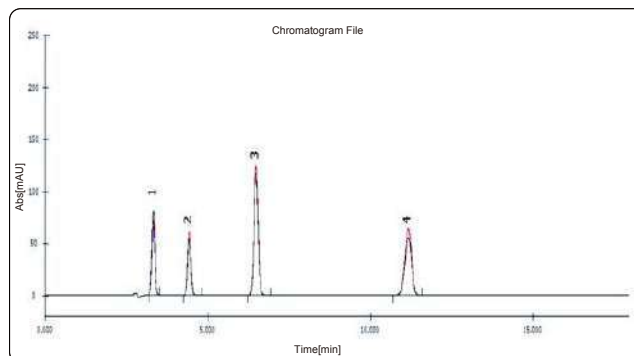
Chromatographic column: ATL Compass C18(250mm*4.6mm*5μm)

Mobile phase: Water/Acetonitrile (75/25)

Flow rate: 1.0mL/min

Column temperature: 40°C

Injection volume: 5μL



Chemical

Simultaneously determining the content of 6 kinds of UV absorbers in cosmetics

UV absorbers in cosmetics can reduce or absorb the ultraviolet rays, protect skin. Excess ultraviolet radiation will irritate skin and cause skin sensibility. The application of UV absorbers is managed and controlled strictly. In this paper, a new method is developed to determining the content of 6 kinds of UV absorbers in cosmetics.

Chromatographic column: Manufacturer A C18(250mm*4.6mm*5μm)

Mobile phase: A: MeOH/Tetramethylene oxide (250/450);

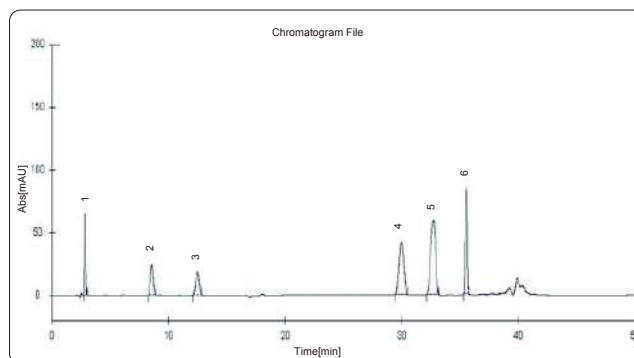
B: Water/Perchloric acid (300/0.1); gradient elution

Flow rate: 1.0mL/min

Column temperature: 30°C

Detection wavelength: 311nm

Injection volume: 10μL



Antibiotics

Determining the content of terramycin, doxycycline, tetracycline and auromycin by HPLC

In the livestock farming field, all kinds of antibiotics are used for treatment of livestock disease. Tetracycline antibiotics are widely adopt based on its antibacterial effect and cheap price. Tetracycline antibiotics mainly include terramycin, doxycycline, tetracycline and auromycin.

Chromatographic column: Manufacturer A C18(250mm*4.6mm*5μm)

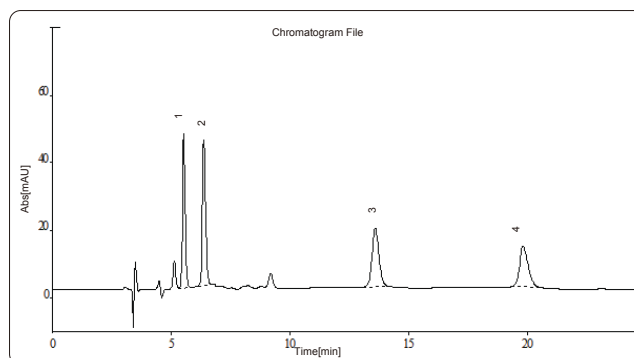
Mobile phase: MeOH/Acetonitrile/0.01mol/L Citric acid solution (12/18/70)

Flow rate: 0.8mL/min

Column temperature: 30°C

Detection wavelength: 360nm

Injection volume: 50μL



Customer Service

01 Installation ▶▶▶▶

ATL provide installation service with instrument working principle introduction, standard operation procedures, daily maintenance and application developing.

02 After Sale Service ▶▶▶▶

ATL has a professional service team, and build up the maintenance record via the clients information system, we also arrange periodicity visiting service and preventive suggestion.

03 Regulation Compliance ▶▶▶▶

ATL provide the compliance service for HPLC system, including the IO, OQ, PQ and so on. We can also provide the related training course to match up with the inspection request.

04 Application Support ▶▶▶▶

A cross-field application team covering pharmaceutical analysis, food safety, Bioscience and environment field is ready to support. They are focus on solving the application problem raised from client, and will provide the integrated solutions.

05 Multiple Training ▶▶▶▶

A T L provide abundant online and offline standard training course. And could provide pertinence training course with client application and will enhance the skill of client.

06 Comprehensive Service ▶▶▶▶

A T L provide 360 degree, proactive service support. Our technical team would like to provide you the technical and maintenance support with fast reaction and reasonable suggestion. Field service engineer team is ready at any time for emergency issues.

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies



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Infra FTIR



Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus



Flash Chromatograph



Atomic Absorption Spectrophotometer



Liquid Partical Counter



Optical Emission Spectrophotometer



DSC/TGA



Semi Auto Bio Chemistry Analyzer



HEMA 2062 Hematology Analyzer



Micro Plate Reader/Washer



URINOVA 2800 Urine Analyzer



Total Organic Carbon 3800



Fully Automated CLIA



NOVA-2100 Chemistry Analyzer



PCR/Gradient PCR/ RTPCR



TOC Analyzer



Laser Particle Size Analyzer



Ion Chromatograph



Water purification system

Regulatory compliances



Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



Analytical
Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

Reach us @



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