PG INSTRUMENTS LIMITED

Global Manufacturer of Analytical Instruments

Region One: Southeast Asia

Indonesia, Thailand, Malaysia, Philippines, Bangladesh, Pakistan, Sri Lanka, Nepal, Cambodia Taiwan, Hong Kong, Singapore and other countries in Southeast Asia

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pg instruments

LC200 High Performance Liquid Chromatography

PG INSTRUMENTS LIMITED

LC200 High Performance Liquid Chromatography

Character

Accurate

"Accuracy is the spirit of analysis." Based on a well structured design and manufacturing process,unquestionable accuracy and precision were a prerequisite,secondly quantification and precision of analysis were dependent on accurate flow rate.

Stability

Excellent reliability and stability.The pump heads have been machined using a first class CNC process; the innovative stuctural design has been designed to achieve minimum pressure fluctuation. Consequently stable flow, low noise and overall quality provides the foundation for reliable results.

Powerful

LCWin software offers complete control, powerful data processing, reporting functions, intelligent diagnostic systems and maintenance utility ensure a complete and flexible software solution for your analytical work.

Beautiful

Art combined with practicality. The modular system provides shape and character whilst being aesthetically pleasing. The unique and practical design ensuresease of use and maintenance. In essence, the combination of art and practicality compliment each other.

Economical

The LC200 is a high performance yet cost effective solution. The modular design ensures that you can cofigure the system to meet your application requirements. A dedicated team of product specialists will provide technical support and provide an applications development service。

Configuration

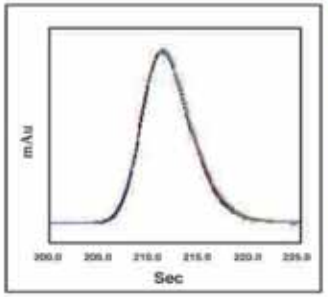
· LC200—Isocratic configuration

· LC200—Gradient configuration

· LC 200 Gradient configuration with column oven

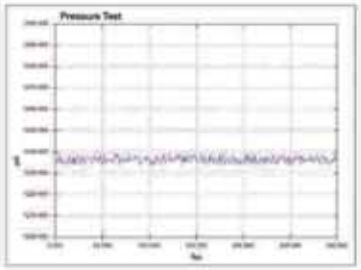
· LC200 Gradient configuration with column oven and auto sampler

LC210 High pressure pump

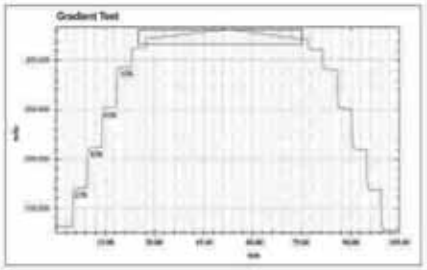


Run	Retention Time(s)	Area (μAU.s)
1	211.5	354986.7
2	211.9	355102.1
3	212.2	353989.3
4	212.6	357527.6
5	212.0	357115.9
6	210.1	356984.3
7	211.8	360583.8
8	211.3	359729.9
9	211.6	357272.6
10	210.6	352621.6
Average	211.5	356591.4
RSD%	0.35	0.69

The figure above shows comparison of 10 injections (Response time 0.1s). From this figure we can see that the LC210 pump exhibits good repeatability on both retention on both retention time and peak area, which leads to accurate results. The solvent system incorporates a fluidic design that uses a serial flow path. The system employs dual plungers and two check valves for enhanced reliability. The dual cam gear is calculated to ensure optimal flow control whilst an integral seal wash system will extend the serviceable life of the pistons and seals.



Optimised solvent delivyery is achieved using pulse dampening compensation. This system optimises pump stability and decreases pressure ripple to 1%.

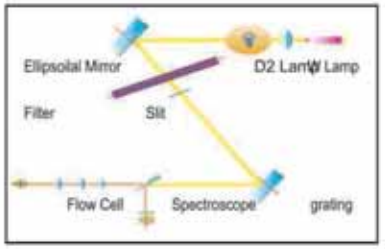


Accurate gradient elution: composition accuracy<2%.

Minor change composition down to 1% can be distinctly observed.

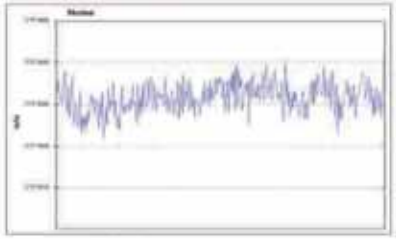
LC220 Detector

· UV Detector



Simplified optics: comprising of an advanced ellispoidal mirror and concave grating. Compaared with the traditional configuration, this arrangemenr greatly reduces the number of opical components ensring wavelength accuracy.

The lowest baseline noise < 0.75x10-5Au allowssensitive analyses to be achieved. The thermostatic flow cell reduces the influence of room temperature and fluctuations on abasorbance and provides a stable baseline

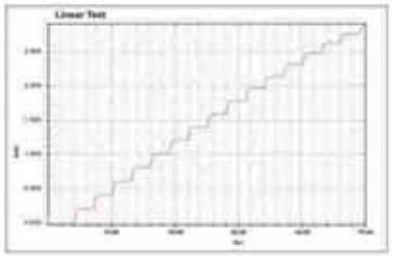


Low noise and drift

Noise<0.75x10-5Au(25、234nm, drycell, responds time 1s)

Drift<10-4Au/h(25、254nm、dry cell, responds time 1s)

Transmission deuterium lamp combined with tugsten lamp provides a wavelength range of 190-800nm. The shine through deuterium lamp eliminales moving components, teduces noise whilst offering incressre reliability



Linearity range>104

Integral large capacity memory, which can save the data in the event of accidental power shortage

· DAD Detector

The DAD detector 2600 is a modern programmable Diode Array Spectrophotometer for HPLC. The instrument includes a deuterium lamp and a detector head with 256 diodes that can monitor the wavelength range from 190 to 500nm with a user-selectable bandwidth from 4-25nm. Calibration and wavelength validation are performed using an integrated holmium oxide filter. The system is designed for ease of operation and provides optimum performance with high sensitivity in a very compact design.

· ELSD Detector

The ELSD detector Chromachem is used to detect all semi- and non-volatile analytes in your sample, including those transparent to other detectors.

· RI Detector

The RI-201H is a versatile and high sensitive RI detector that can he used with various manufactures 'HPLC system'.

· Fluorescence Detector

The RF-20A/20Axs fluorescence detector can offer world-class sensitivity, excellent ease of maintenance, and validation support functions. They support a wide range of applications from conventional analysis to high-performance analysis.

Control Software

· LCWin

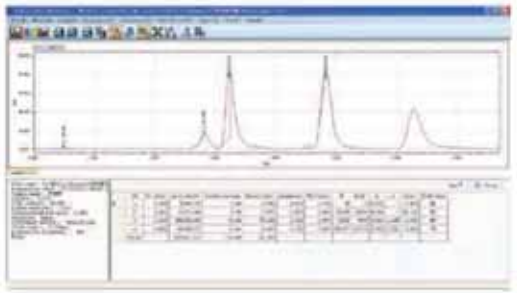
LCWin is a liquid chromatography software package developed by PG Instruments.it provides complete instrument control and data processing functions with a simple and efficient operation.

Function areas

Instrument control, data analysis, diagnostics, report editing. These four modules provide comprehensive functionality. The modern layout provides a convenient and simple user interface whilst wizard operations simplify configuration and operation.

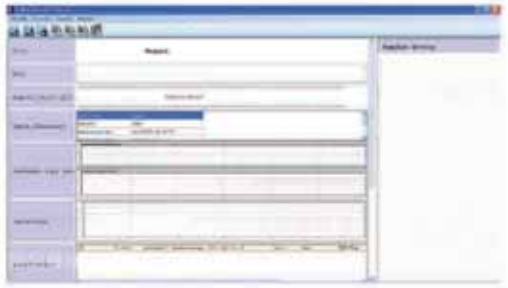
Functional approach

Powerful data processing functions, intelligent batch processing and report capabilities provide the users with multiple operations and reporting formats. All six quantitative functions include programmable integral parameters and over 20 chromatographic parameters to satisfy all your demands for analysis and calculation.



Programmable report components within report manager

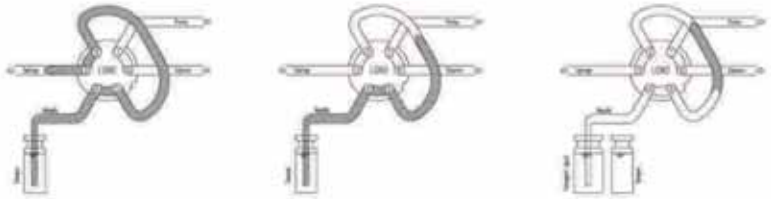
Flexible reporting, 12 editable components provides complete control over the reporting styles.



LC230 Auto Sampler

The LC230 high performance Auto Sampler delivers superior repeatability (<0.3% Full loop mode). This fully automated solution precisely measure sample volume with no sample loss and has impressive high speed 17 second injection cycle.

· Flexible injection modes:



Full loop mode
(Most accurate)

Partial loopfill mode
(More flexible)

uL pickup mode
(Minimal sample loss)

· Extra injection range:

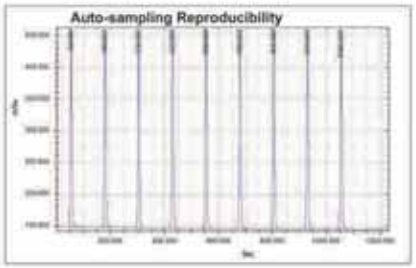
1–5000 μL

· Ultra high reproducibility:

Full loop< 0.3 %

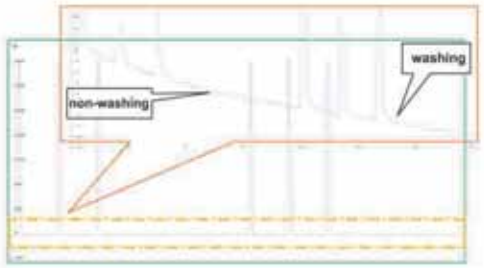
Partial loopfill< 0.5 %

uL pickup< 1.0 %



· Sample carry over

The special design of the needle wash station and rapid wash solvent delivery enable efficient removal of contaminants.Extensive wash routines ensure minimal carry over even for highly absorptive compounds



· Ultra fast sampling cycle:

Minimum sampling cycle of 17 seconds, greatly improves throughput time.

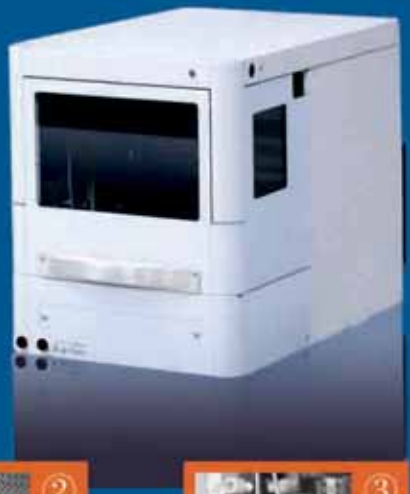
· Optional sample tray cooling:

with built in peltier cooling, temperature can be reduced to 4℃

pg

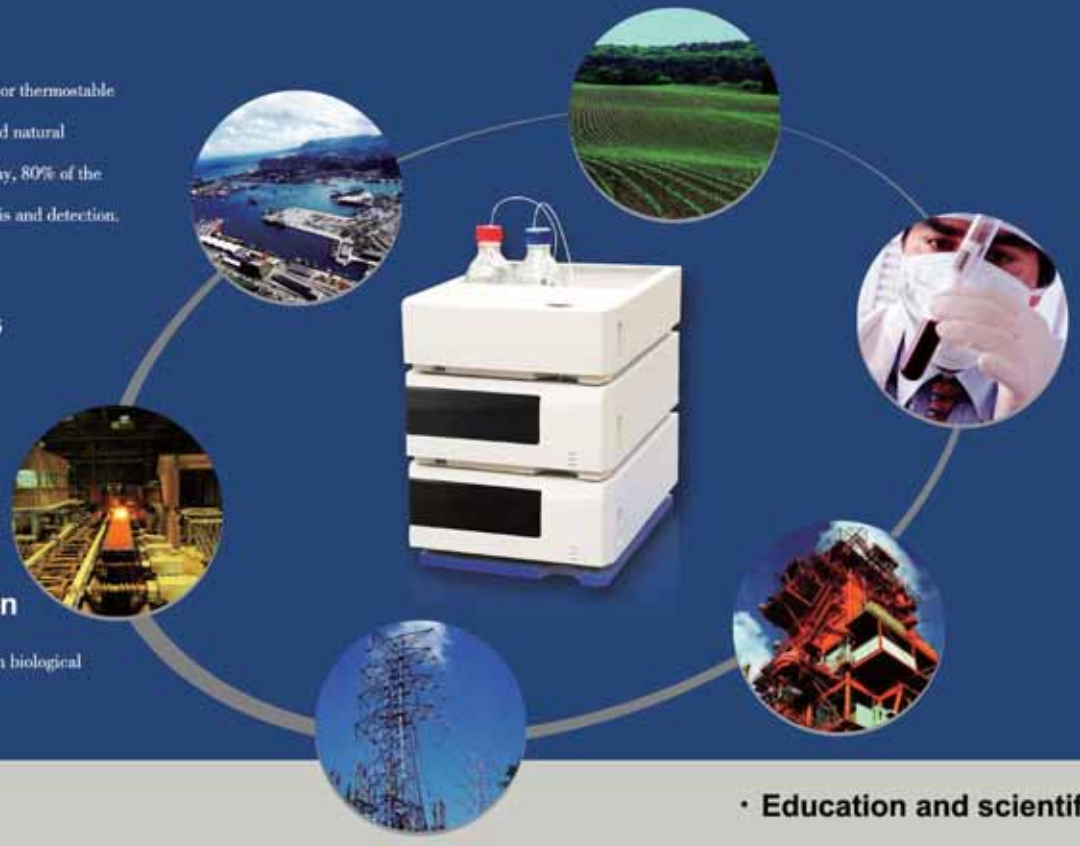
· LC230 Auto sampler main components

① Syringe location module
② Cooling module
③ Syringe driver module
④ Injection valve
⑤ Sample tray module
⑥ CPU board



Application

HPLC analysis usually applied to different polarity involatile or thermostable organic compounds, also a variety of bioatctive substances and natural products; synthetic and natural polymers amongst many. Today, 80% of the organic compounds can use liquid chromatography for analysis and detection.



· Medical and pharmaceuticals

Drug analysis for pharmacy, detection of effective components, drug metabolite control, micro toxin in-vivo analysis, and microbial drug analysis..

· Health and epidemic prevention

Clinical analysis, research of disease control, microanalysis in biological areas, human biochemical analysis, and metabolite analysis.

· Manufacturing

Process control and product testing, such as analysis of food preservatives, sweeteners, spices, food enzyme, carbohydrate, vitamins, nutrients, cosmetics preservatives and antimicrobial agent detection.

· Petrochemical

Industrical process control, product testing and manufacturing processes.

· Quality control

Quality control of commodity inspection, quality inspection, import/export quarantine departments.

· Environmental monitoring

Water, air, rainfall monitoring and determination of the content of various pollutants.

· Agriculture, forestry, fisheries, animal husbandry

Pesticide residue detection, crop detection, chemical fertiliser detection, plant quarantine, veterinary drug detection, aquamarine detection.

· Education and scientific research

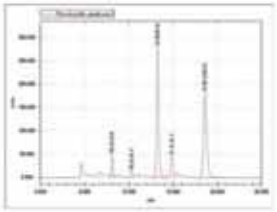
Educational establishments, institution for experiment, scientific research, teaching and demonstration.

· Water conservation system

Water quality and environmental monitoring, fresh water and sewage treatment plants.

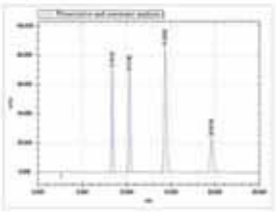
· Other areas

Power station, military, judicial, public security detection and forensics amongst others.



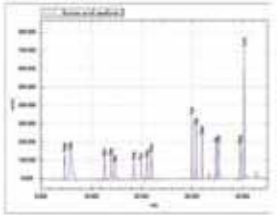
- Stevioside analysis

Column: pGrandsil NH2, 5um, 4.6 × 250mm
Mobile phase: Acetonitrile:water=80:20
Wavelength: 210nm
Flow rate: 1.2mL/min



- Preservative and sweetener analysis

Column: pGrandsil-STC, 5um, 4.6 × 250mm
Mobile phase: 0.02M ammonium acetate:methanol=80:20
Wavelength: 230nm
Flow rate: 1mL/min



- Amino acid analysis

Column: pGrandsil-AA C18, 5um, 4.6 × 250mm
Mobile phase: A: 0.1M sodium acetate(pH=6.5):acetonitrile=80:20
B: acetonitrile:water=80:20
Gradient elute
Wavelength: 254nm
Flow rate: 1mL/min
Column temperature: 40℃

Specifications

· LC210 Pump

Item	Specification
Flow range	0.001mL/min–10.000mL/min, 0.001mL/min increment
Compressive compensation	User-defined
Plunge seal wash	Manual
Maximum operation pressure	40MPa, upper and lower limits settable, automatic alarm
Pressure ripple	≤1% (1mL/min, water)
Flow precision	≤0.075% RSD (based on retention time)
Flow accuracy	± 1%
Binary high pressure gradient accuracy	≤1%
Binary high pressure gradient precision	≤0.2%

· LC220 UV detector

Item	Specification
Lamp source	Deuterium lamp, Tungsten lamp
Wavelength range	190–800nm
Spectral bandwidth	6nm
Wavelength accuracy	± 1nm (Deuterium lamp)
Wavelength precision	≤0.2nm (Deuterium lamp)
Linear range	≥104
Noise	± 0.75 × 10–5AU (dry cell, 254nm, integration time 1s)
Drift	≤1 × 10–4AU/h(dry cell, 254nm, integration time 1s)
Minimum detection concentration	≤5 × 10–9g/mL (Naphthalene/Methanol solution)
Flow cell volume	10μL
Flow cell pressure limit	10MPa(1500psi)
Integration time	0.1s–2s

· LC230 Auto sampler

Item	Specification
Loop range	1–5000μL, 1μL increment (10mL loop optional)
Syringe volume	500μL(2500μL optional)
Sample capacity	2×48 vial tray (2ml vial); (optional 12 positions 10mL vial tray, 96 well plate formats, 384 well plate formats)
Switching time of injection valve	< 100ms
Needle location precision	≤0.6mm
Injection cycle time	17s(60s if including washing needle)
Injection modes	Full loop, partial loop fill and pickup mode
Injection reproducibility	Full loop < 0.3% Partial loop < 0.3% Pickup mode < 1%
Carry over	< 0.05%
Cooling (optional)	4℃ to ambient –3℃

· LC240 Column oven

Item	Specification
Model	LC240 Column Oven LC241 Column Oven with chiller
Temperature range	Ambient–100℃, 0.1℃ increment
Temperature accuracy	± 5℃
Temperature stability	≤0.1℃
Cooling(optional)	Minimum to ambient –15℃
Columns accommodated	3 Columns, 15–25cm

· LC250 Degasser

Item	Specifications
Type	LC250 Membrane online degasser 2 channel
	LC251 Membrane online degasser 3 channel
	LC252 Membrane online degasser 4 channel
Volume	10ml/min

· DAD Detector 2600

Item	Specifications
Light Source	Deuterium
Measurement Range	190–500nm
Detection Type	Diode Array, 1.25nm dot pitch, 256 diodes
Bandwidth	4–25nm, user selectable
Wavelength Accuracy	≤1nm
Wavelength Validation	Automatic via internal Holmium Oxide filter
Noise(a)	≤1×10–5AU
Drift(a)	≤5×10–5AU/hr
Linearity	0–1.5AU
Measurement Range	0–2.2AU
Spectra	4 spectra can be stored
Integration time Range	13–200 ms
Time Constants	0.1 sec to 10.0 sec in 1–2–5 steps

· ELSD Detector Chromachem

Item	Specifications
Light Source	High intensity halogen lamp (multicolor)
Detector	Photomultiplier (High sensitivity)
Analogue Signal Output	0–1V
Detect Limit	< 10ng glucose (Non-column injection)
Heating Time	< 10min heat up to 150℃
Temperature Range	Evaporation chamber: maximum 150℃, increase by 1℃ Nebulizer: Maximum 70℃
Autozero	Front panel or external trigger
Nebulizer Type	Venturi tube, temperature controllable
Gas Flow Rate	1–2L/min, recommended pressure 1–2bars
Spectra	4 spectra can be stored
Integration time Range	13–200 ms
Time Constants	0.1 sec to 10.0 sec in 1–2–5 steps

· RI Detector 201H

Item	Specifications
Refractive Index Range	1.00–1.75
Detection Range	0.25–512μRIU
Linear Range	≥600μRIU
Noise	≤2.5nRIU（pure water, response time: 1.5 sec）
Response Time	0.1, 0.25, 0.5, 1, 1.5, 2, 3, 6 sec
Autozero	Automatic zero
Autozero Range	Full range
Deviation Adjustable Range	10μRIU
Deviation Resolution	50μRIU
Detection Cell Volume	8μL
Flow Rate	Common value 0.2–3.0ml/min, maximum10mL/min（pure water）
Highest Pressure	0.05MPa
Dead Volume	670ul
Temperature Control	Off, 30–50℃（each time 1℃）, 77℃ fuse（dual temperature control）

· Fluorescence Detector RF-20A/20Axs

	RF-20A	RF-20Axs
Light Source	Xenon Lamp	Xenon Lamp Low pressure Mecury(For wavelength accuracy correction)
Wavelength Range	200nm–650nm	200nm–750nm
Spectral Bandwidth	20nm	
Wavelength Accuracy	±2nm	
S/N	Raman peak of water S/N above 1200	Raman peak of water S/N above 2000
Detection Cell Temperature Range	4℃–40℃, 1℃ increment	
Detection Cell Temperature Control Range	(ambient–10)℃–40℃	
Detection Cell	Standard detection cell: volume:12μL, withstanding pressure:2MPa Half-micro detection cell: volume:12μL, withstanding pressure:2MPa	
Functions	Simultaneous double-wavelength test, wavelength scanning	
Safety Protection	Leakage sensor	
Operation Temperature Range	4℃–35℃	

Accessories

· Column

· Filtration system

· Tubing(SS, PEEK, FPE)

· Manual injection valve

· Ultrasonic cleaner

· Fitting

· Multi way connectors