

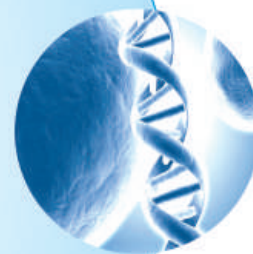
3000 Series Intelligent HPLC / nano LC



PREP. & Production HPLC



Analytical HPLC



# iHplc5<sup>TM</sup>

Liquid Chromatography Series



# iHplc5

We are pleased to inform you that Analytical Technologies Limited/ HPLC SOLUTIONS, with decades of experience in Liquid Chromatography unveils to the world, its 5<sup>th</sup> generation HPLC Systems - iHplc5 - Low Cost, Low Maintenance, High performance, Centrally controlled by Workstations/network, FDA/21CFR Compliant, fully automated, wide range of Systems from nano (UPLC-5ml-18000psi) - Regular(10ml-6000psi) - prep (50-1000ml/min) to production(1000ml/min-8L/min) and with Various configurations like isocratic, Gradient ( High Pressure Binary and low Pressure Quaternary ) with various detectors like UV( UV Visible), Photo Diode Array ( PDA) Detectors, RI( Refractive Index), Fluorescence, ECD( Electro Chemical), ELSD( Evaporative Light Scattering), etc,. For various applications from Pharma / Biotech, Amino Acid Analyzers for Clinical, food, feed and beverages, GPC( Gel permeation Chromatography) for - polymer/ paints/ petrochemical/ fibre/ membrane technology, DAD Systems for Dyes, Chemicals & Intermediates, Prep & Production/DAC( Dynamic axial Compression) HPLC Systems for Production of Peptides / proteins / phyto / natural products purifications,. BioLC for only Clinical Diagnostics/BioMedical ( for HbA1c / Thalassemia / SickleCell / Vitamins, Metabolic / Genetic dis-orders ), ELSD Systems for Lipids/paints, HSCCC systems for purification of natural products with low working cost, etc,.

We are pleased to inform you that over 900 iHplc5 systems with these wide range of applications & configurations have been supplied/Tested for its performance in India and emerging markets over a period of last 3 years,. before we are unveiling to the whole world now,.We have a great reception from all the users and we could see multiplying and repeat orders from the same clients,.

For the premium Customers/users of Old systems (either our systems or competitors any make of systems), we offer introductory buy back Schemes to give those customers an opportunity to use and feel our new iHplc5 systems features / advantages /cost saving both in the initial investments and also/working /maintenance costs.

Other launches in the Consumables for the Liquid Chromatography segment include HyperChrom range of Columns for Analytical/Prep/Production, Column Packing/ Re-packing devices,.HyperSILI range of SILICA for starting from 1.5um to 15um spherical and Hyper Parts range of parts/consumables( pistons/piston seals/rotor seals/lamps ) for any make of systems and low cost improved version of double pistons Column Washing Pumps, and High pressure pumps for reactors,. Etc,.

Come and invent the profits by maximizing performance/ minimizing costs by use of iHPLC5 Liquid Chromatography range of products.



### Analytical Technologies Special features:

- 1) We have nano to large scale production in HPLC.
- 2) We are the first company designed BioLC only for Bio medical Field.
- 3) We are the first company have design to patented exchangeable pump heads System. By this feature we can use different amount of volume for only one instrument.
- 4) We have upgradable systems. We can able to design systems from small scale industries to large scale industries as per customer requirement .

## APPLICATIONS

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

### Pharmaceuticals & Medical

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

### Health & Epidemic prevention

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

### 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.

### Bio-Pharmaceuticals & Fine Chemicals

Process HPLC'S are used for production of Phylo & Fine Chemicals etc.

### 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

Industrial process control, product testing and manufacturing processes.

### Quality Control

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

### Education and Scientific research

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

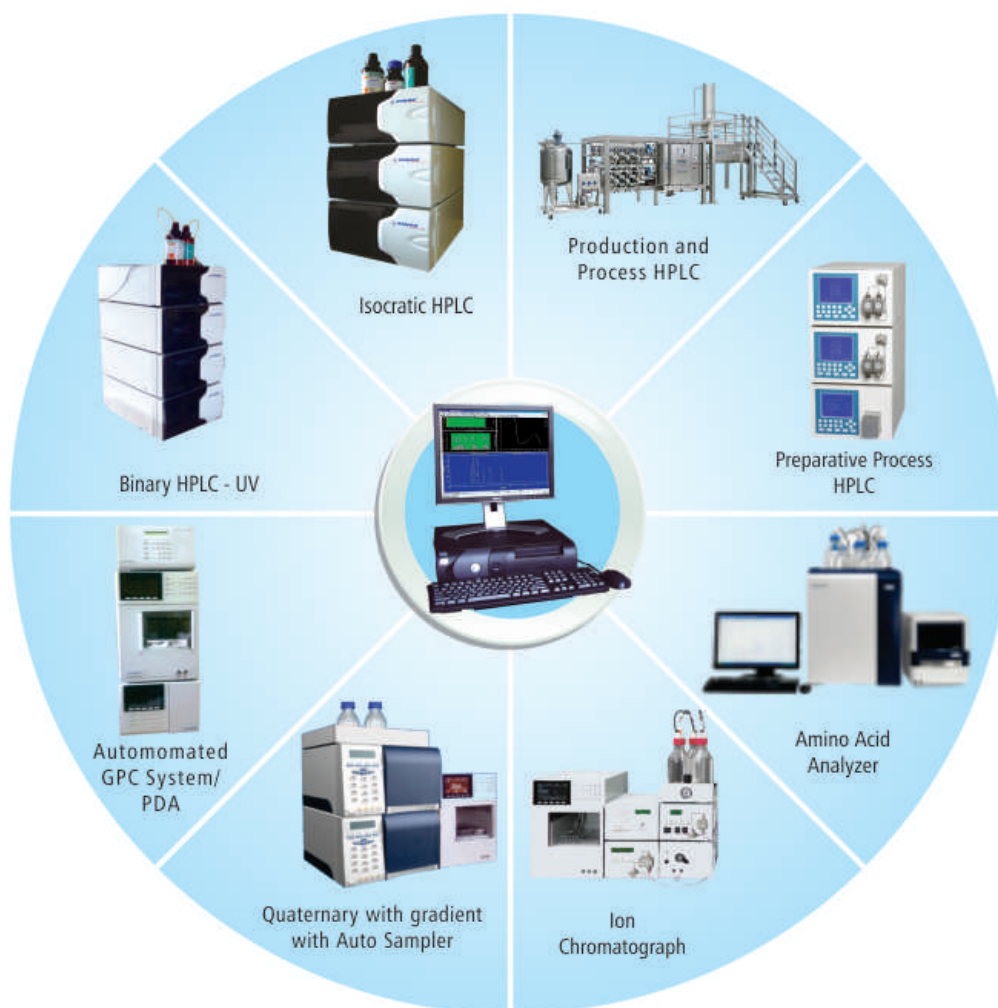
### Water Conservation System

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

### Other Areas

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

## Typical Configurations for Various Applications



## Features

### Accurate

"Accuracy is the spirit of the 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 structural design has been designed to achieve minimum pressure fluctuation. Consequently stable flow, low noise and over all quality provides the foundation for reliable results.

### Powerful

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

### Beautiful

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

### Economical

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



# Product Specification

## Pumps

	2230 Analytical HPLC Pump	2230p Semi-Preparative HPLC Pump
Flow Range	0.001-9.999mL/min, increment: 0.001mL/min	0.10-40.00mL/min, increment: 0.001mL/min
Precision	± 0.1% RSD	≤± 1.0%(10.0mL/min, 8.5MPa, water, ambient temperature)
Accuracy	± 1μL/min	RSD≤0.2%(10.00mL/min 8.5MPa, water, ambient temperature)
Max Pressure	40MPa (0.001mL/min-5.000mL/min) 20MPa (5.001mL/min-9.999mL/min)	30MPa (0.01mL/min-20.00mL/min) 20MPa (20.01mL/min-40.00mL/min)
Pressure Precision	≤±3%	
Pressure Pulsation	≤±1.0%	
Power	AC 110V/220V, 50Hz/60Hz	
Consumption	180w	200w
Dimensions	410mm x 270mm x 180mm	400mm x 220mm x 175mm
Weight	10kg	
Concentration Accuracy	± 0.5%	
Concentration	± 0.1%	
Display	320 X 240 blue background colour	
Protection	Pmax& Pmin Data automatically saved after Power down	
System connection	1/16" capillaries	
Control	Stand-alone mode by front keypad HPG Mode: one pump work as master, Others work as slave. RS232 by PC using communication protocol	
Safety functions	Lead sensor, High pressure/Low pressure limits	
Modes of operation	Isocratic, Gradient flow programming	

	2270Preparative HPLC Pump	2280 Preparative HPLC Pump
Flow Range	1.00-99.99mL/min, increment: 0.01mL/min	3-300mL/min, increment: 1mL/min
Precision	≤± 1.5%(30.00mL/min, 8.5MPa, water, ambient temperature)	≤± 3%(100mL/min, 8.5MPa, water, ambient temperature)
Stability	RSD≤1%(30.00mL/min 8.5MPa, water, ambient temperature)	RSD≤1.5%(100mL/min 8.5MPa, water, ambient temperature)
Max Pressure	30MPa (1.00mL/min-20.00mL/min) 20MPa (20.01mL/min-99.99mL/min)	20MPa
Pressure Precision	≤± 3%	
Pressure Pulsation	≤± 3%	
Power	AC 110V/220V, 50Hz/60Hz	
Consumption	260w	400w
Dimensions	420mm x 280mm x 175mm	530mm x 300mm x 210mm

ALU 2230 Low-pressure Gradient Unit		Dg2230 In-Line Degasser		ZW Column Oven	
Flow Range	0.001mL/min-10.00mL/min	Channels	1-5	Temperature Range	ambient 5°C 80°C
Gradient Setting Range	0.1% - 100.0%	Max Flow of Single Channel	10 mL/min	Temperature Precision	0.1°C
Gradient Precision	≤±0.1%	Wetted Materials	Teflon AF	Accuracy	≤±0.5°C
Gradient Accuracy	≤0.5%	Degassing Channel Limited Pressure	4.8x10 Pa	Temperature Setting	0.1°C
Gradient Curve	Linearity, step, concavo and convex curve	Channel Volume	2-4mL	Display	4 digits both for temperature setting and indication
Vacuum Degassing	Binary-quantumary (selectable)	Channel Internal Diameter	1.2mm	Type	Block Heating / Cooling with preheating of the Mobile Phase
Power Requirement	AC 110V/220V, 50Hz/60Hz	Pressure Drop	3.9mmHg/mL/min	Column Accommodated	Upto 1 x 250mm columns
Dimension	420mm x 280mm x 180mm	Power Requirement	DC 15V-24V	Power Consumption	145W
		Dimension	200mm x 150mm x 60mm	Option	Peltier

## Product Specification

### • P3000 High Pressure HPLC Pump

P3000 HPLC Pump is new generations pump that using CPLD technology and controlled by microprocessor. It represents us high precision and high accuracy based on fully digital frequency generation system, advanced motor driver system and kindly . Users interface. The design of the pump shares experiences from the most advanced pumps in the world and combine. Our independent concepts so that we can give longer guarantee to customers for trouble free. The flow rate calibration can be processed at anytime by the firmware that ensures the user to obtain the best analysis reproducibility a high measurement accuracy. P3000 HPLC pump support HPG. Customers can use as HPG mode by introduced additional P3000 pumps up to quaternary HPG. In a word, the P3000 pump is more compact and reliable especially the best price !

#### Technical Specification

Delivery method	double pistons, main & auxiliary	Protection	Pmax & Pmin Data automatically saved after
Pump head	10ml SST/PEEK analytical		power down
	50ml SST/PEEK semi-preparative	System connection	1/16" capillaries
Maximum working pressure	10ml pump head 42Mpa for SST/30Mpa for PEEK	Control	stand-alone mode by front keypad
	50ml pump head 30Mpa for SST/20Mpa for PEEK		HPG Mode: one pump work as
Flow Range	10ml pump head 0.001-9.999ml/min		master, others work as slave
	50ml pump head 0.01-49.99ml/min		RS232 by PC using communication
Flow rate accuracy	±1μl/min		protocol
Flow rate Precision	± 0.1% RSD	Power Supply	AC2220V, 50Hz, 400W
Display	320 X 240 blue background color	Dimensions and weight	410 X 180 X 270 X 10 kg
Concentration Accuracy	± 0.5%	Safety functions	Lead sensor, High pressure/Low pressure limits
Concentration	± 0.1%	Modes of operation	Isocratic, Gradient flow programming

#### Configuration

1	P3000 HPLC pump with 10ml head SS	1	3	P3000 HPLC pump with 50ml head SS	1
2	P3000 HPLC pump with 10ml head PEEK	1	4	P3000 HPLC pump with 10ml head PEEK	1

### • P6000 Preparative HPLC Pump

- Analytical's preparative HPLC pump is double piston design • Developed server engine • Exported check valve and sealing ring
- Providing high quality products for the customer

#### Technical Specification

Delivery method	double pistons, main & auxiliary	Control	Stand-alone mode by front keypad
Flow rate accuracy	±0.1%		HPG Mode: one pump work as master,
Flow rate precision	≤ 0.5%RSD		others work as slave
Display	Graphics & LCD 320X240 blue background color		Rs232 by PC using communication
Protection	Pmax & Pmin Data automatically saved after power		protocol
	down	Power Supply	220V±10%, 50Hz, 400W
System connection	1/8" capillaries, 1/4" capillaries	HPG	up to Quaternary HPG
		GLP	Record running time automatically

#### Ordering Information

1	P6000 HPLC pump with 100ml pump head SS	1	5	P6000 HPLC pump with 500ml pump head SS	1
2	P6000 HPLC pump with 100ml pump head PEEK	1	6	P6000 HPLC pump with 500ml pump head PEEK	1
3	P6000 HPLC pump with 250ml pump head SS	1	7	P6000 HPLC pump with 1000ml pump head SS	1
4	P6000 HPLC pump with 250ml pump head PEEK	1	8	P6000 HPLC pump with 1000ml pump head PEEK	1



## Product Specification

### • 3018k High Pressure HPLC Pump

The High Pressure HPLC Pump has been specifically designed for Analytical to high speed, high resolution Chromatography applications. Also, a constant pressure version has been developed to allow packing of particle in the 1 micron to 10 micron range. The Analytical Pump provides flow rates from 0.001 to 5.000 mL/min, with flow settings in 1  $\mu$ L increments. Pulse-free flow in the Analytical Pump is guaranteed by using advanced solvent recompression algorithms and automatic pressure compensation which provides unmatched performance for the most demanding applications. The Packing Pump has flow range settings from 0.001 to 12 mL/min with flow controlled by the pressure setting. The High Pressure HPLC Pump is offered as a freestanding unit or in kit form for OEM applications.

#### Technical Specifications

Flow Rates .....	0.01 - 2.0 mL/min.	Flow Accuracy .....	< $\pm$ 1% at 1 mL/min
Constant Pressure.....	0.001 - 5.0 mL/min.		10,000 psi with Methanol
Pressure .....	18,000 psi	Flow Precision .....	0.08% RSD on > 30 sec. average flows
Pulsation .....	$\pm$ 0.75% from 3,000 to 18,000 psi	Physical .....	5.5" H x 10.375" W x 17.5" D
Pressure Accuracy ...	$\pm$ 2% of full scale pressure		(14 x 26 x 44 cm)
		Weight .....	30 lbs. (13.6 kg)

### • P6000-3L High Pressure HPLC Pump

This new powerful pump is a new member of P600 family. He continues the successful of P6000 pumps such as great powerful, the long lifetime, the very high flow rate accuracy, flow rate precision, specially suit for the industrial production. P-6000-3L equipped with servomotors. The two pistons working in parallel mode to reduce the pulsation. The pump can be configured as HPG system and control all procedure from injection to target fractions by the software Analchrom.

#### Technical Specifications

Preparative HPLC Pump	10-3000mL/min, 10Mpa	Display :	LCD, 320x240 blue back ground color
Pump Head :	3000mL	Protection :	Pmax & Pmin Data Automatically
Max. working Pressure :	10 Mpa	saved	after power down
Flow Range :	1-3000mL/min.	Power supply :	220V $\pm$ 10%, 50 Hz , 1000W
Flow rate Accuracy :	$\leq$ 1%	Dimension & weight :	700 x 466x248 , 40 kg.
Flow rate precision :	RSD $\leq$ 0.5%		

#### Configuration

1	P6000-3L HPLC pump	1
2	Piston for P6000-3L	1
3	Piston seal for P6000-3L	1
4	Special cable for Rs232 Connection	1



## Product Specification

### • Large Scale High Pressure Piston Pump

International level large flow rate high pressure piston pump design, with developed driving system exported from oversea, all the material which contacts the liquids is 316L or non-metal material, all this can let this pump fit for the industrial preparative HPLC system, with high flow rate accuracy, little pulsation, the pump can work under multi kinds working conditions.

#### Technical Specifications

Liquid Delivery mode	Multi piston parallel connection
Pump Head	316L Stainless Steel
Working Pressure	10Mpa
Flow rate range	10L/min---85L/min
Display	LCD
Gradient	High Pressure Gradient or low pressure gradient

#### Configuration

1	P6000-10L Preparative HPLC Pump	1
2	Piston for P6000-10L	1
3	Piston seal or P6000-10L	1
4	Special cable for Rs232 Connection	1

### • Pneumatic Pump P6000pa

- Pneumatic solvent delivery system without electronics for flow rates up to 1000ml/min.
- For hazardous environments
- For constant pressure applications
- For easy column packing up to 1000bars-developed for the production of high performance columns, either analytical or preparative
- For preparative chromatography
- For process chemistry

#### Technical Specification

1	Pneumatic Pump P6000PA, 100ml/min, stainless steel	1
2	Pneumatic Pump P6000PA, 250ml/min, stainless steel	1
3	Pneumatic Pump P6000PA, 500ml/min, stainless steel	1
4	Pneumatic Pump P6000PA, 1000ml/min, stainless steel	1



## Product Specification

### • Uv/Vis Spectro - Photometer Uv3000

Uv3000 is upgrade product of Uv2000.

Uv3000 is used all digital design. Uv3000 is also a spectro - photometer detector. It can be controlled by pc. It can be widely used in chemical analysis, pesticide, pharmacy and chemistry etc. Chromatographic measurement at a selected wavelength between 190 and 700 nm per run. Wavelength change during measurement possible.

#### Configuration

1	UV/VIS Spectro-photometer detector UV3000	1
2	Deuterium lamp with bas	1
3	Tungsten - Halogen lamp with bas	1
4	Analytical flow cell	1
5	Semi preparative flow cell	1

#### Technical Specification

Wavelength range	190-600nm
Light Source	Deuterium lamp(standard) Tungsten-Halogen lamp (optional)
Wavelength Accuracy	$< \pm 1 \text{ nm}$
Wavelength Precision	$\pm 0.1 \text{ nm}$
Wavelength Scanning	Stop-flow mode, UV spectra acquisition of separated compounds in the stop-flow mode possible.
Detection range	0-2AU
Baseline Noise	8 $\mu\text{AU}$ or Less
Baseline drift	$\pm 0.35 \times 10^{-5} \text{ AU}$
Flow Cell	10mm path, Tapered Cell/Temperature controlled cell
Data Acquisition :	upto 20 Hz
Time constants	0.1/0.2/0.5/1/2/5/10s
Analog Output	$\pm 0.1 \pm 1.0 \pm 10 \text{ V}$
Integrator Output	16 grades adjustable
Auto Zero	Full Scale Range
Digital data output	Rs232 Interface
Display	320 x 240 LCD display, adjustable blue background light
Power	220V $\pm 10\%$ , 50Hz, 60W
Dimension and Weight	410x80x270mm (W x H x D ), 14 Kg
GLP Support	Detailed reports with lamp operation time, number of lamp ignitions and further
Service information	Automatic Wavelength Adjustments/programming : Variable wavelength min. 2 or more

## Uv-vis Spectrophotometer Preparative Detector Uv6000

Uv6000 is special designed for preparative HPLC system. It can detect the samples online during the separation and purification. So it can do great help for the accuracy and results of the separation.

### Technical Specification

Wavelength range	190-700nm	Time constants	0.1/0.2/0.5/1/2/5/10s
Light Source	Deuterium lamp(standard)	Analog Output	$\pm 0.1 \pm 1.0 \pm 10V$
	Tungsten-Halogen lamp (optional)	Integrator Output	16 grades adjustable
Wavelength Accuracy	$\pm 2nm$	Auto Zero	Full Scale Range
Wavelength Reproduction	0.4nm	Digital data output	Rs232 Interface
Wavelength Scanning	Stop-flow mode,	Display	320 x 240 blue background color
	UV spectra acquisition o separated	Power	220V $\pm 10\%$ , 50Hz, 60W
	compounds in the stop-flow mode possible.	Dimension and Weight	398x49x267mm (W x H x D ),
Detection range	0-2AU		14 Kg
Baseline Noise	3 X 10 <sup>-3</sup> AU/h	GLP Support	Detailed reports with lamp
	methanol/water=80/20, Wavelength 254nm		operation time, number of lamp
Baseline drift	1 X 10 <sup>-3</sup> AU/h		ignitions and further service
	methanol/water=80/20, Wavelength 254nm		information

### Ordering Information

1	UV/VIS Spectrophotometer Preparative Detector UV6000	1
2	Tungsten-Halogen lamp with bas	1
3	Deuterium lamp with bas	1
4	Semi preparative flow cell	1

## Digital Amperometric EC detector, Model EC3200

The AEC3200 is a highly sensitive electrochemical detector for analytical HPLC. The instrument even allows for the detection of substances in the lower picogram range. For the use in a routine clinical environment, the AEC3200 features in easy handling and provides multitude of functions for automatisisation. The basic equipment of the AEC3200 includes the detector cell AEC4200.

### Technical Specification

Principle : Amperometric detector with three-electrode technique.

Working Potential	$\pm 2.00 V$	Storage capacity for	
Measurement Range	$\pm (10pA-20mA)$	measurement program	0 - 99
Auto Zero Range	max $\pm 50 mA$	Storage capacity for cell-cleaning	
Manual offset Range	max $\pm 50 mA$	program	0 - 99
LCD - Display	display of settings and measurement data	Analogue Output	$\pm 1V$ per measurement
Filter	5Hz - 0.02 Hz (0.2 - 50 sec)		range
Detector noise level	< 0.3 pA	Auto-zero interface	active low
Cleaning Potential	$\pm 2.00 V$	Input	115-230v, 50-60Hz
Detay time cleaning potential	10 - 1500sec	Output	12 V DC, 2.5 A
Cleaning Cycle	every 1st to 10th cycle	Dimensions	260 x 510 x 160 mm
		Weight	7.6 kg



## Product Specification

UV-2230 UV/Vis Detector		DAD 2230 <sup>+</sup> Diode Array Detector	
Wavelength Range	190nm-600nm	190nm-800nm (512diodes) 190nm-1015nm (1024diodes)	
Wavelength Precision	±0.1 nm	±0.1nm	
Wavelength Accuracy	≤±1nm	± 1nm	
Optical Bandwidth	8nm	± 1nm	
Rise Time	0.0s-9.9s		
Baseline Noise	+10 x 10 <sup>-6</sup> AU (empty cell, 254nm, time: 60min.)	+10 x 10 <sup>-6</sup> AU (empty cell, 254nm, time : 60min.)	
Baseline Drift	≤1 x 10 <sup>-4</sup> AU/h (empty cell,254nm, time: 60min)	≤1 x 10 <sup>-4</sup> AU/h (empty cell,254nm, time: 60min)	
Flow Cell	10mm path, Tapered Cell / Temperature controlled cell	10mm path, Tapered Cell / Temperature controlled cell	
Light Source	Deuterium Lamp (standard) Tungsten Halogen Lamp (optional)	Deuterium lamp & Tungsten lamp	
Power	AC 110V/220V, 50Hz/60Hz		
Consumption	110W		
Dimensions	420mm x 280mm x 175mm		
Data Acquisition :	upto 20 Hz	Data Acquisition : upto 20 Hz, Diode Averaging : 1.2 -8nm	
		Programmable parameters : Wavelength, Range, Autozero,	
		Spectra acquisition, ration marker	

ARI2230 Refractive Index Detector			
Refractive Index Range	1.00-1.75	Contact Output	Intensity alarm, Zero Over, Marker
Measuring Range	0.25 to 512 micro-RIU	Temperature Setting	30°C-50°C
Linear Range	600 micro-RIU	Cell Volume	8mL
Noise	2.5nRIU (response: 1.5sec)	Flow Rate	(Usual) : 0.2 to 3.0mL/min. (Max.) : 10mL/min (solvent pure water)
Auto Zero Range	All Range	Max back Pressure	50kPa
Auto Zero Resolution	Full auto range	Solvent Contact Parts	50kPa
Drift Adjusting Range	0-6 x 10 <sup>-4</sup> RIU	Power	60W
Drift Resolution	0.2 micro-RIU/h	Consumption	60W
Rise Time	FAST, STD, SLOW	Dimension/weight	W260 x D400 x H200 (mm), ca.13kg
Contact Input	Purge, Auto Zero, Marker, Polarity		

## Injector

As2230 Auto-sampler Injector			
Injection	Stepper motor drive runs via X, Y, Z	Record Effect	≤0.01% (decided by selected cleaning process)
Control	Micro-Processor	Cleaning Process	Programmable cleaning flow and cleaning volume
Communications	RS232C and system control port (remote control), 5 integrated REED relays, external contact closures	Analytical Time	The least unit can be 1 minute, 0.2minute and 1 second, the most time can be 9999 times of the least unit
Sample Loop	Changeable sample loop, Standard: 100mL	Sample Rack	Standard rack contains two 60 x 1.5 mL sample vials
Sample Increment	Linear stepper motor drive 500mL glass syringe pushes sample	Power	110.220v; 50/60Hz
Materials	Stainless steel or PEEK	Dimension	300mm x 415mm x 445mm
Changeable Volume	Injection mode 10mL, errors±1% Reproducibility fixed volume injection mode 10mL, errors±0.5%	Reproducibility	<0.3% RSP
Carry Over	0.01%	Accuracy	±1%
Sample Cooler (Optional)	4 - 40°C Peltier		

## DAC Columns

DAC stands for dynamic axial compression. It combines the preparative column and packing system together. It is very simple to operate. The column can be used online when it is packed well. Don't need to take the column down. It prevents mechanical degradation of the particles. Bed compression is maintained constant, independent of swelling or shrinking of the bed. If the solvent conditions are such that particle swelling takes place, then the piston automatically let the bed expand to maintain constant compression.

Analytical-PACK DAC columns can be consistently packed with small particulate media (10µm and less) to high levels of performance: column efficiencies of up to 50,000 theoretical plates per meter have been reported for columns of 50 and 300 mm internal diameter (i.d.). This requires an even distribution of the liquid flow over the column cross-section. Our engineers have modeled the flow pattern at the column ends and

designed efficient flow distribution systems for optimum performance. For even better control of chromatographic conditions, DAC columns are delivered with a temperature jacket and/or insulation.



DAC50 PREPARATIVE  
HPLC COLUMN



DAC800 PREPARATIVE  
HPLC COLUMN



DAC150 PREPARATIVE  
HPLC COLUMN

### Technical Specification

Column:	Internal diameter: ID30mm-ID1000mm Tube length: 650mm Tube internal surface finish: Ra ≤0.8µm Material: SST316 Sintered	Hydraulic cylinder:	Maximum working pressure: 50MPa Viscosity range: 46-68cst.
Filter:	Material: SST316 sintered pore size: 3-5µm	Pressure Indicator	Air pressure meter: 0-10bar, 0.01 degree Hydraulic meter: 0-400bar, 0.1 degree
Piston:	Material: SST316L	Working pressure	120bar max. Piston act on the column bed
		Air supply requirement:	Rated air out pressure 0.5-1 Mpa

## Analytical Semi-preparative / Preparative HPLC Column

### Analytical HPLC Column

Dimension: ID 4.6mm, Length 150-300mm

Connection: 1/16" (Standard)

Packing Material: World famous brand material, such as Kromasil, Luna, YMC, Daiso etc.

### Semi-Preparative HPLC Column

Dimension: ID 10-40mm, Length 150-300mm

Connection: 1/16" (Standard)

Packing Material: World famous brand material, such as Kromasil, Luna, YMC, Daiso etc.

### Preparative HPLC Column

Dimension: ID 50-500mm, Length 150-600mm

Connection: 1/8" or 1/4" (Standard)

Packing Material: World famous brand material, such as Kromasil, Luna, YMC, Daiso etc. we can produce all kinds of hplc columns basis of customers requirement.

Preparative hplc column re-packing service

Preparative hplc column application support.

We promise that each column must be tested strictly and attached with test report.



## HSCCC

HSCCC has unique advantages in the isolation and purification work of natural products and antibiotics.

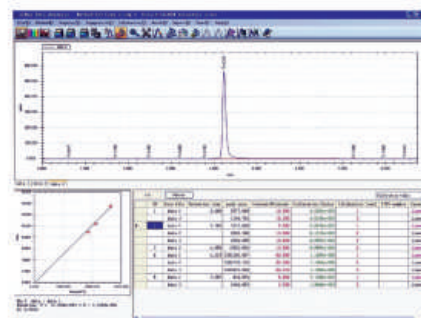




# ANALCHROM™ Chromatography Workstation Software

Analchrom Chromatography workstation software data handling system is compatible with any model of chromatographic analytical instrument available in the market. Our state-of-the-art hardware comes in two different models, namely single channel and dual channel model. For dual channel model, while you can connect the two channels to the dual detectors of the same instrument for simultaneous data acquisition, you can also connect them to two different instruments for independent data acquisition.

This software system is structured in such a way that all the sequences related to an analysis (starting from acquisition of raw data signal, to integration of chromatogram, to calculation of components quantities, through to preparation of analysis report) are incorporated in one source document called chromatogram file. By applying document window technique and split window technique, we have designed a one-page document window for you to display all the working elements of a chromatogram file in one screen for quick access and manipulation.



Analchrom is a liquid chromatography software package developed by Analytical Technologies. It provides complete control and data processing functions with a simple and efficient operation. Complies with 21 CFR / GLP / GMP features. PDA/DAD ( Diode Array Detector ) Control & acquisition is possible. Online GPC ( Gel Permeation Chromatography ) calculation.

- Licensed HPLC software for control of all HPLC module like pump, tector etc. for qualitative and quantitative analysis
- Parameter validation management
- Compatibility with general detectors
- Compatibility to import and export the data
- Ability to acquire and analyze and store spectral library
- Flexible report publisher to make report in desired form
- Should have system suitability option
- GLP compliance

ANALCHROM is the most universal software of the entire product line. All other versions are derived from the full Clarity software.

## MEASURING

Simultaneous data acquisition from up to four independent chromatographs, each chromatograph can acquire data from up to 12 detectors.

## INTEGRATION

There is extensive possibility to modify chromatograms. The chromatogram can be changed by entering global parameters or interactively, through direct graphic modification of the baseline.

## OVERLAY

Simultaneously displays a virtually unlimited number of chromatograms and their mathematical modification; for example, mutual deductions or derivations of any order.

## CALIBRATION

Internal and external standard calculation methods, calibration of groups of peaks and reference peaks method for better identification.

## USER SETTINGS

User selects parameters for peak display and the specification for axes, including color from and extensive array of color settings. Text labels and lines, either as part of the area or anchored to a chromatogram, may also be inserted.

## METHOD AND CALIBRATION HISTORY

Each chromatogram can easily be displayed under the same conditions as when it was printed, exported or saved.

## COLUMN PERFORMANCE

Calculations of peaks in terms of symmetry, efficiency, resolution; all by several methods (tangent, moments, etc)

## BATCH

Automatically batch processes, displays, exports or prints any number of chromatograms.

## USER ACCOUNTS

Sets up access rights and passwords (including their parameters e.g., minimum length, validity, etc.) Each user can define his or her own station appearance.

## AUDIT TRAIL

Records selected events and operations into a special file. Records selected operations directly into a chromatogram.

## ELECTRONIC SIGNATURE

Each chromatogram can be signed electronically. Signature selection is based on the signature certificate.



## Instruments & Accessories

### Fluorescence Detector

The Analytical Intelligent Fluorescence Detector is recognized as the industry's most sensitive detector with a signal-to-noise ratio of better than 350:1 for the Raman water peak. FLD 3000 covers a wide wavelength range both for excitation and emission from 220 to 700 nm (~ 900 nm with an optional PMT) with proven stability. Versatile time-programming capabilities are provided for wavelength, response, gain, spectral scan, etc., permitting highly selective detection of various compounds. A rapid scan feature allows on-the-flow spectral acquisition for both emission and excitation spectra without interrupting the chromatographic elution. A specially designed chemiluminescence attachment and capillary electrophoresis cell are optionally available. FLD 3000 can easily be interfaced with the Analytical HPLC system using the new 32 bit Analchrom HPLC System software for Windows2000. This package offers full automation of the Analytical HPLC system including the FLD 3000.



### Column Wash - Digital HPLC Pump

Digital pump for HPLC with flow rate 0.01 – 10 ml/min and limit of pressure 40 (20) MPa is designed for Columns washing. This Pump can also be used as a standby Pump for HPLC System.

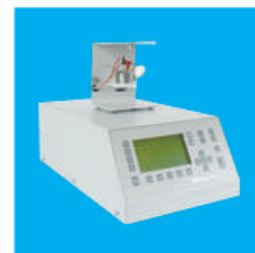
### Digital Amperometric EC Detector, Model EC3200

The AEC3200 is a highly sensitive electrochemical detector for analytical HPLC. The instrument even allows for the detection of substances in the lower picogram range. For the use in a routine clinical environment, the AEC3200 features in easy handling and provides a multitude of functions for automatization. The basic equipment of the AEC3200 includes the detector cell AEC4200.

Principle: Amperometric detector with three-electrode technique.

Working potential:  $\pm 2.00$  V, Measurement range:  $\pm (10\text{pA} - 20\text{ }\mu\text{A})$ , Auto-Zero range: max  $\pm 50\text{ }\mu\text{A}$ , Manual offset range: max  $\pm 50\text{ }\mu\text{A}$

LCD-display: display of settings and measurement data, Filter: 5 Hz - 0.02 Hz (0.2 - 50 sec), Detector noise level:  $< 0.3\text{ pA}$ , Automatic cell cleaning, -Cleaning potential:  $\pm 2.00$  V, Cleaning duration: 1 - 100 sec, Delay time cleaning potential: 10 - 1500 sec, Cleaning cycle: every 1st to 10th cycle, Storage capacity for measurement program: 0 - 99, Storage capacity for cell-cleaning program: 0 - 99, Analogue output:  $\pm 1$  V per measurement range, Auto-zero interface: active low, switching contact, active high, curr./volt. input, Power supply: input: 115 - 230 V, 50 - 60 Hz, output: 12 V DC, 2.5 A, Dimensions: 260 x 510 x 160 mm (w x d x h), Weight: 7.6 kg



### RI Detector

The RI 2000 Differential Refractive Index Detector series offers the sensitivity, stability and reproducibility required for optimal RI detection. The thermal isolated optic with a countercurrent heat exchanger and with its programmable temperature control, results in an extremely stable baseline and an optimal Signal / Noise ratio. The RI 2000 series provide autopurge and autozero capabilities, as well as RS232 communication to acquire data directly without using any external signal interface.

RI 2000 detectors are available for: - micro - analytical - semi preparative mode

### ELSD

ELSD is Ideal for Pharmaceutical and Nutraceutical Analysis. Universal, Sensitive Detection for Many Different Pharmaceutical Compounds. Amiloride HCl hydrate, Acetazolamide, Hydrochlorothiazide, Chlorthalidone, Hydrof umethiazide, Clopamide, Bumetanide, Trichloromethiazide, Indapamide, Bendrofl umethiazide, Bumetanide, Probenecid, Spironolactone etc.



### Auto Sampler for HPLC / UPLC / UFLC



The system can be upgraded at any time from the basic version for fixed volume injection with sample loop overfilling, up to variable volume injection mode for variable volumes from 1 - 100  $\mu\text{l}$  (optional up to 500  $\mu\text{l}$ ) without changing the sample loop. With the next upgrading step, the S 5200 can be used for fully automatic sample processing for pre-column derivatization. In the derivatising mode, up to three independent reagents can be added to a specified sample volume, mixed with sample and programmed with independent reaction times. In addition, the sample can be diluted with more than 100 times (depending on sample volume and syringe volume). For temperature sensitive samples, the sample tray can be cooled or heated with the optional cooling system. For chemical inert operation, the instrument can be delivered for fully metal-free sample handling (completely equipped with PEEK and FEP materials, including sample needle). A wide range of sample racks and sample vials can be used for operation from 1  $\mu\text{l}$  up to 5000  $\mu\text{l}$  or by using micro titer plates. Simple operation through large alphanumeric display menu.

### Sonicator

Ultrasonics (Ultrasound) is the sound which human beings cannot hear. Ultrasonics utilises frequencies from and above 18 KHz (18,000 Cycles per sound) High frequency electrical energy is converted in to ultrasound waves by means of ultrasonic Transducers, which are bonded on the base of S.S. Cleaning Tank. These high frequency sound waves create in the liquid countless, Microscopic Vacuum Bubbles, which rapidly expand and collapse. This phenomenon is CAVITATION. These bubbles act like miniature high speed brushes, driving the liquid in to all openings and minute recesses of the object immersed in the liquid. Intense scrubbing of Cavitation cleans away all the dirt and soil from the object immersed and the object is perfectly cleaned. Intricate objects can be cleaned with either complete or little Dismantling.





## Spares & Consumables / Columns / Source Lamps / Pre - Installation Requirements



Column



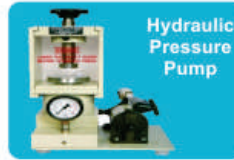
Tubing  
(SS,  
PEEK,  
FPE)



Manual  
Injector



Vials



Hydraulic  
Pressure  
Pump



Sample Loops



Column  
Oven



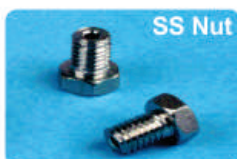
Column  
Wash  
Pump



Software  
Chromatograph  
w/s



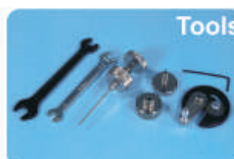
Multi way  
connectors



SS Nut



Gradient Mixer



Tools



Sonicator



Solvent  
Filtration  
Kit



Fittings



D2 Lamp

HPLC Consumables like Check Valves, Plunger, Plunger Seals, Columns (Analytical and Prep), Pulse Damper, Mixer, PEEK Nuts, SS Male, Nuts, Ferrules, S.S. Tubings, Solvent Reservoir Filter, Septas, Vials, Rotor Seal, Stator Face Assy, Loops, Syringes, Bearings, O-Rings, Line Filters for any make of HPLC systems. Flow Splitters, Pulse dampers, Multi Purpose HPLC Pumps (Isocratic & Gradient) & Manual Injectors CHIRAL, Preparative, Analytical, Capillary – HPLC Columns and guard columns, GPC Columns, Combi Chem and Amino Acid, Microbore HPLC Columns, BULK MATERIALS for Columns, frits and Hardware for Columns. Source Lamps for all Analytical Instruments such as D2, Halogen, Xenon, Tungsten, mercury vapors, hollow cathode lamps etc.

## Chemicals, Reagents & Medical Diagnostic kit



Hematology Reagent



Bio Chemistry Reagents



Urine Strips



Medical Diagnostic kit

We offer all the Consumables / Reagents Quality / Control Standards / Calibration Standards / Validation Standards required for running the analyzers like HPLC, SPECTROPHOTOMETER, FTIR, HEMATOLOGY ANALYZER, BIO-CHEMISTRY ANALYZERS (Clinical Chemistry Analyzers). We also manufacture reagents for Hematology and Bio Chemistry, Urine Analysis.



# Support & Services

## HPLC Servicing, Validations, Trainings and Preventive Maintenance:

HPLC Servicing	: We have team of service engineers who can attend to any make of HPLC promptly @ the most affordable cost.
AMC's/CMC	: We also take up Preventive Maintenance to reduce downtime of HPLC's
Trainings	: We offer user training both In-House and at customer sites on HPLC Principles, operations, troubleshooting
Validations	: We have protocols for carrying out periodic Validations as per GLP/GMP/U SFDA norms
Instruments	: We offer instruments / Renting Services Modules like pumps, detector etc. on Rent.



Workshop



Training

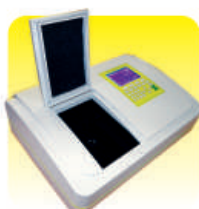
## ►► About Analytical Technologies

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 globe. 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 Other Products & Technologies



UV/VIS  
Spectro 2060+  
Double Beam



UV/VIS  
Spectro 2080+  
Double Beam



FTIR



Gas Chromatograph  
3000 Plus



Gas Chromatograph  
2979 Plus



Flash  
Chromatograph



Atomic Absorption  
Spectrophotometer



Optical Emission  
Spectrometer



DSC/TGA



Bio LC™



NOVA 2020 Plus  
Automated Bio-Chemistry  
Analyzer



HEMA 2062  
Hematology  
Analyzer



Micro Plate  
Reader / Washer



Urinova 2800  
Urine Analyzer



Fully Automated  
CLIA



NOVA Basic Semi - Auto  
Chemistry Analyzer



PCR/Gradient PCR/  
RTPCR



Blood Gas  
Analyzer



Random Access Analyzer  
for immunoassay,  
proteins & clinical chemistry



Semen Analyzer



Water Purification  
System

 **Analytical<sup>®</sup>**  
Technologies Limited

HPLC Solutions Analytical Bio- Med MultipleLabs

Analytical House, # E67 & E68, Ravi Park, Opp. Sainath Park, Vasna Road, Baroda - 390 015. Gujarat, INDIA.  
Tele.: +91 265 225 3620, 225 2839 Fax: +91 265 225 4395 Web: [www.analyticalgroup.net](http://www.analyticalgroup.net) / [www.ais-india.com](http://www.ais-india.com)  
Email: [info@ais-india.com](mailto:info@ais-india.com) / [info@hplctechnologies.com](mailto:info@hplctechnologies.com) / [info@multiplelabs.com](mailto:info@multiplelabs.com)