

# IC-D3160

## Ion Chromatograph



IC-D3160 ion chromatograph is a new modular design of the high stability of ion chromatograph, combining Analytical Technologies Limited independent research and development core technology products and foreign excellent machining process equal to one, not only can be configured conductance detector, combined with powerful chromatography workstation and precision circuit control system, the IC-D3160 ion chromatograph can also configure the UV-Vis detector implementing related to environment, food, chemical, geological, and many other areas of conventional anion and cation, sugar, amino acids, other small molecule organic acids, cyanide, etc.

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**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## ► PUMP

### Technical Specifications

Wetted Materials:	Stainless Steel / PEEK*, Teflon AF® PVDF, Ceramics, Sapphire, Ruby Programmable
Flow rate:	Micro: 0.001 - 4.000 ml/min Analytical: 0.001 - 10.000 ml/min Semi-Preparative: 0.1 - 40.000 ml/min
Flow Accuracy:	± 0.08% 1.000 ml / min
Flow Precision:	± 0.1 % RSD 1.000 ml/min
Pressure Range:	0 – 7500 psi Semi-Preparative: 20 MPa (up to 20.000 ml/min); 10 MPa (up to 40.000 ml/min) typical < 0.1 MPa or < 1.0 %
Pressure:	
Pulsation:	
Compressibility:	user-adjustable for different solvents
Compensation:	
Dimensions:	396 x 250 x 478 mm
(W x H x D)	
Power Supply:	100 - 250 ~V (47 - 63 Hz)
Pressure Ripple:	<1% without dampner

\* depending on configuration

### 3113i Quaternary Gradient Pump

Vacuum Degassing:	optional: < 20% dissolved gases remaining in water @ 1.000 ml/ min
Gradient Range:	0.0 – 100.0 %, 4 channels
Gradient Accuracy:	< 0.50 %
Gradient Mixing:	Active
Mixing Volume:	adjustable: 10 – 500 µl
Composition Precision:	≤ 0.15% RSD

### 3113i Binary Gradient Pump

Vacuum Degassing	optional: < 20% dissolved gases remaining in water @ 1.000 ml/ min
Gradient Range:	0.0 – 100.0 %, 4 channels
Gradient Accuracy:	< 0.50 %
Gradient Mixing:	Active
Mixing Volume:	adjustable: 10 – 500 µl

## 3530i Sample Injector System

The Analytical 3530i Sample Injector System is a very flexible and powerful HPLC autosampler with excellent reproducibility and linearity properties. Variable vial racks and adaptors for microliter plates as well as a multitude of firmware options make this system highly adaptable and suitable for any analytical application.

Wetted Materials:	Stainless Steel / PEEK*, PPS, PVDF
Sample tray(Thermostating):	4°C to 5°C Ambient Temperature
Sample Capacity:	50 x 0.5ml or more
Injection Volume:	Programmable 0.1 - 999.9 µl
Injection Volume Accuracy:	0.1-100µl
Column Length:	upto 250 mm along with guard c olumn
Column ID:	4 mm
Replicate Injection:	1-50 Per vial
Sample Heating/Cooling:	optional: +4 – +60 °C
Injection Precision:	< 0.5 % Variable Volume Injec tion (10 µl; typically ~0.25 %)
Linearity:	Correlation Factor > 0.999 (10 µl injection volume, 500 µl Syringe)
Cross contamination:	<0.1% Wash with & without automated needle Wash
Dispensing Precision	<0.2%RST
Temperature Accuracy:	±0.5°C
Carry Over:	< 0.01 % with 500 µl flush volume
Dimensions:	396 x 275 x 478 mm
(W x H x D)	
Power Supply:	100 - 250 ~V (47 - 63 Hz)

## ►► EC Detector

### Technical Specification

Principle : Amperometric detector with electrode technique.

Working Potential	± 2.00 V	Storage capacity for	
Measurement Range	50pC- 200uC(Int. Amp), 5PA-74uA(dc Amp)	measurement program	0 - 99
Auto Zero Range	max ±50uA	Storage capacity for cell-cleaning	
Manual offset Range	max ±50uA	program	0 - 99
LCD - Display	display of setting and measurement data	Analogram Output	+ 1V per measurement
Filter	5Hz - 0.02 Hz (0.2 - 50 sec)		range
Counter Electrode	Titanium/SST	Working Electrode	Gold/platinum/Silver electrode with gasket
Reference Electrode	Ag / AgCl		and Polishing kit
Detector noise level	<0.3 pA	Auto-Zero interface	active low
Cleaing Potential	± 2.00 V in 0.001V increment	Input	115-320 , 50-60Hz
Detay time cleaning	10 - 1500sec	Output	12 V DC, 205 A
Cleaning Cycle	every 1st to 10th cycle	Dimensions	260 x 251 x 160 mm
Cell Volume	<0.5uL	Weight	7.6 kg

## Digital Temperature-Control Detection System

### Double Conductivity Meter:

Structure	Five polar ring passively and 316 SS conductance detector.
Detection Mode	Double Conductivity detection
Conductance cell size	< 0.8 uL
Output Voltage	500- 5000 mV (to regulate)
Measure range	0-30000uS/cm (10 level to choose)
Resolution	≤ 0.025ns
Conductance temperature	5-50 degree C (to regulate)
Constant Temperature accuracy	±0.01 degree C
Baseline Noise	≤ 0.6 % FS
Electronic Noise	< 10 pA, IPAD: <50 pC
Baseline Drift	≤ 2.0% FS

### Analytic Capability

High Capacity Anion Column	pH 0-14 & Reverse phase compatible organic solvent,etc can be analyzed at the same time with one injection
High Capacity Cation Column	Lysine, chlorine chloride can be separated and analyzed
Analyze repeatability	≤ 1.0% (see SO <sub>4</sub> <sup>2-</sup> )
Linear range	≥10 <sup>3</sup>
Minimum concentration of detection	≤ 0.0001ug/g (see Cl <sup>-</sup> )
	≤ 0.005ug/g (see BrO <sub>3</sub> <sup>-</sup> )
	≤ 0.01ug/g(see Ca <sup>2+</sup> )
	≤ 0.001ug/g (see Cu <sup>2+</sup> )
	≤ 0.001ug/g (see CrO <sub>4</sub> <sup>2-</sup> )
Anion exchange capacity	100ueq.
Operating Pressure (Max.)	15 MPa

## 3411i Column Oven

The Analytical 3411i Column Oven is a contact heat transfer oven for high temperature stability and accuracy. The columns are mounted inside the column oven in optimized column holder which enclose the

complete column to get the best temperature transfer between the heater and the column. Up to two columns (max. length 250 mm) can be mounted at the same time (max. O.D. 8 mm).

### Heating

The Analytical 3411i Column Oven standard version features a high temperature controller for stable column temperatures of +30°C up to +100°C. The temperature accuracy is within 0.1 °C.

### Temperature Time Program

The Heating/Cooling variant offers an optional Temperature Time Program for stand-alone operation.

### Heating/Cooling

The Analytical 3411i Column Oven is also available with active Heating/Cooling with Peltier technique. The temperature range is +5°C up to +100°C. The Heating/Cooling unit uses the same efficient controller as the basic version with temperature accuracy better than 0.1 °C.

### Integrated Valve

The Analytical 3411i Column Oven offers the option to include an automatic switching valve of the Analytical 3600, for example the 3607 Column Selection Valve, but all 3600 can be integrated.

### Leakage Sensor

The 3441i Column Oven offers a high sensitive Leakage Sensor which detects the vapors of organic solvents.

### Temperature Fuse

Besides a Leakage Sensor the 3441i offers a temperature fuse which shuts down the unit when the temperature becomes too high, because of an electronic defect.

### OEM Options

The Analytical 3441i Column Oven itself is available as a complete OEM instrument. Please contact us for any further information on OEM modules.

### Technical Specifications

Wetted Materials:	Stainless Steel / PEEK <sup>1</sup> , PPS <sup>1</sup>
Temperature Range:	+30°C – +100°C (min.: ambient +5 °C) optional : +5°C – +100 °C (Peltier) <sup>2</sup>
Temperature Accuracy:	< 0.1 °C
Switching Valve:	optional : any Valve
Temperature Program:	optional with Heating/Cooling (Peltier)
Safety Features:	Temperature Fuse; Leakage Sensor
Dimensions: (W x H x D)	396 x 165 x 478 mm
Power Supply:	100 - 250 ~V (47 - 63 Hz)

<sup>1</sup> Switching Valve: depending on configuration

<sup>2</sup> Temperature range at 20°C ambient

## 3412i Column Oven

The Analytical 3412i Column Oven is a contact heat transfer oven for high temperature stability and accuracy. The columns are mounted inside the column oven in optimized column holder.

### Heating

The Analytical 3412i Column Oven standard version features a high temperature controller for stable column temperatures of +30°C up to +150°C. The temperature accuracy is within 0.1 °C.

### Heating/Cooling

The Analytical 3412i Column Oven is also available with active Heating/Cooling with Peltier technique. The temperature range is +5°C up to +100°C. The Heating/Cooling unit uses the same efficient controller as the basic version with temperature accuracy better than 0.1 °C.

### Temperature Time Program

The Heating/Cooling variant offers an optional Temperature Time Program for stand-alone operation.

### Integrated Valve

The Analytical 3412i Column Oven offers the option to include an automatic switching valve of the Analytical 3412i, for example the 3600 Column Selection Valve, but all 3600 Valves can be integrated.

complete column to get the best temperature transfer between the heater and the column. Up to three 350mm columns can be mounted at the same time.

### Leakage Sensor

The 3412i Column Oven offers a high sensitive Leakage Sensor which detects the vapors of organic solvents.

### Temperature Fuse

Besides a Leakage Sensor the 3412i offers a temperature fuse which shuts down the unit when the temperature becomes too high, because of an electronic defect.

### OEM Options

The Analytical 3412i Column Oven itself is available as a complete OEM instrument. Please contact us for any further information on OEM modules.

### Technical Specifications

Temperature Range:	Stainless Steel / PEEK1, PPS1 +30°C – +150°C (min.: ambient +5 °C) optional: +5°C – +100 °C (Peltier) <sup>2</sup>
Temperature Accuracy:	< 0.1 °C
Temperature stability:	±0.1 °C to set temperature
Switching Valve:	optional: any Valve
Temperature Program:	optional with Heating/Cooling (Peltier)
Safety Features:	Temperature Fuse; Leakage Sensor
Dimensions: (W x H x D)	183 x 566 x 270 mm
Power Supply:	100 - 250 ~V (47 - 63 Hz)

<sup>1</sup> Switching Valve : depending on configuration

<sup>2</sup> Temperature range at 20°C ambient

## 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.

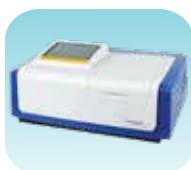
**Instruments** :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



## 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.

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Spectrophotometer



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Micro Plate  
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Urine Analyzer



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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](mailto: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 @



 **Analytical**®  
Technologies Limited

**HPLC Solutions   MultipleLabs   Analytical Bio-Med   Analytical Distributors   Analytical Foundation (Trust)**

**Corporate & Regd. Office:**  
Analytical House, # E67 & E68,  
Ravi Park, Vasna Road, Baroda,  
Gujarat 390 015. INDIA

T: +91 265 2253620  
+91 265 2252839  
+91 265 2252370  
F: +91 265 2254395

E: [info@hplctechnologies.com](mailto:info@hplctechnologies.com)  
[info@multiplelabs.com](mailto:info@multiplelabs.com)  
[info@analyticalgroup.net](mailto:info@analyticalgroup.net)  
[info@analyticalbiomed.com](mailto:info@analyticalbiomed.com)

W. [www.analyticalgroup.net](http://www.analyticalgroup.net)  
[www.hplctechnologies.com](http://www.hplctechnologies.com)  
[www.multiplelabs.com](http://www.multiplelabs.com)  
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