

# DSP - 3210

## Dual Syringe Pump



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

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

## ►► **PRODUCT INTRODUCTION**

The DSP 3210 Infuse/Withdraw syringe pump offers unparalleled ease of use through the high resolution touch screen. The basic model works with one syringe or two and can be reconfigured in the field to be used with multiple syringes. The full touch screen interface enables the user to quickly create configurations and recall them for easy use. The 4.3" TFT color display with touch pad interface presents all the pump operating parameters on one easy to view run screen. Protective cover over the display prevents leakage into the display. To optimize your bench space the DSP 3210 can be placed on it's side to reduce the footprint by 4 times. The footprint is only 3.5 in. x 9.75 in. the display also tilts with the change to allow the user to operate the pump vertically.

The DSP 3210 is an infuse/withdraw syringe pump. It accommodates 2 syringes from 0.5ul to 140ml. User definable flow rates with selectable target volumes or time values to control the total infusion volume. An LED light on the front panel makes it easy to see if the pump is running. The programmable model offers maximum flexibility for configuring and running different programs. Up to 40 programs of 20 steps each can be configured and stored in the unit and recalled quickly with the touch of a button.

The pumps are versatile and can be connected through the RS485 interface Advanced microstepping techniques are employed to further reduce the step angle to eliminate flow pulsation. The accuracy is  $\pm 0.35\%$  A wide dynamic flow range from 5 pl/min to 215.803 ml/min can be programmed into the pump. Add the New Adagio software to maximize the use of the pumps functions and features. Adagio allows you to configure the pump through the software as well as operate one or multiple pumps.

Pumps are acknowledged as the industry's highest values solution for delivering precise and smooth flow. ATL is recognized worldwide for quality and reliability at an economical price and has the broadest line of syringe pumps to meet your specific application.

We are committed to delivering the highest level of customer satisfaction, as well as technical support for all their products.

## ►► **BENEFITS**

- Automatic dispensing of small volumes
- Constant delivery of fluids
- Hands free operation
- Better flow performance

## ►► **FEATURES**

- Accuracy  $\pm 0.35\%$
- Holds one or two syringes from 0.5  $\mu$ l to 140 ml
- High resolution color touch screen
- Real time clock
- Unparalleled ease of use
- Touch pad "lock" feature
- LED light on front panel
- Full metal chassis
- Built in syringe table
- Up to 75 lbs (34 kg) linear force
- Advanced microstepping techniques
- Built in RS-485 interface to link multiple pumps
- USB port & RS232 Interface
- I/O & TTL interface
- Continuous mode of operation
- Protection with a spill dam
- Analog control option
- CE, UL, CSA, CB Scheme, EU RoHS

## ►► **APPLICATIONS**

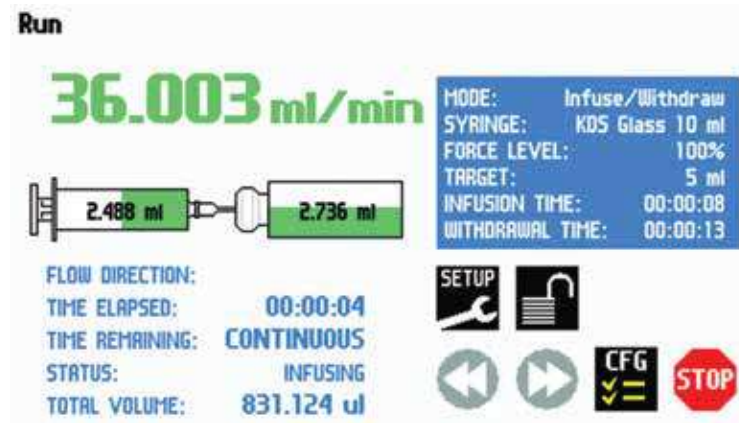
- Microfluidics
- Drug Discovery
- Nanofluidics
- Polymer Research
- HPLC - Mass Spec
- Organic Synthesis
- Electrospinning
- Reactor Injections

## ►► **MARKETS**

- Pharmaceutical
- Biotech
- Chemical
- Neuroscience
- Research and Development
- Government
- Petrochemical
- Food and Beverage

## ►► INTUITIVE RUN SCREEN

Combining multiple parameters simultaneously with internationally recognizable icons allow the DSP Series to provide a new level of intuitive syringe pump operation.



## ►► SPECIFICATIONS

Model	DSP 3210
Syringe Size	0.5 µl to 140 ml
Power	100-240 VAC: 50/60 Hz, 50 W. 0.5 A fuse
Motor Drive Control	Microprocessor with 1/16 micro stepping
Linear Force (Maximum)	34 kg (75 lbs) @ 100% force selection
Number of micro steps per One Revolution of Lead Screw	6400
Step rate (Minimum)	27.5 sec/µstep
Step rate (Maximum)	26 µsec/µstep
Drive Motor	1.8 degree Stepper Motor
Pusher Travel Rate - (Minimum)	0.36 µm/min
Pusher Travel Rate - (Maximum)	190.80 mm/min
Flow Rate (Minimum)	5 pl/min (0.5 µl syringe)
Flow Rate (Maximum)	215.803 ml/min (140 ml syringe)
Dimensions	8.89 x 25.4 x 27.94 cm (3.5 x 10 x 11 in))
Weight	4.9 kg (10.75 lb)
Connectors	RS-232 – 9 Pin D – Sub Connector, RS – 485 – IEEE-1394 6 pos, USB – Type B, I/O & TTL – 15 Pin D – Sub Connector

## ►► FLOW RATES

Syringe	Diameter	Minimum	Maximum
0.5 µl	0.103 mm	3.12 pl/min	1.589 µl/min
1 µl	0.146 mm	6.18 pl/min	3.180 µl/min
2 µl	0.206 mm	12.301 pl/min	6.358 µl/min
5 µl	0.343 mm	33.96 pl/min	17.630 µl/min
10 µl	0.485 mm	67.72 pl/min	35.249 µl/min
25 µl	0.729 mm	153.42 pl/min	79.640 µl/min
50 µl	1.03 mm	306.24 pl/min	158.984 µl/min
100 µl	1.457 mm	612.72 pl/min	318.126 µl/min
250 µl	2.304 mm	1.533 nl/ min	795.51 µl/min
500 µl	3.256 mm	3.06 nl/min	1.588 ml/min
1000 µl	4.608 mm	6.129 nl/min	3.181 ml/min
1 ml	4.699 mm	6.373 nl/min	3.308 ml/min
3 ml	8.585 mm	21.272 nl/min	11.044 ml/min
5 ml	11.989 mm	41.485 nl/min	21.539 ml/min
10 ml	14.427 mm	60.073 nl/min	31.19 ml/min
20 ml	19.05 mm	104.74 nl/min	54.383 ml/min
30 ml	21.59 mm	134.533 nl/min	69.852 ml/min
50 ml	26.594 mm	204.122 nl/ min	105.985 ml/min
100 ml	35.7 mm	367.839 nl/min	190.992 ml/min
140 ml	38.4 mm	415.623 nl/min	215.803 ml/min

## ►► MODULAR SYRINGE RACKS

Racks can be purchased to create a multichannel syringe pump.



### Small Syringe Multi-Rack

- Infuse/Withdraw 6/10 Multi-Rack
- Six 30 to 60 ml plastic syringes or ten 0.5 µl to 20 ml syringes
- Can be sold for Infuse Only as well



### Large Syringe Multi-Rack

- Infuse/Withdraw 4 x 140 Multi-Rack
- Four 60 to 140 ml syringes
- Can be sold for Infuse Only as well



### Large Syringe Multi-Rack

- Infuse/Withdraw 4 x 140 Multi-Rack
- Four 60 to 140 ml syringes
- Can be sold for Infuse Only as well



## 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



UV/VIS  
Spectro 2080+  
Double Beam



Infra FTIR



Optima Gas  
Chromatograph  
3007



Optima Gas  
Chromatograph  
2979 Plus



Flash  
Chromatograph



Atomic Absorption  
Spectrophotometer



Liquid Particle  
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](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.



 **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)

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

Sales & Support Offices:  
across the country :  
Distributors & Channel  
partners World Wide