

**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  $0.5 \mu\text{l}$  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

# KDS Legato™ 210

## Infuse/Withdraw Syringe Pump



### The NEW KDS Legato™ 210 series is the next generation of syringe pumps

The KDS Legato 210 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 Legato 210 can be placed on its 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 Legato 210 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.

KD Scientific pumps are acknowledged as the industry's highest value solution for delivering precise and smooth flow. KD Scientific is recognized worldwide for quality and reliability at an economical price and has the broadest line of syringe pumps to meet your specific application. KD scientific is committed to delivering the highest level of customer satisfaction, as well as technical support for all their products.

**NOTE: KD Scientific syringe pumps are for laboratory use only.**

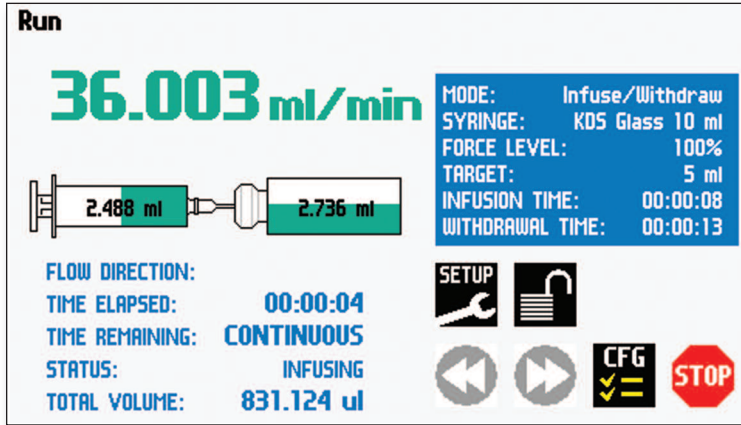
# kdScientific

84 October Hill Road • Holliston, MA 01746

www.kdscientific.com • phone 508.429.6809 • fax 508.893.0160

## Intuitive Run Screen

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



## Specifications

Model	KDS Legato 210
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 microstepping
Linear Force (Maximum)	34 kg (75 lbs) @ 100% force selection
Number of Microsteps 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

Also Available in Programmable Version!

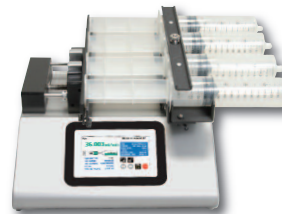
## Modular Syringe Racks

Racks can be purchased to create a multichannel syringe pump.



### Small Syringe Multi-Rack Option (78-8300)

- 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 Option (78-8301)

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



### Microliter Syringe Multi-Rack Option (78-8302)

- Infuse/Withdraw Microliter Rack
- Four 0.5 µl to 10 ml syringes
- Can be sold for Infuse Only as well