



CARFIL QUALITY
YOUR SUPPLIER FOR ALL LABORATORY NEEDS

Legato Series



The Legato® product line is the latest generation of syringe pumps. The Legato® series offers unparalleled ease of use through the high resolution color touch screen user interface. 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.

Displays more information simultaneously

- Easy to use and set up different configurations
- Intuitive Graphic Interface and Touch Screen
- International Icons, make it easy to use in any language
- Alarm Indication and Messages
- Pump Diagnostic/Information
- USB Interface
- Graphic Software to configure and monitor the pumps

Legato's Design Advantages

In today's economic environment, multiple users with different experiments are using the same pump. The next generation of pump has to meet these demands. The pump's role in the experiment now changes more readily with multiple users using one pump and multiple tests being done with a single pump.

- Programs need to be stored & easily recalled
- Users want the flexibility of changing syringe mechanisms in the field: going from large to small syringes, or from 2 to 10 syringes
- Better flow performance and repeatability with measurements down to nl/hour
- Stronger syringe clamping at higher pressures -not just simple spring clamping

Engineered to Meet Global Regulatory Compliance

Worldwide use of the pumps and changing regulatory compliance meant redesigning the unit to meet these new standards



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including lead free boards. The new Legato® is a pump that will meet worldwide regulations.

Optimize Bench Space

The Legato® Series optimizes the bench space in your lab. For limited laboratory space the Legato® series can be placed on its side to reduce the footprint by 4 Times. The display orientation changes automatically with the Legato® Series.

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.

A large variety Legato 100 and 200 pumps is available, see table. More detailed information is available on demand.

Infuse Only and Continuous Cycle Pump / Specifications

	Infuse Only			Continuous Cycle Pump	
Legato Model	Legato 100	Legato 101	Legato 200	Legato 270	Legato 270P
Mode	Infuse only	Infuse only	Infuse only	Infuse/Withdraw/Continuous	Infuse/Withdraw/Continuous
Number of Syringes	One	Two	Two	Two and Two (Four total)	Two and Two (Four total)
Syringe Size	0,5µl to 60 ml	0,5µl to 10 ml	0,5µl to 140 ml	0,5µl to 140 ml	0,5µl to 140 ml
User Interface	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen
Display	4,3" QVGA Display	4,3" QCGA Display	4,3" QCGA Display	4,3" QCGA Display	4,3" QCGA Display
Accuracy	+/- 0,5%	+/- 0,5%	+/- 0,35%	+/- 0,35%	+/- 0,35%
Repeatability	+/- 0,05%	+/- 0,05%	+/- 0,05%	+/- 0,05%	+/- 0,05%
Linear Force	13,6 kg	13,6 kg	34 kg	34 kg	34 kg
Force Adjustment	Yes	Yes	Yes	Yes	Yes
Minimum Flowrate 0,5µl Syringe	1,26 pl/min	1,26 pl/min	3,06 pl/min	3,06 pl/min	3,06 pl/min
Maximum Flowrate 10 ml Syringe	25,99 ml/min	25,99 ml/min	31,190 ml/min	31,190 ml/min	31,190 ml/min
Maximum Flowrate 60 ml Syringe	88,28 ml/min	/	105 ml/min	105 ml/min	105 ml/min
Drive Motor	0,9" Stepper Motor	0,9" Stepper Motor	1,8" Stepper Motor	1,8" Stepper Motor	1,8" Stepper Motor
Microprocessor Motor Drive Control	1/16 microstepping	1/16 microstepping	1/16 microstepping	1/16 microstepping	1/16 microstepping



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# microsteps/ one revolution of lead screw	15360	15360	6400	6400	6400
Advance per microstep	0,069 µm/step	0,069 µm/step	0,1656 µm/step	0,1656 µm/step	0,1656 µm/step
Minimum Step Rate	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep
Maximum Step Rate	26 µs/µstep	26 µs/µstep	26 µs/µstep	26 µs/µstep	26 µs/µstep
Pusher Travel Rate					
Minimum	0,15 µm/min	0,15 µm/min	0,36 µm/min	0,36 µm/min	0,36 µm/min
Maximum	159 mm/min	159 mm/min	190,8 mm/min	190,8 mm/min	190,8 mm/min
Multi-step programming	N/A	N/A	N/A	1 program / 100steps	40 programs / 25 steps
Constante rate	/	/	/	Yes	Yes
Ramp	/	/	/	Yes	Yes
Pulsed	/	/	/	Yes	Yes
Stepped	/	/	/	Yes	Yes
Program export/import	/	/	/	Yes	Yes
Pusher Block stall Detection	Yes	Yes	Yes	Yes	Yes
Computer Interface	USB	USB	USB/RS-232	USB/RS-232	USB/RS-232
TTL	Yes	Yes	Yes	Yes	Yes
Network	RS-485	RS-485	RS-485	RS-485	RS-485
Real Time clock	No	No	Yes	Yes	Yes
External triggers	One	One	Two	Two	Two
Analog input	No	No	No	Yes (option)	Yes (option)
Footswitch Interface	Yes	Yes	Yes	Yes	Yes
Maintenance Reminder	Yes	Yes	Yes	Yes	Yes
Calibration reminder	No	No	Yes	Yes	Yes
Password lock	Yes	Yes	Yes	Yes	Yes
Audible Alarm Indication	Yes	Yes	Yes	Yes	Yes
Display Rotation	Automatic	Automatic	Automatic	Automatic	Automatic
Multisyringe Rack Accessories	No	No	Yes	No	No
Run LED	Blue	Blue	Blue	Blue	Blue



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Power	12-32 VDC	12-32 VDC	100/240 VAC 50/60 HZ	100/60 HZ 50/60 HZ	100/60 HZ 50/60 HZ
Weight	2,66 kg	2,66 kg	4,9 kg	4,9 kg	4,9 kg
Dimensions (cm) HxWxL	22,6*19,05*15	22,6*19;05*15	8,89*25,4*27,94	8,89*25,4*27,94	8,89*25,4*27,94
Certification					
CE, ETL, UL, CSA, CB, Scheme	Yes	Yes	Yes	Yes	Yes
EN61010, EN61326	Yes	Yes	Yes	Yes	Yes
WEEE, EU RoHS	Compliant	Compliant	Compliant	Compliant	Compliant

Infuse/Withdraw Specifications

	Infuse Only					
Legato Model	Legato 110	Legato 111	Legato 180/185	Legato 130	Legato 210	Legato 210P
Mode	Infusie Withdraw	Infusie Withdraw	Infusie Withdraw	Infusie Withdraw	Infusie Withdraw	Infusie Withdraw
Number of Syringes	One	Two	Two/One	Two	Two	Two
Syringe Size	0,5µl to 60 ml	0,5µl to 10 ml	0,5µl to 10 ml	0,5µl to 1 ml	0,5µl to 140 ml	0,5µl to 140 ml
User Interface	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen
Display	4,3" QVGA Display	4,3" QCGA Display	4,3" QCGA Display	4,3" QCGA Display	4,3" QCGA Display	4,3" QCGA Display
Accuracy	+/- 0,5%	+/- 0,5%	+/- 0,35%	+/- 0,5%	+/- 0,35%	+/- 0,35%
Repeatability	+/- 0,05%	+/- 0,05%	+/- 0,05%	+/- 0,05%	+/- 0,05%	+/- 0,05%
Linear Force	13,6 kg	13,6 kg	13,6 kg	5 kg	34 kg	34 kg
Force Adjustment	Yes	Yes	Yes	Yes	Yes	Yes
Minimum Flowrate 0,5µl Syringe	1,26 pl/min	1,26 pl/min	0,540 pl/min	3,66 pl/min	3,06 pl/min	3,06 pl/min
Maximum Flowrate 10 ml Syringe	25,99 ml/min	25,99 ml/min	11,7 ml/min	3,818 ml/min 1ml syringe	31,190 ml/min	31,190 ml/min
Maximum Flowrate 60 ml Syringe	88,28 ml/min	/	NA	NA	105 ml/min	105 ml/min
Drive Motor	0,9" Stepper Motor	0,9" Stepper Motor	0,9" Stepper Motor	1,8" Stepper Motor	1,8" Stepper Motor	1,8" Stepper Motor
Microprocessor Motor Drive Control	1/16 microstepping	1/16 microstepping	1/16 microstepping	1/16 microstepping	1/16 microstepping	1/16 microstepping



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Minimum Step Rate	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep	27,5 s/µstep
Maximum Step Rate	26 µs/µstep	26 µs/µstep	52 µs/µstep	52 µs/µstep	26 µs/µstep	26 µs/µstep
Pusher Trvel Rate						
Minimum	0,15 µm/min	0,15 µm/min	0,02 µm/min	0,433 µm/min	0,36 µm/min	0,36 µm/min
Maximum	159 mm/min	159 mm/min	71,55 mm/min	228,97 mm/min	190,8 mm/min	190,8 mm/min
Multi-step programming	2 Program / 50 steps	2 Program / 50 steps	2 Program / 50 steps	2 Program / 50 steps	1 Program / 100 steps	40 Program / 25 septs
Constante rate	Yes	Yes	Yes	Yes	/	Yes
Ramp	Yes	Yes	Yes	Yes	/	Yes
Pulsed	No	No	No	No	/	Yes
Stepped	No	No	No	No	/	Yes
Program export/import	Yes	Yes	Yes	Yes	/	Yes
Pusher Block stall Detection	Yes	Yes	Yes	Yes	Yes	Yes
Computer Interface	USB	USB	USB	USB	USB/RS-232	USB/RS-232
TTL	Yes	Yes	Yes	Yes	Yes	Yes
Network	RS-485	RS-485	RS-485	RS-485	RS-485	RS-485
Real Time clock	No	No	No	No	Yes	Yes
External triggers	One	One	One	One	Two	Two
Analog input	No	No	No	No	Yes (option)	Yes (option)
Footswitch Interface	Yes	Yes	Yes	Yes	Yes	Yes
Maintenance Reminder	Yes	Yes	Yes	Yes	Yes	Yes
Calibration reminder	No	No	Yes	No	Yes	Yes
Password lock	Yes	Yes	Yes	Yes	Yes	Yes
Audible Alarm Indication	Yes	Yes	Yes	Yes	Yes	Yes
Display Rotation	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Multisyringe Rack Accessories	No	No	No	No	Yes	Yes
Run LED	Blue	Blue	Blue	Blue	Blue	Blue



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Weight	2,66 kg	2,66 kg	2,66 kg	2,05 kg	4,9 kg	4,9 kg
Dimensions (cm) HxWxL	22,6*19,05*15	22,6*19,05*15	22,6*19,05*15	22,6*19,05*9,32	8,89*25,4*27,94	8,89*25,4*27,94
Certification						
CE, ETL, UL, CSA, CB, Scheme	Yes	Yes	Yes	Yes	Yes	Yes
EN61010, EN61326	Yes	Yes	Yes	Yes	Yes	Yes
WEEE, EU RoHS	Compliant	Compliant	Compliant	Compliant	Compliant	Compliant



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