



AL-1200FW1

12-RACK PROGRAMMABLE SYRINGE PUMP



The Aladdin Programmable 12-Syringe Pump with Firmware Upgrade v1 (AL-1200FW1) is designed for higher-throughput micro-dispensing. With its firmware upgrade, the control parameters for functions such as ramping and creating flow gradients offers excellent utility across many sectors. Particularly, this simplistic pumping solution can be implemented into organ-on-chip (OOC) and lab-on-chip (LOC) workflows for handsfree fluid control, and service multi-stage perfusion protocols. You may program up to 41 pumping phases that include changing pumping rates, setting dispensing volumes, inserting pauses, controlling or responding to external signals, or sounding the buzzer.

Features

- Holds 2, 4, 6, 8, or 12 syringes of up to 3 mL each (Glass or stainless steel syringes larger than 20 mL may require Anti-siphon Modification Kit.)
- Infusion rates from 0.45 $\mu\text{L/hr}$ (1 mL syringe) to 153.2 mL/hr (3 mL syringe)
- Easy-to-use keypad interface
- Operate in a stand-alone fashion or from a computer
- Higher flow rate models available
- Infuse/withdrawal
- Programmable preset protocols
- RS-232 and TTL logic control interfaces
- Worldwide power supplies available
- Motor stall detection
- Non-volatile memory of all parameters and programming
- Dispensing accuracy of $\pm 1\%$

Example Flow Rates

Syringe Size	Max. Rate	Min. Rate
0.5 μL	17.45 $\mu\text{L/hr}$	0.001 $\mu\text{L/hr}$
1 mL	36.19 mL/hr	0.452 $\mu\text{L/hr}$
3 mL	153.2 mL/hr	1.914 $\mu\text{L/hr}$

Firmware Upgrade v1

- Pre-Programmable linear/gradient functionality
- Dual pumping
- Continuous Pumping Mode
- Dual Pump Constant Flow Rate Gradient Pumping Mode
- Additional programming functions for more complex pumping programs

SPECIFICATIONS

MECHANICAL & ELECTRICAL

Syringe sizes.....	Up to 3 mL
Number of syringes.....	12
Motor type.....	Step motor
Motor steps per revolution	200
Microstepping.....	1/8 to 1/4 depending on motor speed
Advance per step.....	0.132291667µM to 0.26458333µM depending on motor speed
Motor to drive screw ratio.....	5/1
Drive screw pitch	24 revolutions/inch
Power supply	Wall adapter 12V DC @ 1000 mA
DC connector.....	2.5mm, center positive
Power supply type.....	Unregulated linear external wall adapter
Dimensions	10.25"x15"x5" High (26x38.1x12.7 cm)
Weight	10.125 lbs. (4.595 kg)

OPERATIONAL

Maximum speed	3.4917 cm/min.
Minimum speed	0.0026 cm/hr.
Maximum pumping rate	1163 mL/hr. with a B-D 60 cc syringe
Minimum pumping rate	0.454 µL/hr. with a B-D 1cc syringe
Force applied to all syringes	160 Lbs. at min. speed, 30 lbs. at max. speed
Number of program phases	41
RS-232 pump network	100 pumps maximum
RS-232 selectable baud rate.....	300, 1200, 2400, 9600, 19200
Syringe inside diameter range	0.100–50.00 mm