

## NE-1002X Microfluidics Syringe Pump

Continuous Infusion Microfluidics  
Syringe Pump System  
DUAL-NE-1002X

OEM Microfluidics Syringe Pump  
NE-502X



### NE-1002X Features:

#### Advance Per Step: 4.252232 Nanometers

Smooth pumping at ultra low flow rates. Accepts syringes from the smallest size available up to 60 mL. A 140 mL syringe can be filled up to 120 mL. Pumping rate as low as 0.008 nL/hr with a .5  $\mu$ L syringe or as high as 1246  $\mu$ L/min with a 60 mL syringe. Includes the X Upgrade Smooth Linear/Gradient increasing and decreasing pumping feature.

### The NE-1000 Family of Syringe Pumps Features

- Built for Automation
- Operates stand-alone or from a computer
- Infuses and withdraws
- Applications range from simple infusions to complex pumping programs
- Programmable preset protocols
- Program up to 41 pumping phases: change pumping rates, set dispensing volumes, insert pauses, control and respond to external signals, sound the buzzer.
- RS-232 and TTL logic control interfaces

Two pumps connected with a dual cable create a Dual Pump System allowing for continuous infusion or emulsification. Network, control, and monitor up to 100 pumps with one computer. World-wide power supplies available. Motor stall detection. Non-volatile memory of all parameters and programming. Upgradeable to the X and X2 advanced firmware versions for gradient pumping and increased program memory. Dispensing accuracy of +/-1%. Unlimited lifetime technical support. Two year warranty. Plus many, many more features!

**\*\*Not For Clinical Use On Humans\*\***



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New Era Pump Systems, Inc.  
138 Toledo St. • Farmingdale, NY 11735 • 631-249-1392



## Model: NE-1002X Microfluidics Syringe Pump

### Maximum and Minimum Flow Rates

Manufacturer	Syringe (cc)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)	Maximum Rate (µL/min)
B-D	1	4.699	2335	14.59	38.92
	3	8.585	7796	48.68	129.9
	5	11.99	9999	94.95	253.4
	10	14.43	9999	137.6	367
	20	19.05	9999	239.7	639.7
	30	21.59	9999	307.9	821.7
	60	26.59	9999	467	1246
Monoject	1	5.74	3485	21.76	58.08
	3	8.941	8456	52.8	140.9
	6	12.7	9999	106.6	284.3
	12	15.72	9999	163.3	435.6
	20	20.12	9999	267.4	713.6
	35	23.52	9999	365.4	975.2
	60	26.64	9999	468.8	1251
	140	38	9999	953.7	2545
Terumo	1	4.7	2336	14.59	38.94
	3	8.95	8473	52.91	141.2
	5	13	9999	111.7	297.9
	10	15.8	9999	164.9	440.1
	20	20.15	9999	268.2	715.8
	30	23.1	9999	352.5	940.7
	60	29.7	9999	582.6	1555
Air-Tite	10	15.9	9999	167	445.6
	20	20.25	9999	270.9	722.9
	30	22.5	9999	334.4	892.5
	50	29	9999	555.5	1482

  

	Syringe (uL)	Inside Diameter (mm)	Maximum Rate (nL/hr)	Minimum Rate (nL/hr)	Maximum Rate (nL/min)
Hamilton Microliter	0.5	0.103	1122	0.008	18.7
	1	0.146	2254	0.015	37.57
	2	0.206	4488	0.029	74.81
	5	1.3	9999	1.117	2979
	10	0.48	9999	0.153	406.1
SGE	0.5	0.1	1057	0.007	17.62
	1	0.15	2380	0.015	39.66
	500	3.26	9999	7.019	9999

There will be an update coming soon of the flow rates which will include our full line of Air-Tite & SGE glass syringe.

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# Specifications

## 1.1. Mechanical & Electrical

**Advance per micro-step 4.252232 Nanometers**

Syringe sizes:	Up to 60 cc, 140 cc partially filled 140 cc fully filled with long versions
Number of syringes:	
NE-1002X:	1
NE-4002X:	2
Motor type:	Step motor
Motor steps per revolution:	400
Motor gearbox reduction:	25:1
Motor to drive screw ratio:	15/28
Drive screw pitch:	20 revolutions/”
Micro-stepping:	1/16 to 1/2 depending on motor speed
Advance per step:	4.25223214 nm to 34.0178571 nm depending on motor speed
DC connector:	2.1 mm, center positive
Voltage at DC connector:	12V DC at full load
Amperage:	750 mA at full load
Dimensions:	8 3/4” x 5 3/4” x 4 1/2” High (22.86 cm x 14.605 cm x 11.43 cm)
Weight:	3.8 lbs. (1.63 kg)

## 1.2. Operational

Maximum speed:	0.224469144 cm/min
Minimum speed:	8.40896E-05 cm/hr
Maximum pumping rate:	1246 µL/mn with a B-D 60 cc syringe
Minimum pumping rate:	14.59 nL/hr with a B-D 1 cc syringe
Maximum force:	150 lbs. at minimum speed, 18 lbs. at maximum speed
Number of Program Phases:	41
RS-232 pump network:	100 pumps maximum
RS-232 selectable baud rates:	300, 1200, 2400, 9600, 19200
Syringe inside diameter range:	0.100 to 50.00 mm

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