New Era Pump Systems, Inc.

Phone: 631-249-1392
SyringePump.com

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: 3.96190383 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 0.007 nL/hr with a 0.5 µL to 1161 µL/min with a 60 mL syringe. Includes the X Upgrade Smooth Linear/Gradient increasing and decreasing pumping feature.

The NE-1000 Series 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. Worldwide power supplies available. Motor stall detection. Non-volatile memory of all parameters and programming. Upgradeable to the X2 advanced firmware version 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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Clever Pumps, Priced Right!

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www.SyringePump.com
NE-1002X / NE-4002X / NE-4502X Micro-Fluidic Syringe Pumps

Syringe Manufacturer (all names ™)	Syringe (mL)	Inside Diameter (mm)	Minimum Rate (nL/hr)	Maximum Rate (µL/min)
B-D	1	4.699	13.59	36.26
	3	8.585	45.36	121
	5	11.99	88.47	236.1
	10	14.43	128.2	342
	20	19.05	223.4	596.1
	30	21.59	286.9	765.6
	60	26.59	435.1	1161
HSW Norm-Ject	1	4.69	13.54	36.13
	3	9.65	57.31	152.9
	5	12.45	95.39	254.6
	10	15.9	155.6	415.2
	20	20.05	247.4	660.3
	30	22.9	322.7	861.3
	50	29.2	524.7	1400
Monoject	1	5.74	20.28	54.11
	3	8.941	49.2	131.3
	6	12.7	99.25	264.9
	12	15.72	152.1	405.9
	20	20.12	249.2	664.9
	35	23.52	340.5	908.6
	60	26.64	436.8	1165
	140	38	888.6	2371
Terumo	1	4.7	13.6	36.28
	3	8.95	49.3	131.5
	5	13	104	277.6
	10	15.8	153.7	410
	20	20.15	249.9	666.9
	30	23.1	328.4	876.5
	60	29.7	542.8	1448
Poulten & Graf (Glass)	1	6.7	27.63	73.73
	2	8.91	48.86	130.4
	3	9.06	50.51	134.8
	5	11.75	84.96	226.7
	10	14.67	132.5	353.5
	20	19.62	236.9	632.3
	30	22.69	316.9	845.6
	50	26.96	447.3	1193
Steel Syringes	1	9.538	55.99	149.4
	3	9.538	55.99	149.4
	5	12.7	99.25	264.9
	8	9.538	55.99	149.4
	20	19.13	225.2	601.1
	50	28.6	503.4	1343

Syringe (µL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)
SGE (Glass – Gas Tight) 5	0.343	11.59	0.073
10	0.485	23.18	0.145
25	0.728	52.23	0.327
50	1.03	104.5	0.653
100	1.457	209.2	1.307
Hamilton Microliter (Glass) 0.5	0.103	1.045	0.007
1	0.146	2.1	0.014
2	0.206	4.182	0.027
5	0.326	10.47	0.066

SGE Syringe (mL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)
0.25	2.303	8.712	3.264
0.5	3.257	17.42	6.528
1	4.606	34.84	13.06
2.5	7.284	87.15	32.65
5	10.3	174.2	65.29
10	14.57	348.7	130.7
25	23.03	871.2	326.4
50	27.5	1242	465.4
100	34.99	2011	753.4

Specifications

Model	Style	Stall Detection	Number of Syringes	Maximum Syringe Size
NE-1002X	Stand-Alone	Yes	1	60 mL; 140 mL partially filled
NE-502X	OEM	Yes	1	60 mL; 140 mL partially filled

Rate & Volume Units:

Rate Units: nL/hr, µL/hr, nL/min, µL/min

Volume Units: nL, µL

RS-232 Command Modifications from Standard NE-1000 Series

Rate Command:
RAT [C | I] [<float> [NM | UM | NH | UH]]

Volume Target and Set Volume Units Command:
VOL [<float> | { NL | UL }]

NM = nL/min
UM = µL/min
NH = nL/hr
UH = µL/hr
NL = nL
UL = µL

Mechanical

Motor type:	Step motor
Motor steps per revolution:	400
Motor gearbox reduction:	26.832 :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:	3.96190383 nm to 31.69523064 nm depending on motor speed
Dimensions:	8 3/4” x 5 3/4” x 4 1/2” (LxWxH) (Non-OEM versions) (22.86 cm x 14.605 cm x 11.43 cm)
Weight:	3.8 lbs. (1.63 kg)

Electrical

Power supply type:	External wall adapter, power source specific
Power supply output rating:	12V DC @ 1000 mA
Power connector:	2.1 mm, center positive, DC
Voltage at power connector:	12V DC at full load
Amperage:	750 mA at full load

Operational

Accuracy:	Within 1% error
Reproducibility:	Within 0.1% error
Maximum force:	150 lbs. at minimum speed, 28 lbs. at maximum speed
Syringe inside diameter range:	0.100 to 50.00 mm
Maximum speed:	0.209143135 cm/min
Minimum speed:	7.83482E-05 cm/hr
Maximum pumping rate:	1161 µL/min with a B-D 60 mL syringe
Minimum pumping rate:	13.59 nL/hr with a B-D 1 mL syringe
Number of Program Phases:	41
RS-232 pump network:	100 pumps maximum
RS-232 selectable baud rates:	300, 1200, 2400, 9600, 19200