New Era Pump Systems Inc.

www.SyringePump.com

NE-1002X / NE-502X Micro-Fluidic Syringe Pumps

Syringe Manufacturer (all names ™)	Syringe (mL)	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
HSW Norm-Ject	1	4.69	2326	14.53	38.77
	3	9.65	9850	61.51	164.1
	5	12.45	9999	102.4	273.2
	10	15.9	9999	167	445.6
	20	20.05	9999	265.5	708.7
	30	22.9	9999	346.4	924.5
	50	29.2	9999	563.2	1503
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**	**954**	**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**	**583**	**1555**
Poulten &Graf (Glass)	1	6.7	4748	29.65	79.14
	2	8.91	8397	52.44	139.9
	3	9.06	8682	54.22	144.7
	5	11.75	9999	91.19	243.4
	10	14.67	9999	142.2	379.4
	20	19.62	9999	254.3	678.6
	30	22.69	9999	340.1	907.6
	50	26.96	9999	480.1	1281
Steel Syringes	1	9.538	9623	60.09	160.3
	3	9.538	9623	60.09	160.3
	5	12.7	9999	106.6	284.3
	8	9.538	9623	60.09	160.3
	20	19.13	9999	241.7	645.1
	50	28.6	9999	540.3	1442

	Syringe (µL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)	SGE Syringe (mL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)
SGE (Glass – Gas Tight)	5	0.343	12.44	0.078	0.25	2.303	561	3.503
	10	0.485	24.88	0.156	0.5	3.257	1122	7.006
	25	0.728	56.06	0.351	1	4.606	2244	14.02
	50	1.03	112.2	0.701	2.5	7.284	5612	35.05
	100	1.457	224.5	1.403	5	10.3	9999	70.07
Hamilton Microliter (Glass)	0.5	0.103	1.122	0.008	10	14.57	9999	140.3
	1	0.146	2.254	0.015	25	23.03	9999	350.3
	2	0.206	4.488	0.029	50	27.5	9999	499.5
	5	0.326	11.24	0.071	100	34.99	9999	808.6

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:	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 to34.0178571 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, 18 lbs. at maximum speed
Syringe inside diameter range:	0.100 to 50.00 mm
Maximum speed:	0.224469144 cm/min
Minimum speed:	8.40896E-05 cm/hr
Maximum pumping rate:	1246 µL/min with a B-D 60 mL syringe
Minimum pumping rate:	14.59 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