



New Era Pump Systems Inc.
www.SyringePump.com
 NE-4002X / NE-4502X Micro-Fluidic Syringe Pumps
 Version H1.00

Syringe Manufacturer (all names TM)	Syringe (mL)	Inside Diameter (mm)	Maximum Rate (µL/hr)	Minimum Rate (nL/hr)	Maximum Rate (µL/min)				
B-D	1	4.699	2141	13.38	35.69				
	3	8.585	7149	44.64	119.1				
	5	11.99	9999	87.07	232.4				
	10	14.43	9999	126.2	336.6				
	20	19.05	9999	219.8	586.7				
	30	21.59	9999	282.4	753.6				
	60	26.59	9999	428.3	1143				
HSW Norm-Ject	1	4.69	2133	13.33	35.56				
	3	9.65	9033	56.41	150.5				
	5	12.45	9999	93.88	250.5				
	10	15.9	9999	153.2	408.7				
	20	20.05	9999	243.5	649.9				
	30	22.9	9999	317.7	847.8				
	50	29.2	9999	516.5	1378				
Monoject	1	5.74	3196	19.96	53.26				
	3	8.941	7754	48.42	129.2				
	6	12.7	9999	97.69	260.7				
	12	15.72	9999	149.7	399.5				
	20	20.12	9999	245.2	654.4				
	35	23.52	9999	335.1	894.3				
	60	26.64	9999	429.9	1147				
Terumo	1	4.7	2142	13.38	35.71				
	3	8.95	7770	48.52	129.5				
	5	13	9999	102.4	273.2				
	10	15.8	9999	151.2	403.6				
	20	20.15	9999	246	656.4				
	30	23.1	9999	323.2	862.7				
	60	29.7	9999	534.3	1426				
Poulten & Graf (Glass)	1	6.7	4354	27.19	72.57				
	2	8.91	7700	48.09	128.3				
	3	9.06	7962	49.72	132.7				
	5	11.75	9999	83.62	223.2				
	10	14.67	9999	130.4	347.9				
	20	19.62	9999	233.2	622.3				
	30	22.69	9999	311.9	832.3				
Steel Syringes	1	9.538	8824	55.1	147				
	3	9.538	8824	55.1	147				
	5	12.7	9999	97.69	260.7				
	8	9.538	8824	55.1	147				
	20	19.13	9999	221.7	591.6				
	50	28.6	9999	495.5	1322				
	SGE (Glass – Gas Tight)	5	0.343	11.41	0.072	0.25	1.03	8.574	3.213
10		0.485	22.81	0.143	0.5	3.257	17.15	6.425	
25		0.728	51.41	0.321	1	4.606	34.29	12.85	
50		1.03	102.9	0.643	2.5	7.284	85.77	32.14	
100		1.457	205.9	1.286	5	10.3	171.5	64.26	
Hamilton Microliter (Glass)	0.5	0.103	1.029	0.007	10	14.57	343.2	128.6	
	1	0.1457	2.067	0.013	25	23.03	857.4	321.3	
	2	0.206	4.116	0.026	50	27.5	1222	458.1	
	5	0.3257	10.3	0.065	100	34.99	1979	741.6	

Specifications

<u>Model</u>	<u>Style</u>	<u>Stall Detection</u>	<u>Number of Syringes</u>	<u>Maximum Syringe Size</u>
NE-4002X	Stand-Alone	Yes	2	60 mL; 140 mL partially filled
NE-4502X	OEM	Yes	2	60 mL; 140 mL partially filled

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:	20.32 revolutions/”
Micro-stepping:	1/16 to 1/2 depending on motor speed
Advance per step: speed	3.899511644 nm to 31.19609315 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:	0.205849543 cm/min
Minimum speed:	7.71144E-05 cm/hr
Maximum pumping rate:	1143 µL/min with a B-D 60 mL syringe
Minimum pumping rate:	13.38 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