

HARVARD社製シリンジ/チューブポンプ流速範囲一覧表

Model		11Elite		11Plus		11Elite Pico Plus		Elite/ULTRA Nanomite	
シリンジ容量	内径mm	最少	最大	最少 μ l/min	最大ml/min	最少	最大	最少	最大
0.5 μ l	0.103	1.26pl/min	13.26 μ l/min	0.0001	0.0003	0.54pl/min	596.5nl/min	3.66pl/min	1.908 μ l/min
1 μ l	0.146	2.52pl/min	2.654 μ l/min	0.0001	0.0008	1.14pl/min	1.194 μ l/min	7.32pl/min	38.19 μ l/min
2 μ l	0.206	5.10pl/min	5.304 μ l/min	0.0002	0.0016	2.28pl/min	2.386 μ l/min	14.70pl/min	7.635 μ l/min
5 μ l	0.343	14.160pl/min	14.710 μ l/min	0.0003	0.004	6.36pl/min	6.615 μ l/min	40.74pl/min	21.17 μ l/min
10 μ l	0.485	28.260pl/min	29.400 μ l/min	0.0005	0.0078	12.72pl/min	13.230 μ l/min	81.48pl/min	42.32 μ l/min
25 μ l	0.729	63.960pl/min	66.430 μ l/min	0.0013	0.0198	28.74pl/min	29.880 μ l/min	184.1pl/min	95.62 μ l/min
50 μ l	1.03	127.700pl/min	132.600 μ l/min	0.0025	0.0395	57.42pl/min	59.650 μ l/min	367.6pl/min	190.9 μ l/min
100 μ l	1.457	255.500pl/min	265.400 μ l/min	0.0049	0.0794	114.9pl/min	119.4 μ l/min	735.6pl/min	381.9 μ l/min
250 μ l	2.304	638.900pl/min	663500 μ l/min	0.0121	0.197	287.4pl/min	298.5 μ l/min	1.839nl/min	955.1 μ l/min
500 μ l	3.256	1.276nl/min	1.325ml/min	0.0242	0.3959	574.0pl/min	596.1 μ l/min	3.677nl/min	1.907ml/min
1000 μ l	4.608	2.556nl/min	2.654ml/min	-	-	1.150nl/min	1.194ml/min	7.358nl/min	3.820ml/min
1ml	4.699	2.658nl/min	2.760ml/min	0.0484	0.7918	1.196nl/min	1.241ml/min	-	-
2.5mm	7.28-9.6	-	-	0.1206	1.974	-	-	-	-
3ml	8.585	8.871nl/min	9.213ml/min	0.1706	2.794	39.98nl/min	4.141ml/min	-	-
5ml	11.99	17.300nl/min	17.970ml/min	0.2413	3.952	7.778nl/min	8.082ml/min	-	-
10ml	14.43	25.050nl/min	26.020ml/min	0.4828	7.909	11.270nl/min	11.700ml/min	-	-
20ml	19.05	43.680nl/min	45.360ml/min	0.9142	14.97	-	-	-	-
30ml	21.59	56.110nl/min	58.270ml/min	1.214	19.88	-	-	-	-
50ml	26.59	85.130nl/min	88.400ml/min	1.622	26.56	-	-	-	-

Model		33		PHD 2000/4400		PHD ULTRA		PHD ULTRA 4400	
シリンジ容量	内径mm	最少	最大	最少	最大	最少	最大	最少	最大
0.5 μ l	0.103	0.0004 μ l/hr	0.79 μ l/min	0.0001 μ l/hr	95.330 μ l/hr	1.500pl/min	1.59133 μ l/min	3.0600pl/min	1.59133 μ l/min
1 μ l	0.1457	0.0008 μ l/hr	1.58 μ l/min	0.0002 μ l/hr	190.70 μ l/hr	3.060pl/min	3.18423 μ l/min	6.1200pl/min	3.18423 μ l/min
2 μ l	0.206	0.0015 μ l/hr	3.1 μ l/min	0.0004 μ l/hr	381.30 μ l/hr	6.120pl/min	6.3532 μ l/min	12.240pl/min	6.3532 μ l/min
5 μ l	0.343	0.0037 μ l/hr	7.93 μ l/min	0.0010 μ l/hr	953.17 μ l/hr	16.980pl/min	17.6471 μ l/min	33.960pl/min	17.6471 μ l/min
10 μ l	0.485	0.0073 μ l/hr	15.829 μ l/min	0.0019 μ l/hr	1.901ml/hr	33.960pl/min	35.2833 μ l/min	67.920pl/min	35.2833 μ l/min
25 μ l	0.729	0.0183 μ l/hr	39.756 μ l/min	0.0046 μ l/hr	4.775ml/hr	76.740pl/min	79.7151 μ l/min	153.480pl/min	79.7151 μ l/min
50 μ l	1.03	0.0365 μ l/hr	79.519 μ l/min	0.0092 μ l/hr	9.551ml/hr	153.180pl/min	159.133 μ l/min	306.420pl/min	159.133 μ l/min
100 μ l	1.457	0.0731 μ l/hr	159.46 μ l/min	0.0183 μ l/hr	19.153ml/hr	306.600pl/min	318.423 μ l/min	613.200pl/min	318.423 μ l/min
250 μ l	2.304	0.1813 μ l/hr	23.751ml/hr	0.0454 μ l/hr	47.532ml/hr	766.740pl/min	796.252 μ l/min	1.53348nl/min	796.252 μ l/min
500 μ l	3.256	-	-	0.0911 μ l/hr	95.492ml/hr	1.53126nl/min	1.59021ml/min	3.06258nl/min	1.59021ml/min
1000 μ l	4.608	0.7281 μ l/hr	95.418ml/hr	0.0031 μ l/min	190.950ml/hr	-	-	-	-
1ml	5	0.7828 μ l/hr	102.58ml/hr	0.0033 μ l/min	205.30ml/hr	-	-	-	-
1ml	4.699	-	-	-	-	3.18936nl/min	3.31205ml/min	6.37872nl/min	3.31205ml/min
2ml	9	2.8493 μ l/hr	373.43ml/hr	0.0119 μ l/min	747.35ml/hr	-	-	-	-
2.5ml	7.28-9.6	1.8156 μ l/hr	237.95ml/hr	0.0076 μ l/min	476.21ml/hr	-	-	-	-
2.5ml	4.851	-	-	-	-	3.3990nl/min	3.52979ml/min	6.79806nl/min	3.52979ml/min
3ml	8.585	2.5691 μ l/hr	336.71ml/hr	0.0100 μ l/min	11.231ml/min	10.645nl/min	11.0552ml/min	21.915nl/min	11.0552ml/min
5ml	11.989	4.9824 μ l/hr	653.01ml/hr	0.0208 μ l/min	21.781ml/min	20.7616nl/min	21.5601ml/min	41.5232nl/min	21.5601ml/min
8ml	9.525	-	-	-	-	13.1046nl/min	13.6087ml/min	26.2093nl/min	13.6087ml/min
10ml	14.427	7.2024 μ l/hr	15.733ml/min	0.0301 μ l/min	31.486ml/min	30.0640nl/min	31.2204ml/min	60.1280nl/min	31.2204ml/min
20ml	19.05	12.536 μ l/hr	27.384ml/min	0.0523 μ l/min	54.804ml/min	52.4186nl/min	54.4347ml/min	104.837nl/min	54.4347ml/min
30ml	21.59	16.131 μ l/hr	35.236ml/min	0.0673 μ l/min	70.518ml/min	67.3288nl/min	69.9183ml/min	134.658nl/min	69.9183ml/min
50ml	26.594	24.420 μ l/hr	53.346ml/min	0.1019 μ l/min	106.76ml/min	102.156nl/min	106.085ml/min	204.311nl/min	106.085ml/min
100ml	35.7	0.087 μ l/min	91.20ml/min	0.1740 μ l/min	182.40ml/min	184.091nl/min	191.171ml/min	351.865nl/min	182.699ml/min
140ml	37.948	0.1053 μ l/min	106.6ml/min	0.2106 μ l/min	220.82ml/min	208.005nl/min	216.005ml/min	416.009nl/min	216.005ml/min

Model		PHD 2000 Hpsi		PHD ULTRA Hpsi シリーズ	
シリンジ容量ml	内径mm	最少 μ l/hr	最大ml/min	最少nl/min	最大ml/min
20	19.13	1.5	20	50.788	26.37
50	28.6	3.4	46	113.519	58.942
100	34.9	5	68	169.038	87.77
200	44.75	8.2	112	277.983	144.337

Model			Model			Model		
チューブ内径mm	P-70 最少nl/min	最大ml/min	チューブ内径mm	P-230 最少nl/min	最大ml/min	チューブ内径mm	P-1500 最少 μ l/min	最大ml/min
0.13	0.525	0.166	0.13	1.35	0.521	0.7	0.022	11.75
0.19	1.121	0.356	0.19	2.88	1.112	0.8	0.028	15.34
0.25	1.942	0.616	0.25	4.99	1.926	1.6	0.113	61.37
0.38	4.487	1.425	0.38	11.5	4.451	3.2	0.454	245.4
0.5	7.769	2.467	0.44	15.4	5.967	4	0.71	383.5
0.63	12.33	3.918	0.51	20.7	8.017	4.8	1.022	552.3
0.76	17.95	5.701	0.57	25.9	10.01	6.4	1.818	981.9
0.88	24.06	7.644	0.64	37.7	12.62	8	2.841	1,534.36
1.02	32.33	10.27	0.76	46.1	17.08	9	3.596	1,941.92
1.14	40.38	12.82	0.89	63.3	24.41			
1.29	57.71	16.42	0.95	72.1	27.81			
1.42	62.66	19.9	1.02	83.1	32.06			
1.52	71.8	22.8	1.09	94.9	36.62			
1.65	84.6	26.87	1.14	103.8	40.05			
1.85	106.3	33.78	1.22	118.9	45.87			
2.05	130.6	41.48	1.3	135	52.09			
2.38	176	55.91	1.42	161.1	62.15			
2.54	200.5	63.68	1.52	184.6	71.21			
2.79	241.9	76.84	1.65	217.5	83.91			
			1.75	244.7	94.39			
			1.85	273.5	105.4			
			2.06	339.1	130.8			
			2.29	419	161.6			
			2.54	515.5	198.8			
			2.79	622	239.9			
			3.17	803	309.7			

P-70、230、1500は共通ドライブユニットで
 最少回転数は 0.000694 RPM
 最大回転数は 220 RPM