Iteration Time Benchmark

batch 16

1 slice

	1 probe	3 probes	6 probes	12 probes
ptyrad	**6.26 ± 0.4**	**6.47 ± 0.5**	**7.57 ± 0.3**	**10 ± 0.3**
ptyshv	6.87 ± 0.4	11.8 ± 0.7	19.2 ± 0.9	34.2 ± 2
py4dstem	7.02 ± 0.3	14.6 ± 0.9	25.8 ± 1	49.1 ± 2

3 slices

	1 probe	3 probes	6 probes	12 probes
ptyrad	**8.5 ± 0.5**	**9.41 ± 0.5**	**11.9 ± 0.3**	**16.5 ± 0.4**
ptyshv	12 ± 0.6	25 ± 1	45.5 ± 2	85 ± 3
py4dstem	16.6 ± 0.8	39.2 ± 2	73.3 ± 3	142 ± 5

6 slices

	1 probe	3 probes	6 probes	12 probes
ptyrad	**13.5 ± 0.4**	**15.1 ± 0.5**	**19.5 ± 0.3**	**27.1 ± 0.3**
ptyshv	20.5 ± 1	49.2 ± 2	90.1 ± 5	182 ± 7
py4dstem	31 ± 2	74.2 ± 3	144 ± 7	283 ± 8

batch 32

	1 probe	3 probes	6 probes	12 probes
ptyrad	**3.41 ± 0.2**	**4.19 ± 0.1**	**5.53 ± 0.2**	**8.02 ± 0.2**
ptyshv	3.75 ± 0.2	6.35 ± 0.4	10.2 ± 0.5	18.2 ± 0.8
py4dstem	3.6 ± 0.2	7.37 ± 0.4	13.3 ± 0.5	25.4 ± 1

	1 probe	3 probes	6 probes	12 probes
ptyrad	**5.63 ± 0.2**	**7.29 ± 0.2**	**9.58 ± 0.2**	**14.1 ± 0.2**
ptyshv	6.16 ± 0.4	13.1 ± 0.6	23 ± 1	43.7 ± 2
py4dstem	8.37 ± 0.5	20 ± 1	37.6 ± 2	73.5 ± 3

	1 probe	3 probes	6 probes	12 probes
ptyrad	**9.94 ± 0.2**	**12.8 ± 0.2**	**16.7 ± 0.2**	**24.1 ± 0.2**
ptyshv	10.8 ± 0.6	25.4 ± 1	46 ± 2	90.2 ± 4
py4dstem	15.5 ± 0.8	38.7 ± 1	73.3 ± 3	147 ± 5

batch 64

	1 probe	3 probes	6 probes	12 probes
ptyrad	2.33 ± 0.09	**3.31 ± 0.2**	**4.55 ± 0.09**	**7.15 ± 0.08**
ptyshv	2.23 ± 0.2	3.76 ± 0.2	6.02 ± 0.4	10.1 ± 0.8
py4dstem	**1.84 ± 0.07**	3.92 ± 0.2	7.22 ± 0.3	13.8 ± 0.6

	1 probe	3 probes	6 probes	12 probes
ptyrad	4.52 ± 0.08	**6.18 ± 0.1**	**8.48 ± 0.1**	**13.2 ± 0.1**
ptyshv	**3.6 ± 0.2**	7.48 ± 0.3	13.2 ± 0.8	24.6 ± 1
py4dstem	4.24 ± 0.1	10.5 ± 0.4	20.3 ± 0.8	39.7 ± 2

	1 probe	3 probes	6 probes	12 probes
ptyrad	8.72 ± 0.08	**11.5 ± 0.08**	**15.3 ± 0.1**	**23 ± 0.1**
ptyshv	**6.11 ± 0.2**	13.9 ± 0.8	25.7 ± 1	49.6 ± 2
py4dstem	7.91 ± 0.3	20.3 ± 0.8	39.7 ± 2	78.9 ± 4

batch 128

	1 probe	3 probes	6 probes	12 probes
ptyrad	1.94 ± 0.05	2.82 ± 0.06	4.07 ± 0.03	**6.65 ± 0.05**
ptyshv	1.6 ± 0.05	2.65 ± 0.09	**4 ± 0.08**	6.72 ± 0.2
py4dstem	**1.15 ± 0.05**	**2.36 ± 0.08**	4.28 ± 0.1	8.18 ± 0.2

	1 probe	3 probes	6 probes	12 probes
ptyrad	4.06 ± 0.06	5.59 ± 0.06	**7.91 ± 0.03**	**12.5 ± 0.07**
ptyshv	2.62 ± 0.02	**5.51 ± 0.2**	9.51 ± 0.3	17.5 ± 0.8
py4dstem	**2.54 ± 0.1**	6.3 ± 0.2	12.1 ± 0.4	23.4 ± 0.7

	1 probe	3 probes	6 probes	12 probes
ptyrad	8.13 ± 0.08	10.7 ± 0.05	**14.6 ± 0.05**	**22.1 ± 0.06**
ptyshv	**4.39 ± 0.05**	**9.95 ± 0.2**	18.7 ± 0.3	34.9 ± 1
py4dstem	4.59 ± 0.2	12 ± 0.4	23.5 ± 0.8	46.2 ± 2

batch 256

	1 probe	3 probes	6 probes	12 probes
ptyrad	1.67 ± 0.03	2.56 ± 0.02	3.84 ± 0.03	6.4 ± 0.04
ptyshv	1.33 ± 0.06	2 ± 0.07	2.98 ± 0.1	**4.85 ± 0.2**
py4dstem	**0.852 ± 0.03**	**1.7 ± 0.05**	**2.97 ± 0.09**	5.51 ± 0.2

	1 probe	3 probes	6 probes	12 probes
ptyrad	3.73 ± 0.02	5.31 ± 0.03	7.6 ± 0.04	**12.2 ± 0.02**
ptyshv	2.15 ± 0.07	**4.17 ± 0.1**	**7.2 ± 0.3**	13.4 ± 0.2
py4dstem	**1.77 ± 0.03**	4.33 ± 0.1	8.11 ± 0.2	15.6 ± 0.4

	1 probe	3 probes	6 probes	12 probes
ptyrad	7.66 ± 0.03	10.3 ± 0.03	14.1 ± 0.04	**21.7 ± 0.06**
ptyshv	3.41 ± 0.1	**7.54 ± 0.2**	**13.9 ± 0.4**	26.5 ± 0.3
py4dstem	**3.11 ± 0.08**	8.23 ± 0.3	15.7 ± 0.4	30.7 ± 1

batch 512

	1 probe	3 probes	6 probes	12 probes
ptyrad	1.56 ± 0.01	2.43 ± 0.01	3.71 ± 0.01	6.26 ± 0.01
ptyshv	1.22 ± 0.03	1.81 ± 0.04	2.61 ± 0.09	**4.26 ± 0.2**
py4dstem	**0.813 ± 0.05**	**1.46 ± 0.06**	**2.43 ± 0.05**	4.43 ± 0.1

	1 probe	3 probes	6 probes	12 probes
ptyrad	3.58 ± 0.02	5.15 ± 0.02	7.43 ± 0.02	12 ± 0.02
ptyshv	2.01 ± 0.06	3.86 ± 0.09	6.52 ± 0.2	**11.8 ± 0.2**
py4dstem	**1.58 ± 0.06**	**3.58 ± 0.1**	**6.49 ± 0.1**	12.5 ± 0.3

	1 probe	3 probes	6 probes	12 probes
ptyrad	7.47 ± 0.01	10.1 ± 0.02	13.9 ± 0.02	**21.4 ± 0.01**
ptyshv	3.15 ± 0.09	6.86 ± 0.08	**12.3 ± 0.2**	23.5 ± 0.4
py4dstem	**2.66 ± 0.08**	**6.58 ± 0.1**	12.5 ± 0.3	24.4 ± 0.6

batch 1024

	1 probe	3 probes	6 probes	12 probes
ptyrad	1.56 ± 0.1	2.37 ± 0.006	3.65 ± 0.01	6.2 ± 0.008
ptyshv	1.24 ± 0.1	1.66 ± 0.05	2.39 ± 0.1	**3.8 ± 0.2**
py4dstem	**0.773 ± 0.07**	**1.35 ± 0.03**	**2.28 ± 0.03**	4.07 ± 0.07

	1 probe	3 probes	6 probes	12 probes
ptyrad	3.51 ± 0.01	5.07 ± 0.009	7.36 ± 0.01	11.9 ± 0.009
ptyshv	1.87 ± 0.04	3.55 ± 0.08	**6 ± 0.1**	**11 ± 0.3**
py4dstem	**1.44 ± 0.03**	**3.27 ± 0.04**	6.01 ± 0.07	OOM

	1 probe	3 probes	6 probes	12 probes
ptyrad	7.46 ± 0.2	9.97 ± 0.007	13.8 ± 0.02	OOM
ptyshv	2.88 ± 0.07	6.3 ± 0.09	**11.5 ± 0.2**	OOM
py4dstem	**2.44 ± 0.02**	**6.11 ± 0.07**	11.6 ± 0.1	OOM