

Supplementary Tables

	Firing position	a_{accel} (mm/s ²)	a_{decel} (mm/s ²)	v_{max} (mm/s)
Condition 1	high fire (2 cam)	5,000	20,000	1,000
Condition 2	high fire (2 cam)	10,000	20,000	1,000
Condition 3	high fire (2 cam)	20,000	20,000	1,000
Condition 4	low fire (1 cam)	10,000	20,000	1,000

Supplementary Table 1: Motion profile settings for four example plunge conditions

	t_0 to $t_{\text{disp-1}}$ (ms)	t_0 to $t_{\text{disp-2}}$ (ms)	t_0 to t_{mix} (ms)	$t_{\text{disp-1}}$ to t_e (ms)	t_{mix} to t_e (ms)
Condition 1	85	96	102	176	159
Condition 2	60	68	72	151	139
Condition 3	42	48	51	144	135
Condition 4	114	119	122	97	89

Supplementary Table 2: Elapsed times for key portions of the plunge path

	$v_{\text{disp-1}}$ (mm/s)	$v_{\text{samp-1}}$ (mm/s)	$v_{\text{disp-2}}$ (mm/s)	v_{mix} (mm/s)
Condition 1	424	458	479	509
Condition 2	600	648	678	721
Condition 3	849	917	960	1000*
Condition 4	1000*	1000*	1000*	1000*

Supplementary Table 3: Grid velocities at specified time points of the plunge path

	$t_{\text{disp-1}}$ (ms)	$t_{\text{samp-1}}$ (ms)	$t_{\text{disp-2}}$ (ms)	t_{mix} (ms)
Condition 1	0	6.8	11.1	17.1
Condition 2	0	4.8	7.8	12.1
Condition 3	0	3.4	5.5	8.6
Condition 4	0	3.0	5.0	8.0

Supplementary Table 4: Elapsed times from $t_{\text{disp-1}}$ timepoint