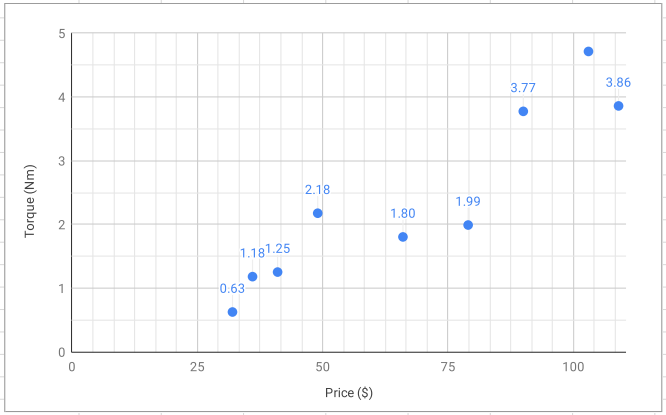
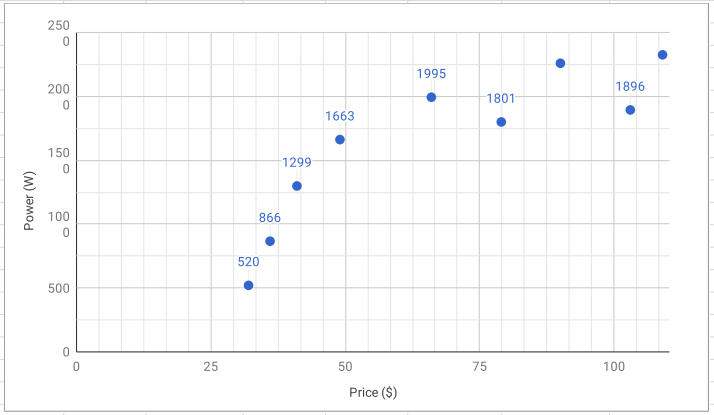
Copy this spreadsheet to customize your analysis!	Speed Constant (Kv)	Max Current*	Max voltage	Phase Resistance	Price (qty 1pc)	Mass	Link	Torque	No-load speed		Power at base speed	Motor size constant (Km)	Force	Linear Velocity	Linear Acceleration	Time to base speed	Distance to base speed	Base speed kinetic energy	Encoder freq. (base speed)
(feilds highlighted in blue are inputs)	rpm/V	A	V	mOhm	USD	g		Nm	RPM	Rad/s	W	Nm/sqrt(W)	N	m/s	m/s^2	ms	mm	J	kHz
ODrive Robotics D5065 - 270kv	**270**	**65**	**32**	**39**	**79**	**420**	**https://odriv**	**1.99**	**8640**	**904.78**	**1801**	**0.13**	**208.49**	**8.64**	**69.57**	**124.18**	**536.47**	**70.92**	**294.91**
ODrive Robotics D6374 - 150kv	**150**	**70**	**48**	**39**	**109**	**890**	**https://odriv**	**3.86**	**5760**	**603.19**	**2328**	**0.23**	**404.15**	**5.76**	**134.87**	**42.71**	**123.00**	**31.52**	**196.61**
ODrive Robotics D5312 - 330kv	330	50	30		41	230	https://odrive	1.25	9900	1,036.73	1299		131.22	9.90	43.79	226.09	1,119.14	93.11	337.92
ODrive Robotics M8325s - 100kv	100	60	60	44		841		4.96	3840	402.12	1995	0.32							
Tarot 4008 330kv	330	25	24		32	80	https://www.a	0.63	7920	829.38	520		65.61	7.92	21.89	361.74	1,432.50	59.59	270.34
Turnigy Aerodrive SK3 - 4250-350kv	350	50	20		36	266	https://hobby	1.18	7000	733.04	866		123.72	7.00	41.29	169.55	593.42	46.55	238.93
Turnigy Aerodrive SK3 - 5065-275kv	275	60	40		66	530	https://hobby	1.80	10560	1,105.84	1995		188.95	10.56	63.05	167.47	884.26	105.94	360.45
KEDA 63-64 190KV	190	50	40		49	670	https://hobby	2.18	7296	764.04	1663		227.90	7.30	76.05	95.93	349.97	50.57	249.04
Turnigy Aerodrive SK3 - 6374-149kv	149	68	48		90	840	https://hobby	3.77	5722	599.16	2261		395.23	5.72	131.89	43.38	124.10	31.10	195.30
9235-100KV Turnigy Multistar	100	57	48		103	674	https://hobby	4.71	3840	402.12	1896		493.63	3.84	164.73	23.31	44.76	14.01	131.07
Hoverboard Hub-motor	16	25 [1]	48		40	a lot	https://www.e	12.92	614	64.34	831		1,353.16	0.61	451.56	1.36	0.42	0.36	20.97

***Note that torque and current ratings are with Extremely good forced air cooling**

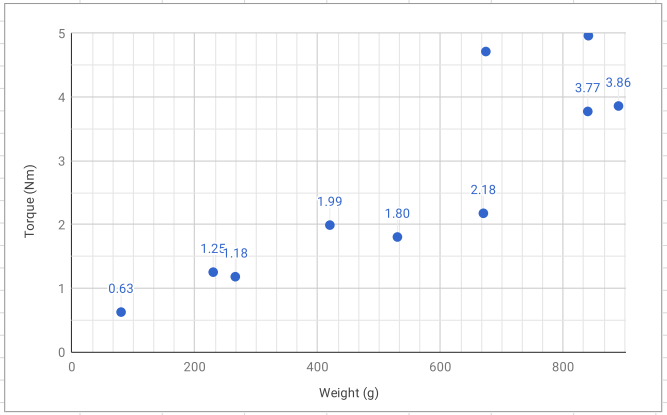
See Torque derating curve

Parameter	Value	
Bus voltage	48	V
Max modulation	0.8	
Load mass	1.9	kg
Rotor inertia [2]	1.00E-04	kg m^2
Pulley circumference or screw pitch	60	mm/rev
Radius	0.00954929	m/rad
Reflected inertia	1.10	kg
Peak brake power	1200	W
Brake resistor resistance	1.92	ohm
Conversion constants		
I by kv to Nm	8.269933431	
Encoder		
Encoder resolution	2048	ppr
Linear resolution	7.32	um
Max speed	15000	RPM





There are more tabs!



[1] Assuming improved cooling mod

[2] Note: We should measure inertia of each individual motor. This is an estimate of 5065 size motors.