

VECTOR TECHNICS

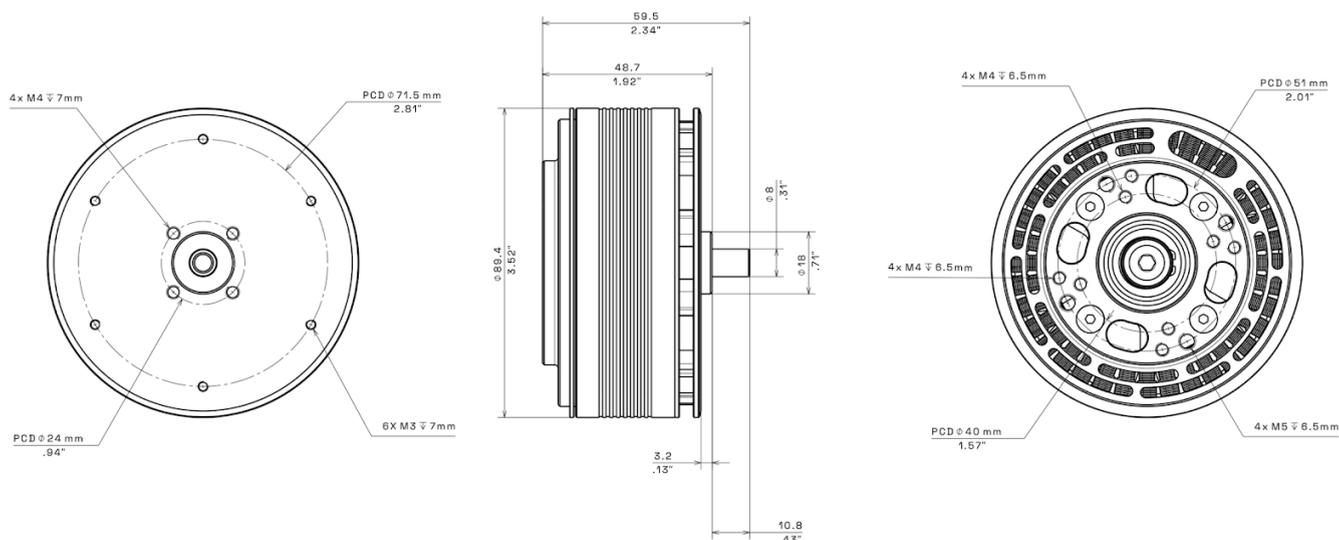
8020 PRO

120 KV

MOTOR SPECIFICATIONS

Kv (Motor Velocity Constant)	120 RPM/V
Kt (Motor Torque Constant)	0.108 Nm/A @ 3200 RPM
Maximum Continuous Current*	54A (180s)
Maximum Continuous Power*	2954W (180s)
Power Density	3.66 W/g [Rated], 5.03 W/g [Maximum]
Voltage Range	44V - 50V [12S LiPo]
I _o (48@V)	3A (48@V)
Inductance per phase (Winding Inductance)	0.038 [≈0.03] mH
R _{ph} (Wind Resistance per phase)	0.06 [≈0.03] Ω
Stator Poles	36S
Magnetic Poles	42P
Bearings	Dual 6001/2RSL Sealed
Stick Out Shaft Diameter	∅ 10.8 mm
Motor Diameter	∅ 89.4 mm
Motor Length	48.7 mm
Motor Weight	750 g ± 5 g
Mount Pattern @ 90 deg	8 X M4 @ PCD ∅ 40 mm , 51 mm, 4 X M5 @ PCD ∅ 51 mm with ↓ 6.5 mm
Compatible Propeller Size	28 " inch to 30 " inch
Propeller Mount Pattern	6 X M3 @ PCD ∅ 71.5 mm ↓ 7 mm, 4 X M4 @ PCD ∅ 24 mm ↓ 7 mm

2D CAD



Note: Specifications and drawings may be revised without notice. Vector Technics assumes no liability for reliance on unverified data.
All Dimensions in millimeters [mm]

8020 PRO 120 KV - TEST DATA

Note: The test data provided below is subject to environmental and testing conditions, including but not limited to temperature, humidity, altitude, and the equipment used. Results may vary depending on specific testing parameters and conditions.

Propeller	TM 28 x 9.2 CF_FX			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	37 ° C		
Test Date:	22-03-2024	Humidity:	33 %	Cross-winds:	Mild		

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.9	1.9	1449	1108	0.37	94.8	11.7	59 ° C [@70% 10 min Constant]
1400 - 40	49.8	4.4	2018	2244	0.74	219.1	10.2	
1500 - 50	49.5	8.8	2633	3882	1.23	435.6	8.9	
1600 - 60	49.2	14.9	3148	5554	1.79	733.1	7.6	
1700 - 70	48.8	22.7	3613	7347	2.39	1107.8	6.6	
1800 - 80	48.3	33.9	4087	9643	3.12	1637.4	5.9	63 ° C [Maximum]
1900 - 90	47.7	45.7	4500	11741	3.76	2179.9	5.4	
1950 - 95	47.4	50.8	4640	12625	4.05	2407.9	5.2	
2000 - 100	47.4	50.7	4640	12534	4.05	2403.2	5.2	

Propeller	TM 29 x 9.5 CF_FX			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	37 ° C		
Test Date:	29-03-2024	Humidity:	29 %	Cross-winds:	Mild		

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.9	3.4	1425	1231	0.44	169.7	7.3	63 ° C [@70% 10 min Constant]
1400 - 40	49.7	6.2	1991	2477	0.86	308.1	8.0	
1500 - 50	49.5	11.3	2587	4305	1.45	559.4	7.7	
1600 - 60	49.1	18.4	3094	6231	2.09	903.4	6.9	
1700 - 70	48.7	26.9	3526	8178	2.72	1310.0	6.2	
1800 - 80	48.1	38.8	3986	10423	3.48	1866.3	5.6	69 ° C [Maximum]
1900 - 90	47.4	52.1	4372	12567	4.22	2469.5	5.1	
1950 - 95	47.2	57.5	4506	13426	4.51	2714.0	4.9	
2000 - 100	47.2	57.6	4502	13467	4.52	2718.7	5.0	

Propeller	TM 30 x 10.5 CF_FX			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	37 ° C		
Test Date:	29-03-2024	Humidity:	29 %	Cross-winds:	Mild		

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.8	2.3	1379	1497	0.53	114.5	13.1	70 ° C [@70% 10 min Constant]
1400 - 40	49.6	5.6	1947	2967	1.06	277.8	10.7	
1500 - 50	49.3	11.8	2519	5026	1.75	581.7	8.6	
1600 - 60	48.9	20.3	2997	7199	2.53	992.7	7.3	
1700 - 70	48.4	30.6	3383	9381	3.33	1481.0	6.3	
1800 - 80	47.7	43.9	3779	11759	4.14	2094.0	5.6	74 ° C [Maximum]
1900 - 90	47	59.6	4125	14106	4.94	2801.2	5.0	
1950 - 95	46.7	65.7	4246	14941	5.23	3068.2	4.9	
2000 - 100	46.7	65.6	4247	14909	5.22	3063.5	4.9	

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8020 PRO 120 KV - TEST DATA

Note: The test data provided below is subject to environmental and testing conditions, including but not limited to temperature, humidity, altitude, and the equipment used. Results may vary depending on specific testing parameters and conditions.

Propeller	MZ 30 x 10 CF_FX			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	37 ° C		
Test Date:	29-03-2024	Humidity:	29 %	Cross-winds: Mild			

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.8	2.3	1374	1509	0.54	114.5	13.2	75 ° C [@70% 10 min Constant]
1400 - 40	49.6	5.8	1938	3063	1.08	287.7	10.6	
1500 - 50	49.3	12.2	2501	5134	1.81	601.5	8.5	
1600 - 60	48.8	21.3	2962	7494	2.65	1039.4	7.2	
1700 - 70	48.3	31.7	3354	9455	3.42	1531.1	6.2	
1800 - 80	47.6	45.3	3734	11685	4.3	2156.3	5.4	81 ° C [Maximum]
1900 - 90	46.8	61.6	4060	13970	5.14	2882.9	4.8	
1950 - 95	46.5	68.2	4171	14893	5.46	3171.3	4.7	
2000 - 100	46.5	68.2	4167	14867	5.48	3171.3	4.7	

Propeller	VT 3010 CFRP_FP			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	37 ° C		
Test Date:	29-03-2024	Humidity:	29 %	Cross-winds: Mild			

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.6	3	1297	1885	0.8	148.8	12.7	82 ° C [@70% 10 min Constant]
1400 - 40	49.4	7.5	1797	3646	1.51	370.5	9.8	
1500 - 50	49	16.2	2343	6107	2.5	793.8	7.7	
1600 - 60	48.4	27.1	2775	8486	3.43	1311.6	6.5	
1700 - 70	47.8	39	3129	10562	4.23	1864.2	5.7	
1800 - 80	47.1	53.6	3475	12659	5.03	2524.6	5.0	88 ° C [Maximum]
1900 - 90	46.3	69	3784	14566	5.72	3194.7	4.6	
1950 - 95	46	75	3902	15227	5.96	3450.0	4.4	
2000 - 100	46	75.1	3892	15319	5.97	3454.6	4.4	

Propeller	MZ 32 x 10.6 CF_FP			Power Supply / Battery	2 X TB - 22000 mAh 12S		
ESC	HW 80A 12S			Environmental Temp:	36 ° C		
Test Date:	28-03-2024	Humidity:	32 %	Cross-winds: Mild			

PWM - Throttle%	Voltage	Current (A)	RPM	Thrust (g)	Torque (N*m)	Electrical Power (W)	Efficiency	Temp (Celcius)
1300 - 30	49.7	2.6	1331	1721	0.68	129.2	13.3	86 ° C [@70% 10 min Constant]
1400 - 40	49.5	6.9	1866	3518	1.35	341.6	10.3	
1500 - 50	49.1	14.5	2406	5908	2.23	712.0	8.3	
1600 - 60	48.6	25.1	2830	8395	3.16	1219.9	6.9	
1700 - 70	48	36.7	3190	10414	3.98	1761.6	5.9	
1800 - 80	47.2	52.4	3508	12858	4.96	2473.3	5.2	92 ° C [Maximum]
1900 - 90	46.4	70	3762	15038	5.81	3248.0	4.6	
1950 - 95	46	77.1	3856	15842	6.14	3546.6	4.5	
2000 - 100	46	77.1	3847	15971	6.11	3546.6	4.5	

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