



# APM100

## FALCON SERIES

### KEY FEATURES



Lowest weight in its class to provide outstanding power density



Built for industrial strength



100% tested with individual performance reports



Active air-cooling system operates at high temperatures



Superior quality insulation provides long life and high reliability of windings



## DATASHEET

### Fly Higher. Fly Longer. Fly Smarter.

ePropelled USA-made brushless propulsion motors (PMs), with outstanding thrust-to-weight ratios, drive a wide range of uncrewed aerial vehicles (UAVs) applications where weight, size, energy efficiency, high heat tolerance, and rugged quality count most.

For new UAV designs or easy replacement uses, ePropelled Falcon PMs are designed from years of experience in magnetic engineering and materials science to deliver long life with ease of installation. When paired with our air motor controllers, designers attain high-performance, high-efficiency propulsion solutions for all manner of medium-duty UAVs.

### Air Propulsion Motor

The frameless Falcon APM100 delivers the thrust agility to drive demanding payload UAVs and smaller propellers with precise control across dynamic mission parameters in demanding thermal environments.

They make an excellent choice to swap out commodity PMs and attain better performance, greater life, longer range, and far higher operational integrity.

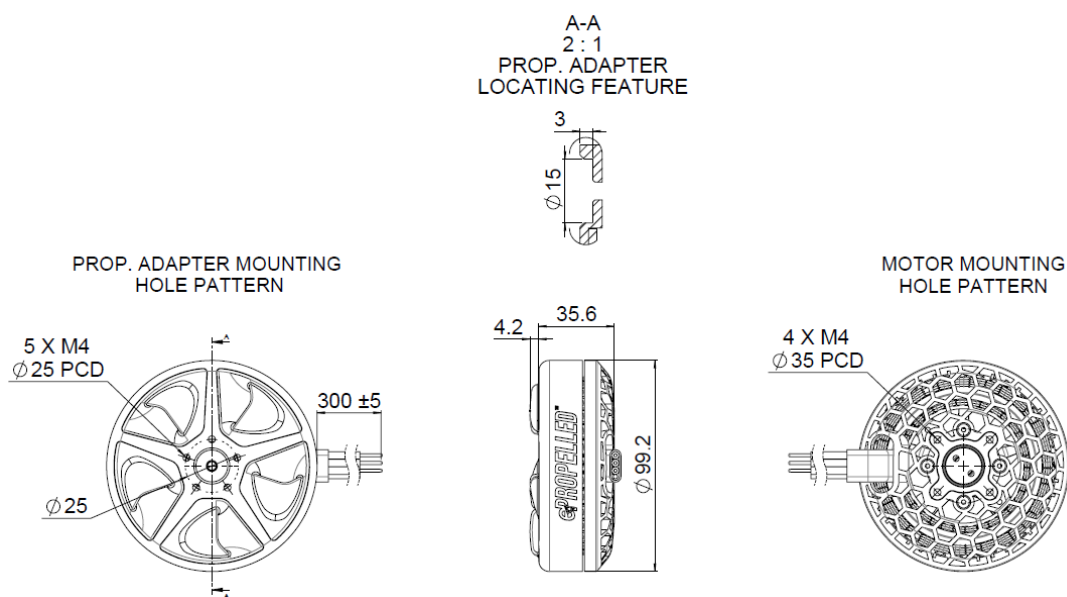
Compact and stingy on energy demand, the APM100s have a proven record of durability, reliability, and easily optimized performance across most mainstream medium-lift UAV uses.



## MOTOR PARAMETERS

PARAMETER	VALUES/DETAILS
Kv (Velocity Constant)	96 RPM/V
Rated Voltage	12S – 20S LiPo battery
Continuous Current (180s)	30A
Continuous Power (180s)	2000W (motor needs 4m/s airflow)
Kt (Torque Constant)	0.12 Nm/A
Nominal Operational Speed	0 to 6,000 RPM
Maximum Speed Limit	8,000 RPM
Stator Winding Temperature Sensor	K-type thermocouple
Magnetic Poles	40
Stator Slots	33
Motor Electrical Frequency at 6000 RPM	2000 Hz
Maximum Ambient Temperature	50°C/122°F
Winding Operating Temperature Allowed up to	180°C/356°F
Rotor Operating Temperature Allowed up to	170°C/338°F
Motor Diameter	99.2 mm
Motor Length (With Airflow Inserts)	39.8 mm
Motor Weight (With Airflow Inserts)	525 g
Motor Mounting Pitch Circle Diameter (PCD) 4 x M4	35 mm
Propeller Mounting Pitch Circle Diameter (PCD)	Adapter dependent
IP Rating (Front Face)	IP23
Recommended Propeller Diameter	21.5" to 27.5"

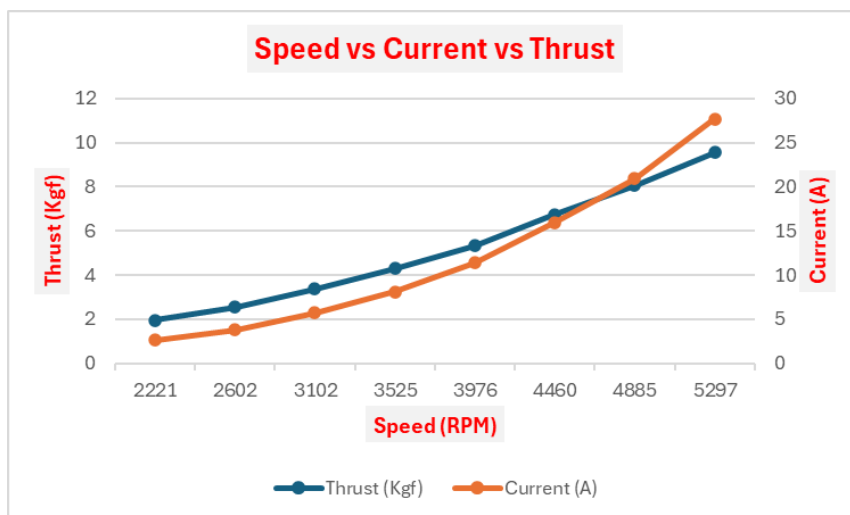
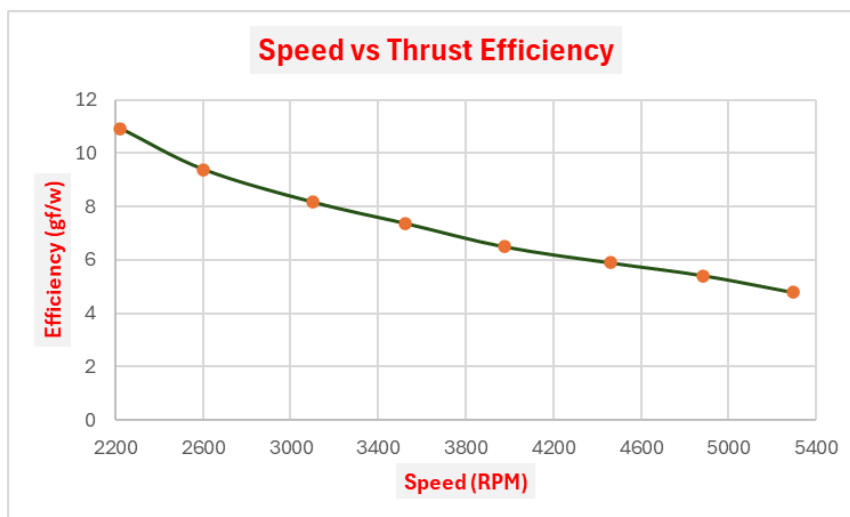
## MECHANICAL DIMENSIONS



\*All Dimensions are in mm

<b>MOTOR</b>	<b>APM100 Kv96</b>
Relative Humidity (%)	81
Ambient Temperature ©	30
Atmospheric Pressure(mB)	1015.58
Air Density (kg/m <sup>3</sup> )	1.14

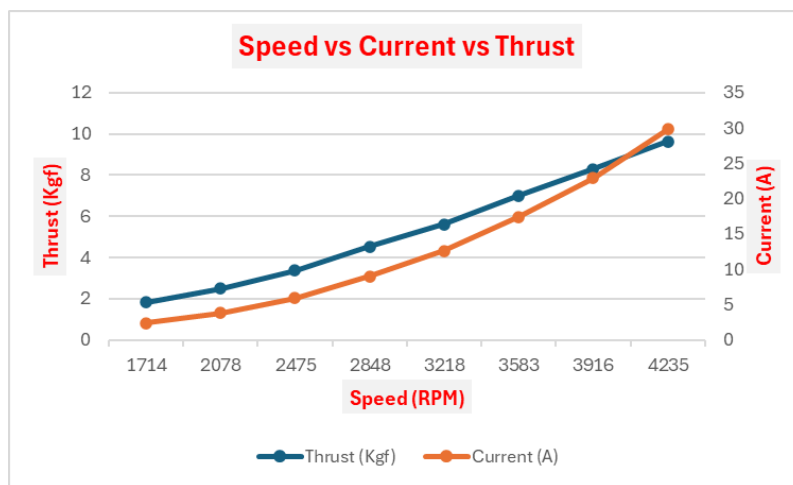
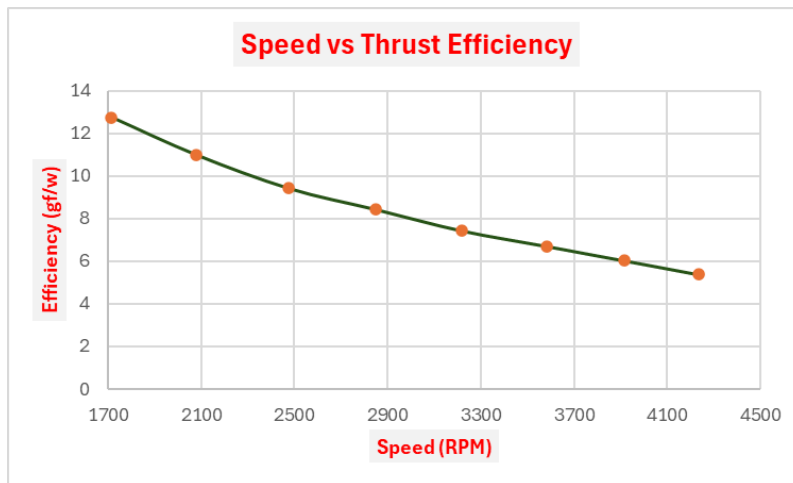
TYPE	PROPELLER	VOLTAGE	THROTTLE	MOTOR SPEED	SUPPLY CURRENT	ELECTRICAL POWER	THRUST	THRUST EFFICIENCY
		VOLTS	%	RPM	AMPS	WATT	KGF	GF/W
APM100	24.5" x 8.1"	72	30	2221	2.6	187	1.95	10.9
			40	2602	3.8	271	2.54	9.4
			50	3102	5.8	414	3.38	8.2
			60	3525	8.1	586	4.31	7.4
			70	3976	11.4	820	5.32	6.5
			80	4460	15.9	1107	6.76	5.9
			90	4885	20.9	1443	8.07	5.4
			100	5297	27.7	1996	9.55	4.8



## PERFORMANCE DATA: APM100 Kv96 (27.5" x 8.9")

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APM100	(27.5" x 8.9")	60	30	1714	2.4	144	1.83	12.8
			40	2078	3.8	228	2.50	11
			50	2475	5.9	357	3.36	9.4
			60	2848	9	539	4.54	8.4
			70	3218	12.6	755	5.61	7.4
			80	3583	17.4	1046	7.01	6.7
			90	3916	22.9	1375	8.29	6
			100	4235	29.9	1791	9.63	5.4



**Note:** All specifications are subject to change without notice. For more information, including ordering products, please contact us at [info@epropelled.com](mailto:info@epropelled.com) | Phone: +1 (603) 236 7444