



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 Motors

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.

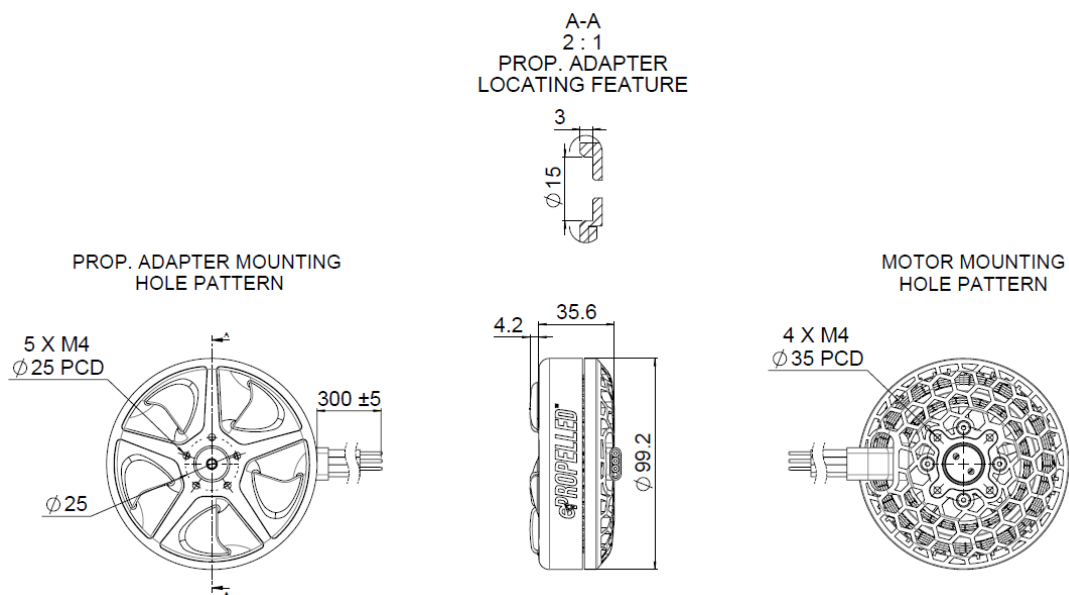
Compact and stingy on energy demand, the APM100s have a proven record of durability, reliability, and easily optimized performance across most mainstream medium-lift UAV uses.



MOTOR PARAMETERS

| PARAMETER | VALUES/DETAILS |
|---|---------------------|
| Kv (Velocity Constant) | 96 RPM/V |
| Rated Voltage | 12s – 18s |
| Peak Current (180s) | 30A |
| Maximum Power (180s) | 2000W |
| 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) | 39.7 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) | IP20 |
| Recommended Propeller Diameter | 21 to 27.5 in |

MECHANICAL DIMENSIONS

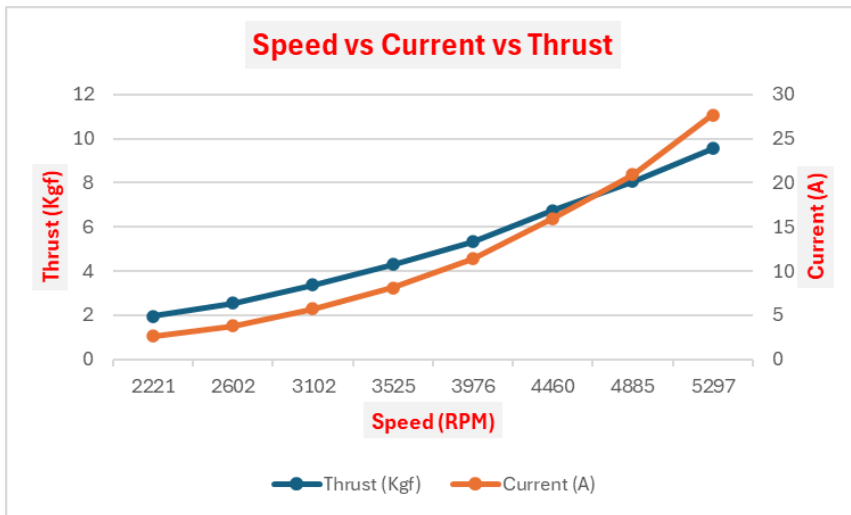
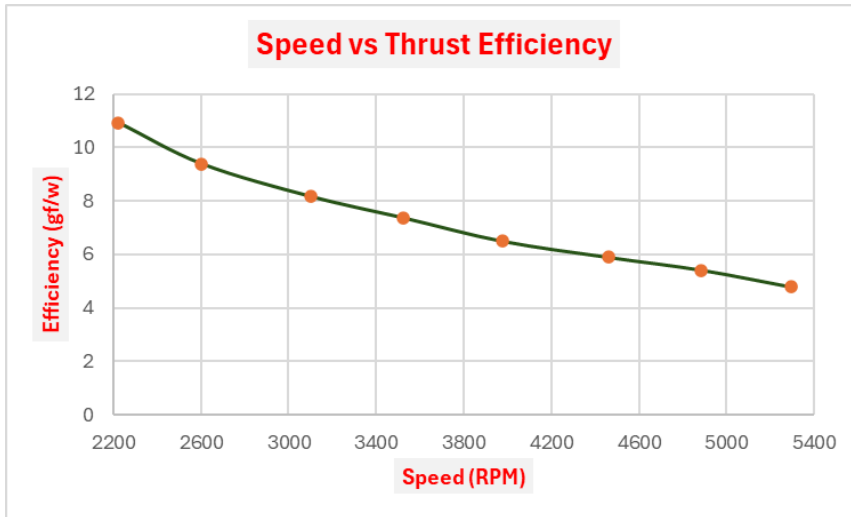


*All Dimensions are in mm

PERFORMANCE DATA: APM100 KV96 (24.5" x 8.1")

| | |
|--------------------------|-------------|
| MOTOR | APM100 Kv96 |
| Relative Humidity (%) | 81 |
| Ambient Temperature © | 30 |
| Atmospheric Pressure(mB) | 1015.58 |

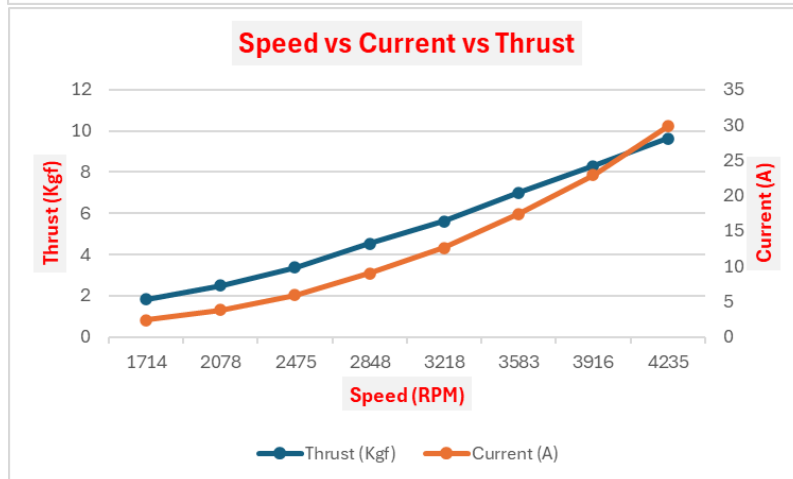
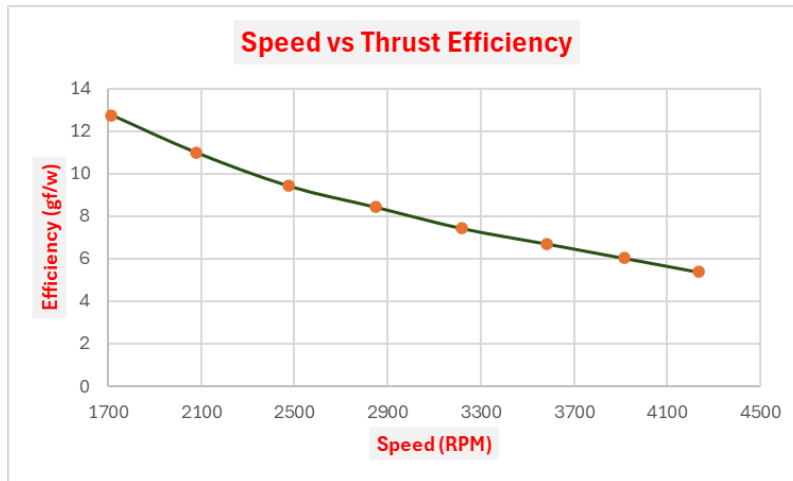
| TYPE | PROPELLER | VOLTAGE | THROTTLE | MOTOR SPEED | SUPPLY CURRENT | ELECTRICAL POWER | THRUST | THRUST EFFICIENCY |
|--------|--------------|---------|----------|-------------|----------------|------------------|--------|-------------------|
| | | VOLTS | % | RPM | AMPS | WATT | KGF | GF/W |
| APM100 | 24.5" x 8.1" | 72 | 30 | 2221 | 2.60 | 187.28 | 1.95 | 10.92 |
| | | | 40 | 2602 | 3.76 | 270.84 | 2.54 | 9.38 |
| | | | 50 | 3102 | 5.75 | 414.17 | 3.38 | 8.16 |
| | | | 60 | 3525 | 8.13 | 585.56 | 4.31 | 7.36 |
| | | | 70 | 3976 | 11.38 | 819.59 | 5.32 | 6.49 |
| | | | 80 | 4460 | 15.95 | 1106.87 | 6.76 | 5.89 |
| | | | 90 | 4885 | 20.93 | 1443.08 | 8.07 | 5.41 |
| | | | 100 | 5297 | 27.72 | 1996.03 | 9.55 | 4.78 |



PERFORMANCE DATA: APM100 KV96 (27.5" x 8.9")

| | |
|--------------------------|-------------|
| MOTOR | APM100 Kv96 |
| Relative Humidity (%) | 81 |
| Ambient Temperature © | 30 |
| Atmospheric Pressure(mB) | 1015.58 |

| TYPE | PROPELLER | VOLTAGE | THROTTLE | MOTOR SPEED | SUPPLY CURRENT | ELECTRICAL POWER | THRUST | THRUST EFFICIENCY |
|--------|--------------|---------|----------|-------------|----------------|------------------|--------|-------------------|
| | | VOLTS | % | RPM | AMPS | WATT | KGF | GF/W |
| APM100 | 27.5" x 8.9" | 60 | 30 | 1714 | 2.39 | 143.48 | 1.83 | 12.75 |
| | | | 40 | 2078 | 3.79 | 227.54 | 2.50 | 10.99 |
| | | | 50 | 2475 | 5.94 | 356.60 | 3.36 | 9.42 |
| | | | 60 | 2848 | 8.97 | 538.46 | 4.54 | 8.43 |
| | | | 70 | 3218 | 12.58 | 755.09 | 5.61 | 7.43 |
| | | | 80 | 3583 | 17.43 | 1046.10 | 7.01 | 6.70 |
| | | | 90 | 3916 | 22.91 | 1374.85 | 8.29 | 6.03 |
| | | | 100 | 4235 | 29.85 | 1791.21 | 9.63 | 5.38 |



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