

SPECIFICATION

PART NO.	T14
VER	V1.1
DESCRIPTION	Model 10020-15 Integrated Power System for UAVs
DATE	2026/07/31
Prepared By	
Checked By	
Approved By	

Version	Date	Version Update Record	Revised By
V1.0	2026/01/14	Basic information of specification	Huang Chen
V1.1	2026/07/31	Modify parameters	Huang Chen

Customer acknowledged by

1.Scope of application

This specification applies to the T14 UAV Power System

2.Terms of Use

Project	Specifications			Conditions/Notes
Rated Voltage	14S	18S	24S	
Voltage Range	43V ~ 54V	64V ~ 81V	86V ~ 108V	
KV price	60KV	45KV	34KV	
Working Pulse Width	1050 ~ 1950			
Service Environment	Temperature : -20 ~ 40°C Humidity: 10-90% RH			
Storage Environment	Temperature : -40 ~ 80°C Humidity: 5-95%RH			

3.Testing Conditions

Project	Specifications
Temperature	25±2°C
Humidity	65±20%
Motor state	Output shaft placed parallel to the ground
All data were tested under the following conditions: Test at 25°C with 65% RH. If any inconsistency occurs, testing may also be performed under the following conditions: temperature 5-35°C; humidity 45-85% RH.	

4. Mechanical Requirements

Project	Specifications	Conditions/Notes
Structure	According to the motor's structural specifications	Subject to the assembly drawing
Weight	4250±100g	With wires and propeller
Appearance	No mechanical damage/No adverse corrosion	Visual inspection (Acceptable range and limits are subject to the sample.)
Shaft Clearance	0.03mm	Dial gauge
Angle of Rotation	360°	
Rotation Direction	CW/CCW	

5. Performance Characteristics

Item	Specifications			Conditions/Notes
Rated Current	14S	18S	24S	Good heat dissipation conditions
	60A	45A	35A	
Peak current	230A	160A	120A	≤ 10 seconds under good heat dissipation conditions
PWM Input Signal level	3.3V/5V			
PWM Input Signal Frequency	50Hz-500Hz			
Communication Method	CAN			
No-Load Speed	14S	18S	24S	20V (14S) Motor Comprehensive Tester. 25V (18S, 24S) Motor Comprehensive Tester.
	1130 ~ 1260	1070 ~ 1120	810 ~ 900	
No-Load Current	4.85A±5%	3.05A±5%	2.13A±5%	
Resistance	10.5mΩ±5%	18mΩ±5%	29mΩ±5%	Resistance varies with ambient temperature. If batch resistance exceeds the standard range due to environmental changes, re-sign the standard.
Inductor	39.5μH ±10%	72.5μH ±10%	129μH ±10%	
Wire length and Terminals	Exposure: 1500mm -10# ultra-soft silicone wire			
Rated Thrust	27kg			Excellent Heat Dissipation
Maximum Thrust	58kg			Good heat dissipation conditions, short-term operation
Levels of Protection	IPX6 rating for the entire device			

6. Reliability Test

Item	Test Standards Conditions	Determination Characteristic
Life Test	Voltage/DC: 54 Load: 55190 inches (well-cooled) Operating condition: Rated condition 200h	Meet the requirements specified in the "Acceptance Criteria."
High Temperature Storage Experiment	Temperature : 80°C Time: 48 hours	
Low Temperature Storage Experiment	Temperature : -20°C Time: 48 hours	
High Temperature Operation Test	Temperature : 70±2°C Time: 24 hours	
Low Temperature Operation Test	Temperature : -20±5°C Time: 24 hours	
High Temperature and High Humidity Storage Experiment	Humidity: 90%RH Time: 48 hours dry condensation	

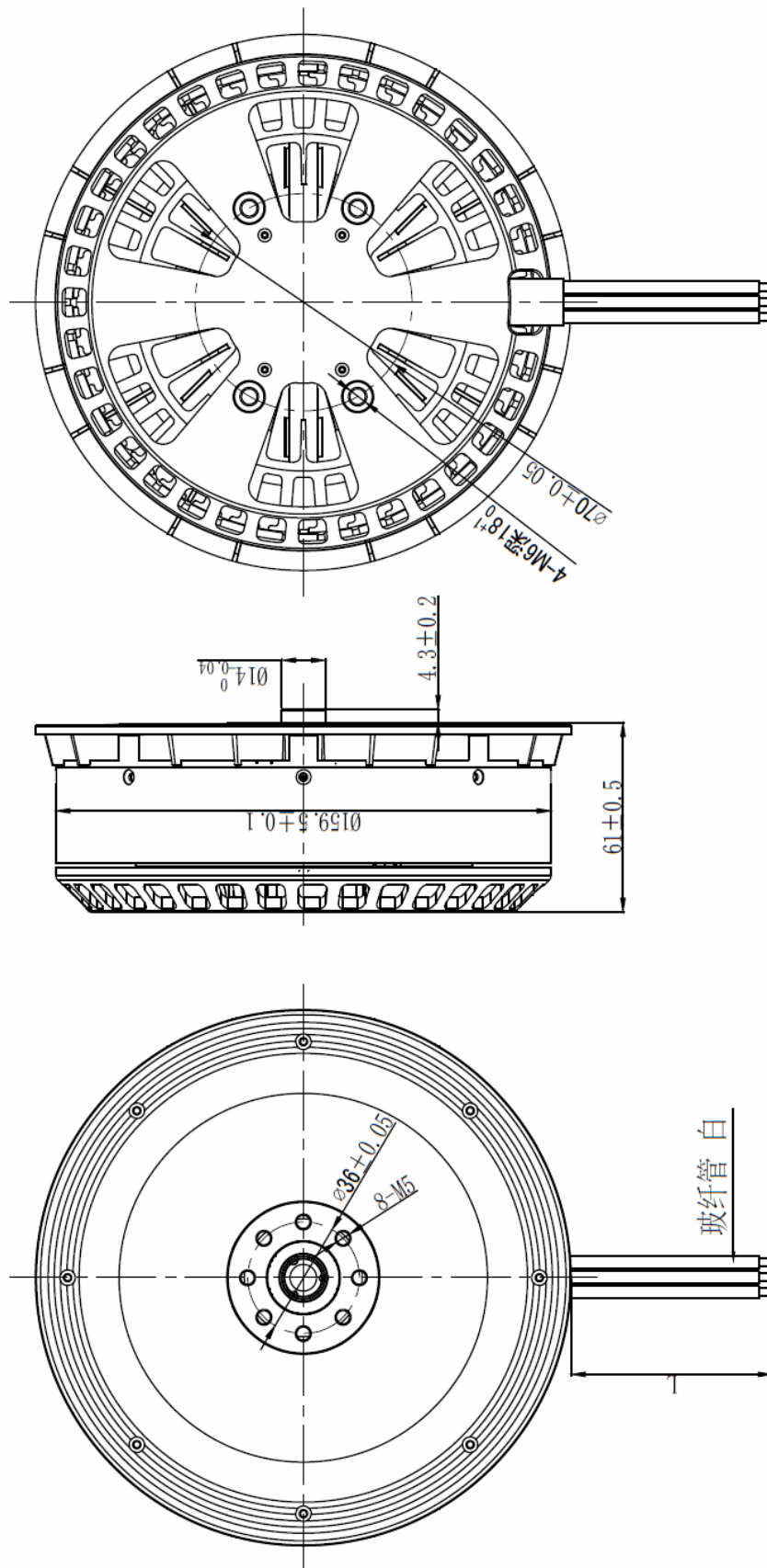
7. Determination characteristics

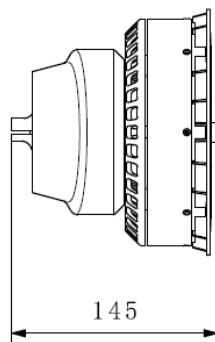
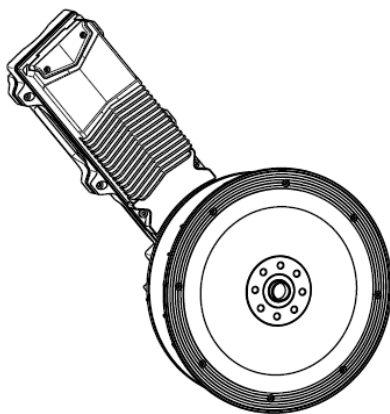
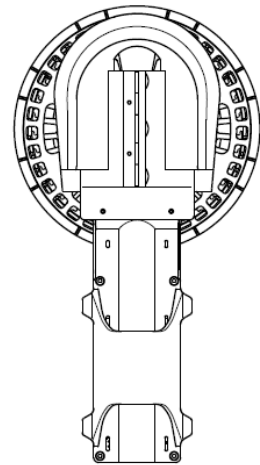
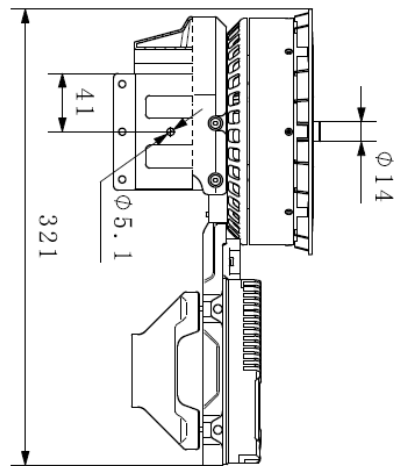
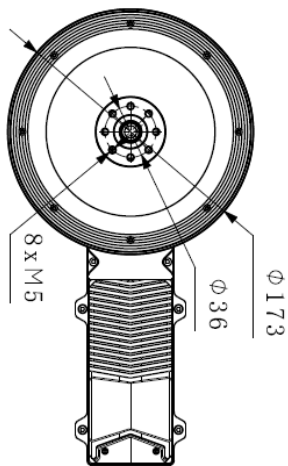
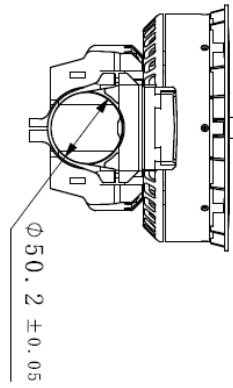
Item	Determination Characteristic
Table A	1. The load speed variation shall be within ±30% of the initial value.
	2. The load current variation shall be within ±30% of the initial value.
	3. The resistance variation between terminals shall be within ±30% of the initial value.
	4. Standard Test Conditions

8. Precautions

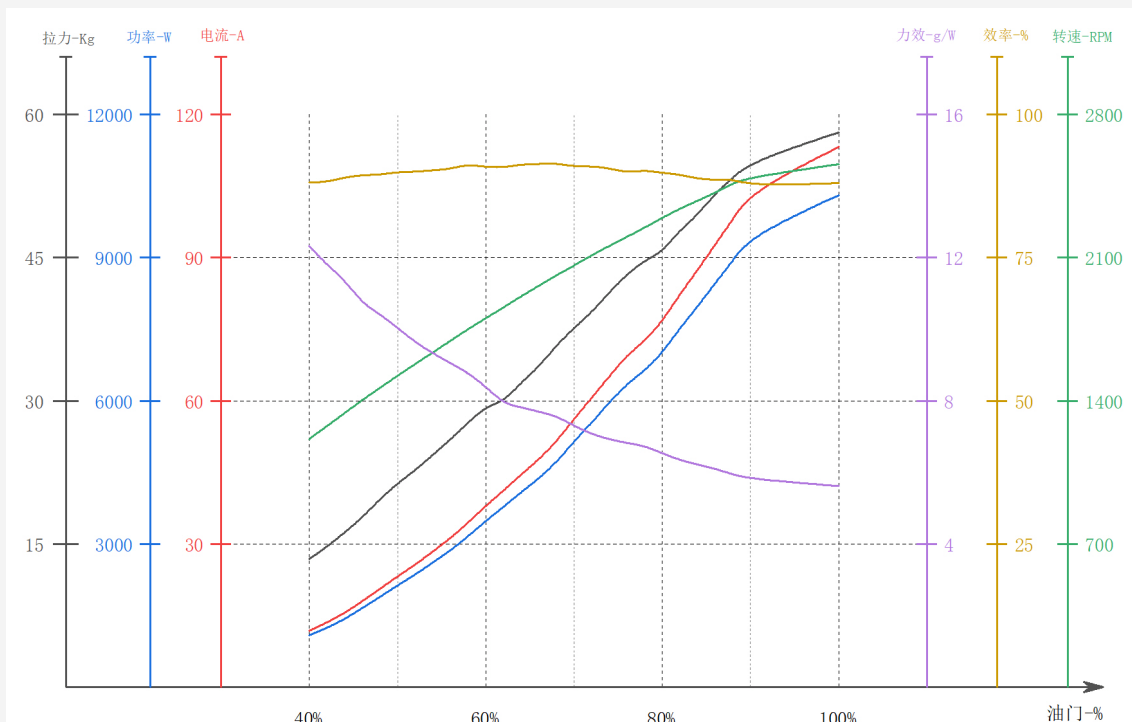
1. Handle the motor with care during transportation to prevent damage to its casing and performance from impacts or collisions.
2. The motor should be stored away from high temperatures, moisture, and chemical corrosion, with a storage period not exceeding 6 months.
3. Avoid frequently blocking the motor shaft after power connection.
4. The welding must be completed within 5 seconds to prevent damage to the terminals or wires.

Mechanical dimensions

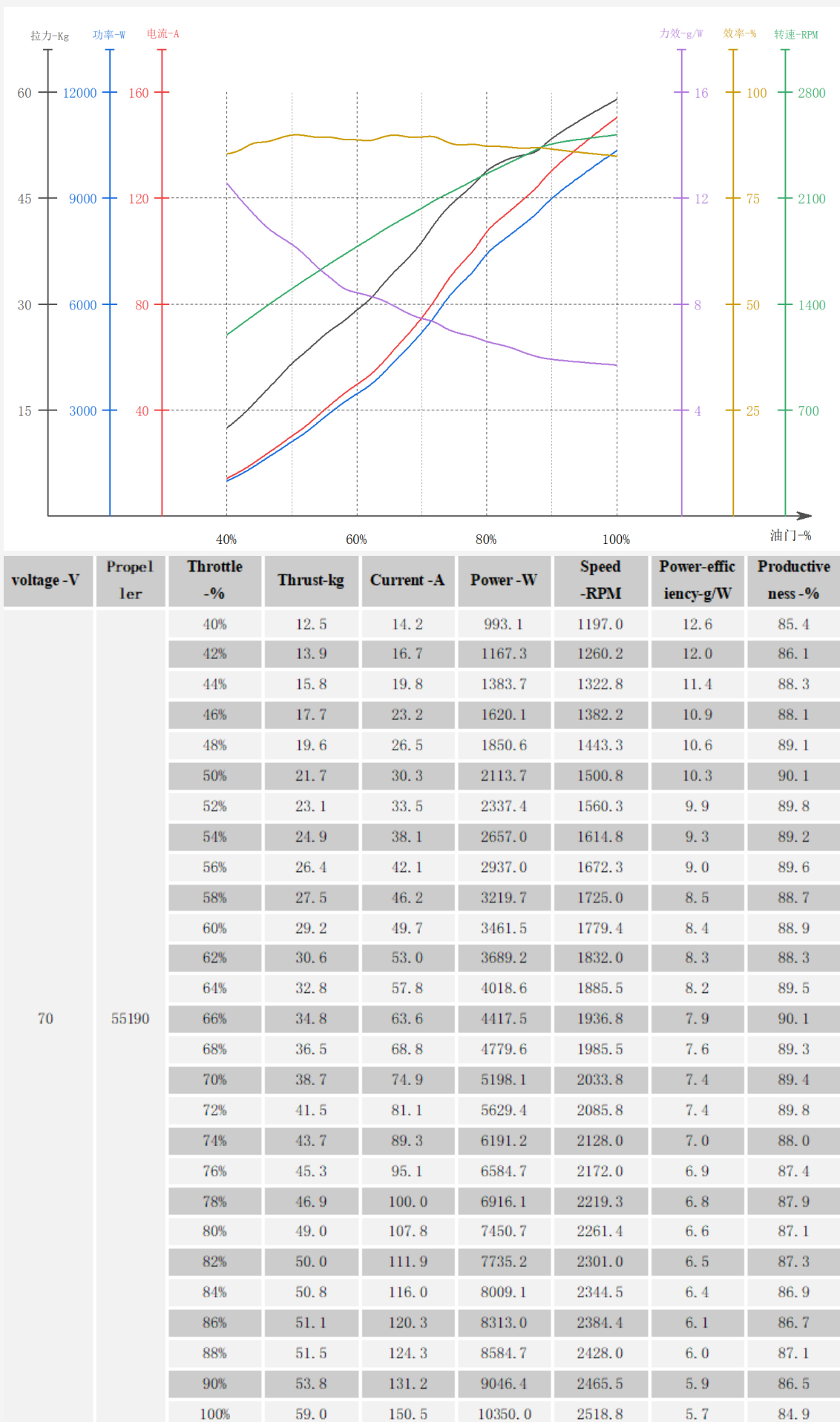


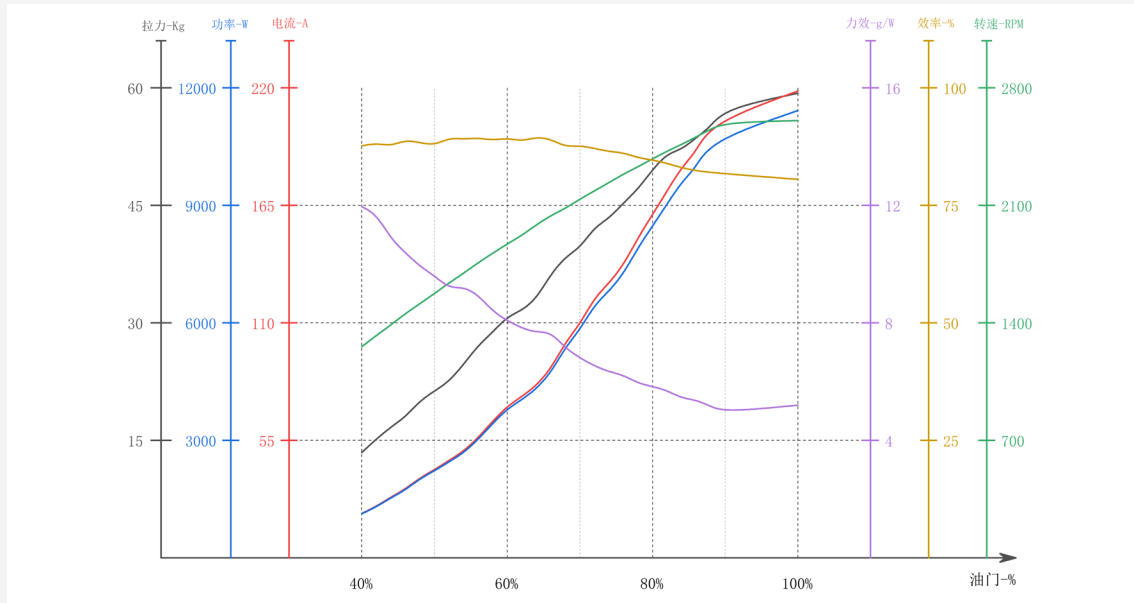


Test Data



voltage -V	Propeller	40%	60%	80%	100%	油门-%		
		Throttle -%	Thrust-kg	Current -A	Power -W	Speed -RPM	Power-efficiency-g/W	Productiveness -%
92	55190	40%	13.4	11.8	1087.4	1213.8	12.3	88.1
		42%	14.7	13.5	1244.3	1277.0	11.8	88.2
		44%	16.2	15.5	1427.1	1340.4	11.4	89.0
		46%	17.7	17.9	1648.7	1402.2	10.7	89.4
		48%	19.7	20.6	1890.5	1462.0	10.4	89.5
		50%	21.4	23.2	2132.3	1522.0	10.0	89.9
		52%	22.7	25.7	2357.6	1579.8	9.6	90.0
		54%	24.4	28.5	2618.6	1636.8	9.3	90.3
		56%	25.9	31.2	2860.4	1693.2	9.1	90.5
		58%	27.7	34.4	3157.0	1750.3	8.8	91.3
		60%	29.4	38.0	3482.4	1803.5	8.4	90.8
		62%	29.9	41.2	3781.3	1856.0	7.9	90.7
		64%	31.9	44.5	4078.4	1910.3	7.8	91.3
		66%	33.5	47.6	4365.6	1961.0	7.7	91.3
		68%	35.8	51.5	4714.2	2013.4	7.6	91.5
		70%	37.7	56.2	5152.5	2061.0	7.3	90.9
		72%	39.2	60.5	5534.9	2111.8	7.1	91.0
		74%	41.3	65.1	5954.7	2155.9	6.9	90.6
		76%	43.2	69.5	6353.4	2201.0	6.8	89.8
		78%	44.7	72.5	6631.1	2246.8	6.7	90.3
		80%	45.5	76.5	6994.1	2292.8	6.5	89.8
		82%	47.8	82.3	7512.4	2337.8	6.4	89.6
		84%	49.4	87.3	7966.6	2377.4	6.2	88.8
		86%	51.7	92.8	8471.0	2417.6	6.1	88.6
		88%	53.3	97.8	8916.8	2461.3	6.0	88.8
		90%	55.0	103.7	9448.8	2493.0	5.8	87.6
		100%	58.1	113.2	10310.9	2556.8	5.6	88.0





voltage -V	Propeller	Throttle -%	Thrust-kg	Current -A	Power -W	Speed -RPM	Power-efficiency-g/W	Productiveness -%
54	55190	40%	13.4	20.8	1123.8	1197.9	12.0	83.4
		42%	15.2	24.1	1300.6	1261.9	11.7	84.0
		44%	16.7	28.5	1537.9	1322.3	10.9	83.4
		46%	17.9	32.0	1726.5	1384.4	10.4	84.7
		48%	20.0	37.5	2019.7	1442.1	9.9	84.2
		50%	21.3	41.3	2221.0	1499.6	9.6	83.6
		52%	22.5	45.6	2454.9	1560.7	9.2	85.1
		54%	24.8	50.0	2687.0	1616.2	9.2	84.8
		56%	27.1	56.2	3018.7	1673.3	9.0	85.1
		58%	28.8	63.9	3427.9	1727.6	8.4	84.5
		60%	30.8	71.0	3804.1	1780.7	8.1	85.1
		62%	31.6	75.6	4042.1	1830.5	7.8	84.4
		64%	33.0	80.5	4305.3	1888.1	7.7	85.3
		66%	36.2	88.4	4722.6	1941.5	7.7	84.9
		68%	38.4	100.9	5374.3	1982.9	7.1	83.3
		70%	39.6	109.6	5830.9	2036.3	6.8	83.6
		72%	42.2	121.6	6446.5	2081.5	6.5	83.0
		74%	43.3	128.5	6805.7	2128.2	6.3	82.3
		76%	45.3	137.1	7253.0	2177.9	6.2	82.1
		78%	47.1	150.1	7933.2	2219.4	5.9	81.1
		80%	49.5	160.5	8463.0	2262.7	5.8	80.6
		82%	51.6	171.5	9029.4	2307.1	5.7	80.0
		84%	52.1	182.9	9595.7	2345.1	5.4	79.0
		86%	53.7	190.2	9976.0	2388.1	5.4	78.5
		88%	55.0	203.4	10646.1	2432.0	5.2	78.1
		90%	57.4	221.4	11546.7	2470.3	5.0	76.4
		100%	59.3	218.5	11419.8	2480.8	5.2	76.7

Precautions and Quality Assurance Agreement

Storage environment

The motor should be stored in a dry and well-ventilated warehouse at temperatures between -20°C and 60°C with standard humidity of 15% to 70%RH (non-condensing), for a minimum of 6 months without compromising its quality. The operating environment for the motor is 0°C to 40°C and 15% to 90%RH (non-condensing). The storage and usage altitude must not exceed 1500m (or 86-106Pa atmospheric pressure). The motor must be kept away from severe corrosive gases and media that may affect electrical insulation performance.

quality standard

The buyer shall retain the sample motor for reference when quality issues need to be confirmed, in accordance with the supplier's sample specifications and the delivered prototype.

Sampling inspection criteria

Perform a standard MIL-STD-105E inspection for sampling judgment: 1. Insulation withstand voltage: IL=S-I AQL=0 2. Motor electrical performance (noise, vibration): IL=II AQL=0.65 (standard according to sample) 3. Appearance: IL=II AQL=1.5

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- 1、 The motor complies with EMC certification standards.
 - 2、 The motor's performance and testing standards shall comply with the 'Sample Specification Document' and prototype motor approved by both parties. If the purchaser fails to sign and return the confirmation document on time or does not sign the prototype, it shall be deemed as acceptance of all requirements from the supplier.
 - 3、 Minor variations in motor test performance due to differences in power supply and testing equipment are normal.
 - 4、 If the motor is used beyond its rated specifications, or if abnormal conditions such as motor jamming or short circuits are caused by human error, the motor's service life will be terminated. The supplier shall not be held liable.
 - 5、 The motor is covered by a 2-month free warranty for non-human factors, with paid repairs after 12 months. The supplier shall not be liable for quality issues caused by factors beyond the manufacturer's control.
 - 6、 Other: Keep the motor away from iron filings and similar materials to ensure smooth operation. The motor's magnet is fragile and prone to jamming. During installation, avoid using excessively long screws, as they may damage internal components and cause short circuits that could burn out the motor.