

# Experimental test report

Original Model		1.Scope of application: This specification is applicable to the U120-3 brushless DC motor	
U120-3			
2.Operating Condition			
Item		Specification	Condition Remark
2-1	Rated voltage	DC58.8V	
2-2	KV	60KV±5%	
2-3	Voltage range	14S	
2-4	Environment of use	Temperature:20~40℃ Humidity:10~90%RH	No condensation of water vapor
2-5	Save environment	Temperature:-40~80℃ Humidity:5~95%RH	No condensation of water vapor
3. Mesasuring condition			
Item		Specification	
3-1	Temperature	25±2℃	
3-2	Humidity	65±20%	
3-3	Motor state	Motor shaft horizontal(lock the motor in a testfixture)	
All data testing conditions: temperature 25℃, relative humidity 65% RH. If discrepancies arise, tests can be conducted under the following conditions: temperature 5~35℃; humidity 45~85% RH.			
4. Mechanical Specification			
Item		Specification	Condition Remark
4-1	Structure	Motor as per specified external structure	To Assembly drawing
4-2	Weight	3.7±0.18kg	Includes wires and propeller
4-3	Appearance	No mechanical damage or corrosion	Visual Inspection (Permissible range and limits are specified in the sample)
4-4	Axial gap	0mm	Micrometer
4-5	Axial tension	/	
4-6	Angle of rotation	360°	
4-7	Direction of rotation	Terminals U/V/W correspond to motor connector wiring. From the shaft end, viewed as clockwise (CW) rotation	
5.Performance and characteristics			
Item		Specification	Condition Remark
5-1	No-load speed	1476±5%RPM	Rated voltage:25V
5-2	No-load current	≤3.5A	
5-3	Phase resistance	18.8mΩ±5%	

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6. Reliability experiment			
Item		Standard test condition	Judging characteristic
6-1	Life test	Voltage: 58.8V DC / Load: 55 inch propeller / Test mode : Throttle under 58% (current controlled within 53A, thrust under 25 kg). Load life test: continuous rotation for 3 hours with no issues	After the experiment, should meet the requirements of 7-1
6-2	High temperature storage test	Temperature: 80°C Time: 48 hours	
6-3	Low temperature storage test	Temperature: -20°C Time: 48 hours	
6-4	High temperature operation experiment	Temperature: 70±2°C Time: 24 hours	
6-5	Low temperature operation experiment	Temperature: -20±5°C Time: 24 hours	
6-6	High temperature and high humidity storage test	Humidity: 90%RH Time: 48 hours No condensation of water vapor	
7. Judging characteristic			
	Item	Judging characteristic	
7-1	Table A	1. The change of load speed should be within 30% of the initial value.	
		2. The change of load current should be within 30% of the initial value.	
		3. The resistance variation between the terminals is within the initial value of 30%.	
		4. Standard test condition: Rated voltage	
8. Usage Precautions			
8-1: Handle the motor carefully during transport to avoid damage to the motor body and performance due to collisions or impacts;			
8-2: Store the motor in a cool, dry, and non-corrosive environment, with storage duration not exceeding six months;			
8-3: Do not frequently obstruct the motor shaft when powered on;			
8-4: Complete soldering within 5 seconds to avoid damaging terminals or wires.			