

樣品承認書

HSF

SPECIFICATION FOR APPROVAL SHEET

客戶名稱(Customer) : **Shagal Marketing Solutions Ltd**

呈送(Attention) : **Neta Chiprout**

客戶料號(P/N of Customer) :

產品名稱(Part Name) : **直流無刷風扇(DC Brushless FAN)**

產品規格(Model No) : **B1201512HW(RoHS)**

本廠料號(Part No): **-**

數量(Quantities) : **- pcs**

客戶承認 (CUSTOMER APPROVAL)

業務 (Sales)	品保 (QA)	工程發行章 (ENG)	核准 (Approved)	審核 (Checked)
Emily	Alin Chen		Gary Guo	Regina Chen

非常感謝貴司給予此次送樣機會，僅此提供樣品及完整規格供您測試承認。

We are pleased in sending you herewith our sample together with completed specification and during for your approval.

敬請確認規格符合貴公司需求無誤後，簽回此頁，謝謝！

Please return to us one copy of approval sheet with your approved signatures.

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1、 範圍(Scope)

1.1 這份文件定義直流無刷風扇之電氣機械特性。

This documentation defines the Electrical and Mechanical characteristics of DC Brushless Fans.

1.2 環境條件標準(Standard Environmental Condition)

在標準溫度 25°C，相對濕度 65%RH 下，且允許在環境溫度 10~35°C，相對濕度 25~80%RH 中測試。

Temperature 25°C, relative humidity 65%RH shall be standard if no doubt arises in the judgment.

However it is permitted that test are conducted in the environment of temperature 10~35°C, relatives humidity 25~80%RH.

2、 產品特性(Products Characters)

安規類型(Safety Approval) :		
規格類型(Item)	規格參數值(Specification Conditions)	
額定電壓(Rated Voltage)	12	VDC
操作電壓(Operating Voltage)	10.8~13.2	VDC
啟動電壓(Starting Voltage)	9	VDC
消耗電流(Consumption Current)	0.20	Max. Amp at 12VDC
額定功率(Rated Input Power)	2.4	Max. Watt at 12VDC
額定轉速(Rated Speed)	6500	RPM±10%
最大風量(Max. Air Flow)	7.7	Max. CFM
最大靜壓值(Max. Static Pressure)	2.40	Max. mmH ₂ O
噪音值(Noise Value)	30.5	dBA
馬達保護類型(Motor Protection)	極性保護(Polarity Protection) 自動啟動，鎖定保護(Auto Restart)	
訊號輸出(Signal output)	FG	Frequency Generator
接頭類型(Connection Lead Type)	線接	Terminal Connector
旋轉方向(Rotation direction)	CCW	Counter-clockwise viewed from inlet
出風口方向 (Air Flow direction)	ETV	Air exhaust through ventilator
軸承類型(Bearing Type)	Sleeve Bearing	
預計壽命(Life Expectancy)	30,000	Hours at 30°C 15~65% R.H.
淨重(Net Weight)	24.0	Gram
包裝(Packing)	60	PCS/CTN

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3、 電子特性(Electrical features)

3.1 絕緣等級: Class A(105°C)

Insulation Class: Class A(105°C)

3.2 絕緣耐壓強度:在馬達外框至電源導電端能承受在 AC50/60Hz 下之交流電壓 500V 達一分鐘或交流電壓 600V 達兩秒鐘，漏電流 5mA 以下。

Dielectric strength: AC50/60Hz, 500VAC for 1 minute or 600VAC for 2 seconds, motor frame to leads of power source terminal and under 5mA leak current.

3.3 絕緣阻抗:在馬達外框至電源導電端有直流電壓 500V 時最少達到 10M Ω。

Insulation resistance: DC500V at 10M Ω minimum, motor frame to leads of power source terminal.

3.4 預計壽命:在額定電壓連續運轉時的平均壽命在絕對溫度 40°C 與相對濕度 65%RH 以下之條件測試下。

Life expectancy: Average life for rated voltage and continuous operation at ambient temperature 40°C and under humidity 65%RH.

4、 保護方法(Protection Method)

4.1 鎖定保護: 在額定電壓工作鎖定 72 小時不能產生燃燒現象。

Locked rotor protection: The burning cannot be produced when restricted for 72 hours at the rated voltage.

4.2 極性保護:在額定電壓工作反接時，5 分鐘內不會引致損毀。

Polarity protection: The reverse connection at the rated voltage will not cause damage in 5 minutes.

5、 機械特性(Mechanical features)

5.1 尺寸:在圖面與承認書中，包含特別標示之所有尺寸、轉動方向、風量額定特性等。

Dimension: All dimension, direction of rotation and Airflow, rated characteristics are specified in drawing and data sheet of enclosed.

5.2 材質規格(Material)

5.2.1 外 框: 塑膠 UL94V-0

Frame: Thermoplastic of UL 94V-0

5.2.2 扇 葉: 塑膠 UL94V-2

Impeller: Thermoplastic of UL 94V-2

5.2.3 馬 達: 直流無刷馬達

Motor: Brushless DC motor.

5.3 電源線(Lead wires):

UL 1007

30 AWG

5.4 連 接 器: UL 安規規定之連接器，請參考附圖。

Connector: UL verified connector. Please find attached drawing.

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6、 環境(Environmental)

6.1 運轉溫度:-10°C 至+70°C。

Operating temperature: -10°C to +70°C.

6.2 儲存溫度:-40°C+75°C。

Storage temperature: -40°C to +75°C.

7、 特別檢驗(Special inspection)

落地測試:馬達能在最少包裝情況下分別三面於 60CM 高自由落下在 10MM 厚之木板上。

Drop test: Motor withstands one free body drop from 60cm in height onto 10mm thickness of wooden board for each of them three faces in minimum packaging condition.

8、 特性定義(Characteristics definition):

8.1 額定電流:在溫度 25°C、相對濕度 65%RH 無負載的條件下，連續以額定電壓運轉 5 分鐘後測量出來的電流值。

Rated current: Rated current shall measured after 5 minutes of continuous rotation at rated voltage in free load at 25°C, 65%RH.

8.2 額定轉速:在溫度 25°C、相對濕度 65%RH 無負載的條件下，連續以額定電壓運轉 5 分鐘後測量出來的轉速值。

Rated speed: Rated speed shall be measured after 5 minutes of continuous rotation at rated voltage in free load at 25°C, 65%RH.

8.3 啟動電壓:當風扇瞬間通電能轉動的最低電壓值。

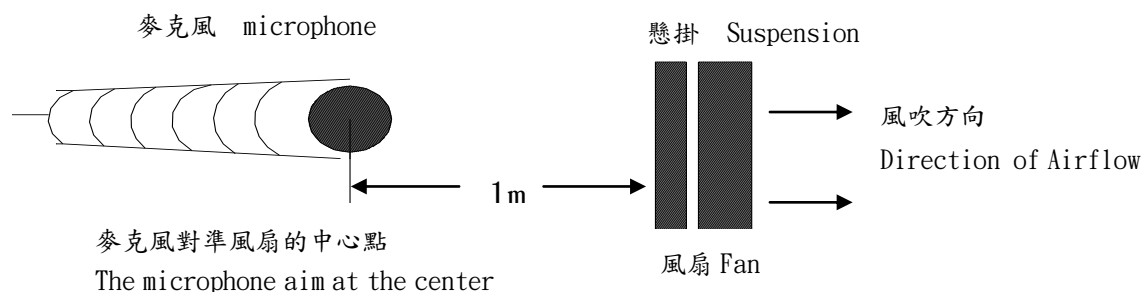
Start Voltage: The voltage that is able to start the fan to operate by suddenly witching on.

8.4 額定功率:在溫度 25°C、相對濕度 65%RH 無負載的條件下，連續以額定電壓運轉 5 分鐘後測量出來的功率值。

Rated Input Power: Rated Input power shall be measured after 5 minutes of continuous rotation at rated voltage in free load at 25°C, 65%RH.

8.5 噪音值:在噪音測試房中，放置麥克風於進風口一公尺，並參考 ISO-7779 規範測量出來。

Noise level: The measurement of noise level is carried out with reference to ISO-7779 in an anechoic chamber with the microphone positioned one meter from the air intake. Testing fan shall be hanged in clean air.



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9、 注意事項(Notes)

- 9.1 凡在前述規格條件內使用本產品時，本公司將完全保證產品可靠度。
We will guarantee the reliability if the application of our products is not exceeded the limitation, which is specified on this specification.
- 9.2 倘若要變更此份文件的任何規格，請務必事先提出需求。
In case of changes of the specification specified on this document, a written notice is requested in advance.
- 9.3 請勿觸壓葉片或投拋風扇，可能損傷內部軸承。
Please do not touch the impeller with the pressure and never throw the fan. The bearings inside may be damaged.
- 9.4 除了涉及到一些特殊的設計，不擔保產品因引入風扇 HUB 內之粉末、水滴、昆蟲所引起之安全問題或故障。
The products would not come with a guarantee if the safety problems or defects are caused by the introduction of powder, droplets of water or insects into the hub. Some special designs are exceptions.
- 9.5 上述情況為具有代表性的實際案例，並被視為首要參考依據。
All the condition mentioned above are typical example and views as the first reference prior to all other information.
- 9.6 如有任何資料及文件與此份資料不同，此份資料為主要參考。
If there is any data or related documentation different from this data sheet this data sheet is the principal reference.
- 9.7 請勿讓風扇在可燃性的氣體環境下運轉,也不可讓風扇接觸任何液體。
Please do not use the fan in the environment of corrosive gas or liquid or any detrimental gas.
- 9.8 請不要將風扇存放於高溫、低溫、高濕度或多塵環境中，也不宜長期閑置風扇；建議對於儲存超過 6 個月以上的產品，出貨前需做測試。
Please do not store the fan in the environment of high/low temperature, high humidity or dust. Please do not store or idle the fan in long term; suggests performance testing is conducted before shipping , if the fans have been stored over 6 months.
- 9.9 風扇之出入口，應有防止異物或手指進入之安全裝置，也不可企圖觸摸或阻止旋轉中的扇葉。任何阻碍旋轉之情況都可能引起溫度累積而故障。
For safety's reason, finger guard will be need on the inlet and outlet sides of fan. Do not try to touch or hold the impeller from rotating fan. It could make fan overheat and damage.
- 9.10 組裝風扇時，請特別注意勿使扇框變形，不良的風扇組裝可能會引起振動噪音。
During the installation of the fan, please pay substantial attention to prevent the fan twist, it is possible noise cause by resonance vibration.
- 9.11 當搬運或作業時，請不要使用跌落過的產品，將會對葉片的平衡產生影響，所有風扇尤其是滾珠軸承之風扇，應避免掉落地。
It is very important to notify that use dropped products are not suggestion when in any movement or operation, it will impact the balance of blade. All type fans especially ball bearing type should avoided to drop down.

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9.12 將不保證風扇之性能，若風扇使用條件並非依造承認書上所定義之參數操作。

The performance of the products shall be guaranteed if the products operate under the parameter defined in the specification.

9.13 使用風扇時請務必注意，以下操作方式會使風扇產生不良：當施加壓力至扇葉、以拉住引線方式拿取風扇、風扇重力墜落至地上。

Please kindly have an attention that the following application conditions will cause damages,

- The pressure is applied to the impeller.
- The fans are lift by dragging the lead wire.
- The fans are hard-dropped to the floor.

9.14 風扇不適合用在有腐蝕性液體的環境。

Fans are not suitable for the environment where is filled with any corrosive fluids.

9.15 並非所有的風扇都有”鎖定保護”功能。所以，不具此功能的風扇，當風扇的扇葉不再轉動時，就會讓風扇效能失效。

Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.

9.16 測試或使用風扇時，注意安全是很重要的。應使用適當的風扇網，來防止潛在的人身傷害。

Attention to safety is important when testing or using the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.

9.17 除特別說明外，所有的測試條件都是25°C，65%RH 相對（環境）溫度和濕度。測試值僅為風扇性能本身。

Except of specific statement, all tests are carried out at relative(ambient) temperature and humidity conditions of 25°C, 65%RH. The test value is only for fan performance itself.

9.18 當需要使用多個風扇並聯時，為避免造成不穩定的電源，一定要在風扇的外部連接一個“over4.7μF”的電容。

Be certain to connect an “over4.7μF”capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.

9.19 正（+）和負極（-）。

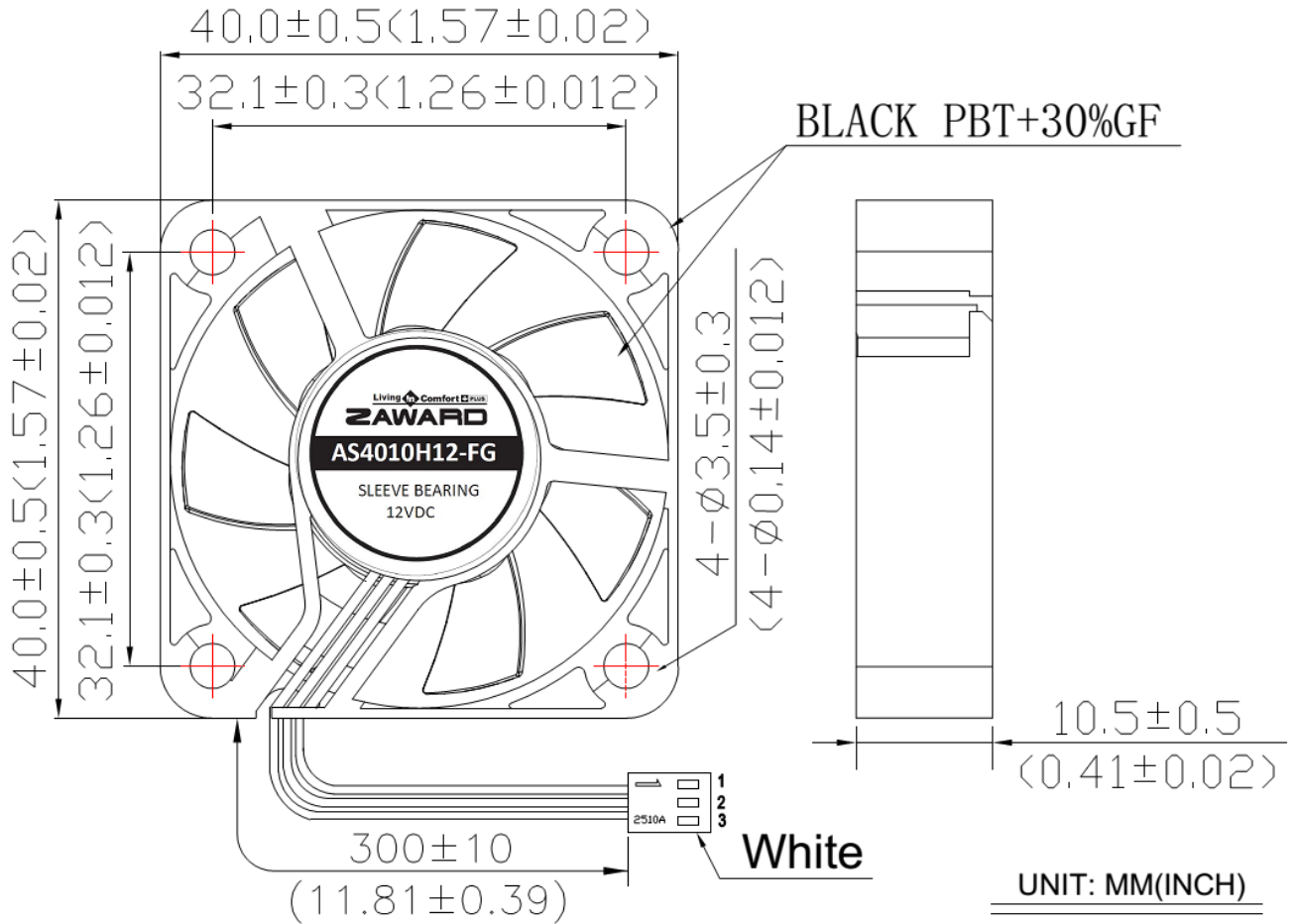
將風扇之正、負極正確地連接至電源是非常重要的。損壞的原因可能是風扇正負極顛倒連接，因為並沒有任何簡易的方法以防止這樣的錯誤。

Positive (+) and Negative (-):

- Connecting the fan to the power source with correct polarity is vital.
- The connection with reverse polarity would cause damages since there is no easy way to prevent such error.



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LEAD WIRE: UL1007 30AWG (2510-3P)

PIN1 BLACK WIRE----(GND)

PIN2 RED WIRE----(VCC)

PIN3 white WIRE----(FG)

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