



# APPROVAL SPECIFICATION

CUSTOMER :  
DESCRIPTION : DC BRUSHLESS FAN  
MODEL : CHA9212DS-S  
DIMENSIONS : 92x92x25 mm  
ISSUE DATE : 2021.11.04  
CUSTOMER PART NO : .....  
APPROVAL DATE : .....  
APPROVED BY : .....  
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			REVISE DATE	

CHENG HOME ELECTRONICS CO., LTD

EVERRICH ELECTRONIC CO., LTD

148. TAI HO RD CHUPEI HSINCHU 30211  
TW R.O.C.

TEL : 886-3-5512579 5553388 5532871

FAX : 886-3-5518389 5532096

E-mail : [Peterlee@chenghome.com.tw](mailto:Peterlee@chenghome.com.tw)

Homepage : <http://www.chenghome.com.tw>

ZHENAN ROAD, 5thIND ZONE SHANG- SHA  
SOUTH DISTRICT, CHANG-AN TOWN,  
DONG-GUAN CITY GUANG DONG CHINA

TEL : 86-769-85325463 85332119 85325453

FAX : 86-769-85547997

E-mail : [Susanmin@everrich.cn](mailto:Susanmin@everrich.cn)



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## 1. SCOPE

THESE SPECIFICATIONS SHALL BE APPLIED TO THE D.C. BRUSHLESS FAN, MODEL CHA9212DS-S MANUFACTURED BY CHENG HOME ELECTRONICS CO., LTD.

### 1.1 STANDARD ENVIRONMENTAL CONDITIONS

Temperature 25°C and relative humidity 60% shall be the standard if no doubt arises in the judgment. However, it is permitted that tests are conducted in the environment of temperature 5~35°C, relative humidity 45 ~ 85%.

## 2. STANDARD OPERATIONAL & ELECTRICAL CHARACTERISTICS

Item	Description	CHA9212DS-S
2.1	Rated and operating voltage VDC	12 (6~13.2)
2.2	Rated current A (Max)	0.26 (Max)
2.3	Rated input W	3.12
2.4	Rated speed (rpm)	3,000 ± 10%
2.5	Start up voltage VDC	≤6V
2.6	Air volume M <sup>3</sup> /Min (CFM)	1.448 (51.13)
2.7	Static pressure Max mmH <sub>2</sub> O (mmH <sub>2</sub> O=9.81Pa)	4.17 (40.88 Pa)
2.8	Noise dB	36.7

### 2.9 Motor function and protection

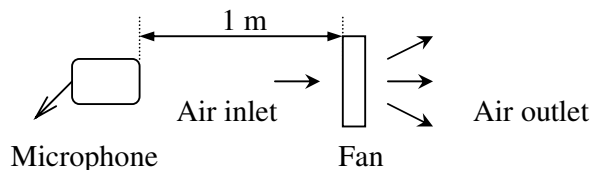
- |                        |                    |                                |
|------------------------|--------------------|--------------------------------|
| 1).Auto Restart        | 2).Soft Start      | 3).Polarity Protection(Yes/No) |
| 4).Hot Plug(Yes/No)    | 5).Signal(FG/RD)   | 6).Water Proof(IP54/IP55/IP67) |
| 7).Temperature Control | 8).Program Control | 9).PWM                         |

2.10 Insulation resistance : At least 10 MΩ at 500VDC between internal stator and both lead wires.

2.11 Dielectric strength : Applied a 500VAC for 1.0 minute or 600VAC for 2 seconds between housing and both lead wires.

Note : A. Air volume measured by a double chamber. The value are recorded when the fan speed is stabilized at rated voltage.

B. Noise is measured from 1 meter from axis of the fan in-take face ( standard db )



C. Characteristics definition : Rated current, speed rated input power shall be measured after 10 minutes continuous operation at rated voltage.

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### 3. MECHANICAL CHARACTERISTICS

- 3.1 Fan size : 92 x 92 x 25 mm
- 3.2 Weight : About 86 g
- 3.3 Bearing : **sleeve bearing**/One ball one sleeve/Ball bearing
- 3.4 Lead wire : UL 1007 AWG26, Rated 300V, 80°C
- 3.5 Frame : P B T. UL94V-0 (Single flange)
- 3.6 Impeller : P B T. UL94V-0
- 3.7 P C B. : UL94V-0
- 3.8 Free drop shock : Free drop to a thick wooden board from 60 cm height in the smallest packing unit by dropping on X,Y and Z faces with no power supply.

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#### 4. ENDURANCE CHARACTERISTICS

- 4.1 Operating temperature : \* - 10 °C ~ + 70 °C  
Conditions : \* Voltage range (6-13.2V)  
\* Relative humidity(45 ~ 85%)
- 4.2 Storage temperature : \*- 40 °C ~ + 70 °C  
Conditions : \* Relative humidity(45 ~ 85%)
- 4.3 Stator impedance : \* It shall have no damage after test.  
\* The fan is restricted for 72 hours.  
\* Relative humidity(45 ~ 85%)
- 4.4 Vibration withstand : It shall be satisfy the specified standards.  
Conditions : \* Cycle : 30 ~ 500Hz ( Vibration acceleration 2G )  
\* Amplitude : 5 ~ 30Hz  
\* Time : 1 minute for each three right angle directions
- 4.5 Shock withstand : It shall be satisfy the specified standards.  
Conditions : \* Peak value : 60G  
\* Normal duration : 11MSEC  
\* Each three right angle directions
- 4.6 Life expectancy : **30,000** Hrs(MTBF) in running conditions at 40°C ambient.  
Conditions : \* Ball bearing the best mounting direction : In any direction.  
\* One ball/one sleeve the best mounting direction : With impeller up.  
\* **Sleeve bearing the best mounting direction : With shaft horizontal. Exception requirement with vertical impeller up utilization please consult our engineer to get the best solution.**
- 4.7 Shelf Life : Please store the fan within 6 months, every 6 months, there shall be a linkage of electric current to the fan, even though the fan is stored in room temperature. The sleeve bearing construction also needs to recheck the lubrication oil contained situation every 6 months to perform the necessary rework process.

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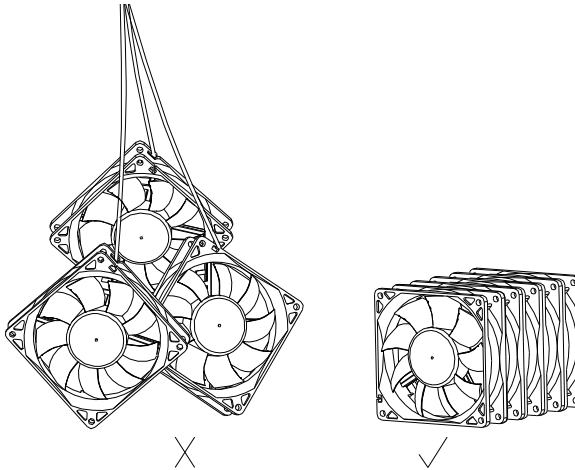
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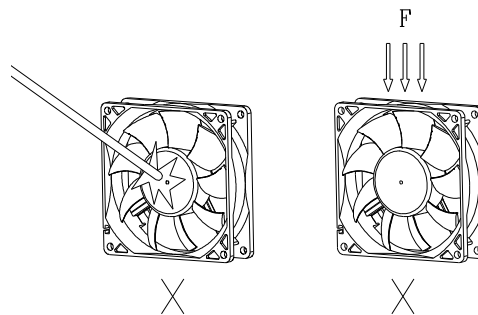
## 5. HOW TO HANDLE FAN PROPERLY

- 5.1 USE SCOPE : Refer to the follow conditions for optional function and life expectancy. Caution is required when handling this machinery, because precise ball bearings are used around in the fan motor, and any bumping of the unit may shorten the working life of the machine; also strange noises may be produced.
- 5.2 STORAGE : In order to achieve a long life, avoid extremely low and high temperatures, and high humidity as these extreme storage conditions could result in poor performance. Please avoid mechanical shock because of composed with precision bearings.

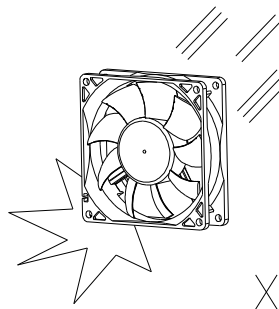
- 5.3 Hold the fan by frame side.  
Donot hold lead wires to support the fan.



- 5.4 No touching or pressing on the impeller hub.  
Avoid crushing the frame side.



- 5.5 Do not drop on the ground.  
Do not pound on the frame side.



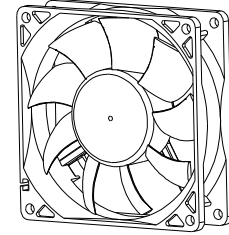
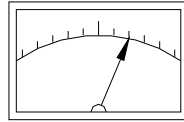
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5.6 Connect leads properly and apply voltage according to specification.

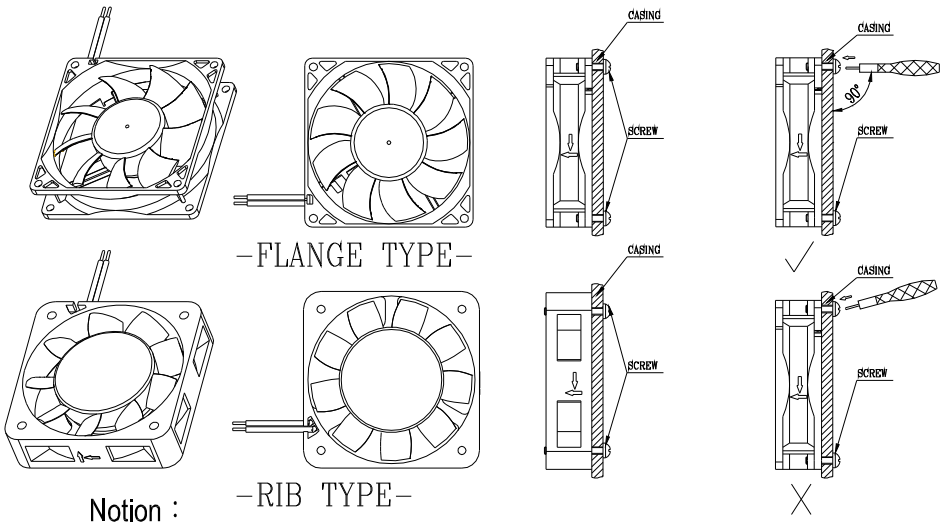


5.7 Lock up screw torsional and right way

CHA9212DS-S

UNITS : KGF.CM

spec	TYPE	
	torsional	
90x90mm(include92#)and above	FLANGE TYPE	5.0
80x80mm(include80#)and below	RIB TYPE	7.5



Notion :

Casing and frame in the lock screw operating, must be good positioning the holes of positive, screw of plumb locking

5.8 Fan suggest in stall way (upright) Don't support installation way





## 6. WARNINGS

- 6.1 If you use fan motor in a location that has considerable dirt or dust, the bearing life may be reduced and the foreign matter may obstruct rotation, therefore avoid installation in these locations.
- 6.2 These products described in this brochure are intended for use of general applications where defects of the products are not critical for injuries and losses of human bodies; for example, office equipments, communication apparatus, measurement equipments, home applications, and etc.
- 6.3 Please don't apply reverse power source to the fan motor, because there is a possibility of damaging the circuit.
- 6.4 Please don't install this fan in series with 2x voltage inputs. For example, if a single fan rated at 12V, then don't install two of them in series with 24V input.
- Note : 1. Material and construction are subject to change without advance notice.  
2. In case defect is found, never disassemble the defective products, but keep the original defective parts and send to us for analysis.

## 7. WARRANTY

CHENG HOME warranties our fans to be free of defects in material and workmanship for **30,000** hours(MTBF) when operated at 40°C and 45 ~ 85% relative humidity of the specified voltage rating.

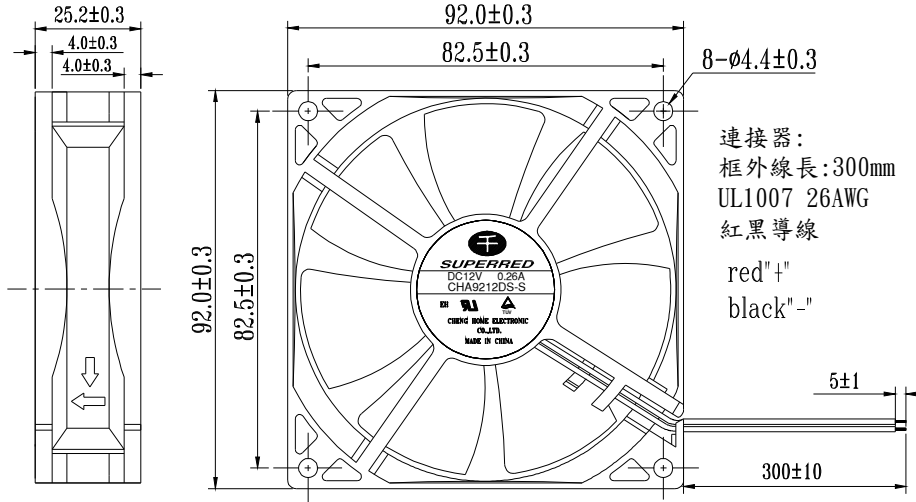
In case of the usage less than the specified life, which was used in a manner specifically approved by CHENG HOME, CHENG HOME will, at our option, replace any defective products at free of charge.

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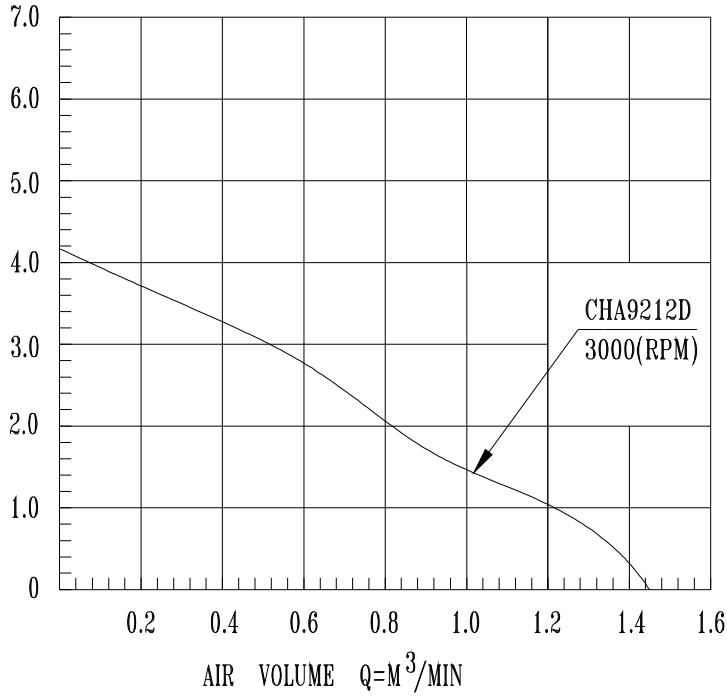


## 8. FAN MOTOR DRAWING

CHA9212DS-S SERIES DIMENSION & PERFORMANCE CURVE  
DIMENSIONS (in mm)



AIR FLOW-AIR PRESSURE (PERFORMANCE CURVES)  
STATIC PRESSURE mm/H<sub>2</sub>O      SPEED RPM



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## 9. DECLARATION OF ROHS

Control declaration of environment-related substances/materials

1. In accordance with the Restriction of Hazardous Substances (ROHS) Directive, CHENG HOME product with P/N:GN models have complied with law and discipline not to employ the forbidden substances, and restrict the allowable concentration of some limited substances deliberately in our components.

No	Substance	Criteria	
1	CFCs & HCFCs (ozone depleting substances)	Forbidden	
2	Chlorinated Organic Solvent	Forbidden	
3	Lead and its compounds	Plastic (Frame, Impeller, wire harness, etc.)	< 100ppm
		Solder	< 1000ppm
		Steel alloy	< 3500ppm
		Aluminium alloy	< 4000ppm
		Copper alloy	< 4wt%
4	Cadmium and its compounds	Solder	< 20ppm
		Parts composed of metals containing zinc (e.g. brass, zinc for die casting)	< 100ppm
		Plastic	< 5ppm
5	PBBs and PBDEs	Forbidden	
6	PCB and PCT	Forbidden	
7	CP, Short-chain Chlorinated paraffins C10-13, C1 ≥ 48 wt%	Forbidden	
8	Mirex	Forbidden	
9	PCN	Forbidden	
10	Hexavalent Chromium compounds	< 100ppm	
11	Mercury and its compounds	Forbidden	
12	Asbestos	Forbidden	
13	Organic Tin compounds	Forbidden	
14	Azo compounds	Forbidden	
15	TBBP-A in external case plastic parts of products (PCB is exempted)	< 1000ppm	
16	Nickel in external case parts, which are likely to result in prolonged skin exposure	< 1000ppm	

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