



# JARO THERMAL

## SPECIFICATION FOR APPROVAL

Customer
Description
Part No. _____
Model No. <u>JFD0300703MF0A01(001)</u> REV. <u>0</u>
Sample Issue No.
Sample Issue Date

PLEASE SEND ONE COPY OF THIS SPECIFICATION BACK AFTER YOU SIGNED APPROVAL FOR PRODUCTION PRE-ARRANGMENT.

PREPARED BY :	Adam Hung	DATE :	06/01/2012
CHECKED BY :	Jay Su	DATE :	06/01/2012
APPROVED BY :	Claire Wang	DATE :	06/01/2012

Jaro Thermal USA offices  
6600 Park of Commerce Blvd.  
Boca Raton, Florida 33487  
[www.jarothermal.com](http://www.jarothermal.com)  
Ph: 561-241-6700  
Fx: 561-241-3328

Jaro Thermal Taiwan offices  
No. 22, De Min Rd., Nanzi District,  
Kaohsiung 81157  
[www.jarothermal.com](http://www.jarothermal.com)  
Ph: +886-7366-1120  
Fx: +886-7364-4000

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# SPECIFICATION

JARO MODEL: JFD0300703MF0A01(001)

## Revision of Spec History

Revision	CHANGES	DATE	BY
Original Issue		06/01/2012	Adam Hung
Revision A			
Revision B			
Revision C			

### Notice:

1. This specification will be changed base on Jaro Thermal 's notification. Pls refer to update revision of spec by contacting Jaro Thermal.
2. This specification clarify all the mechanical & electrical characteristics of DC brushless fans & AC brushless fans.
3. The specification of this product is described in detailed document. Pls do not use the fan without proper usage. Pls contact Jaro Thermal if you have special requirement which is not listed on this specification.
4. Any of change, pls contact Jaro Thermal to change the new revision in order to make sure all technical data is up to date. Any ECN change will be followed by sending new update spec.



# SPECIFICATION



<b>Jaro Model</b>	: JFD0300703MF0A01(001)
<b>Samples attached</b>	: pcs
<b>Safety Approval</b>	: CE
<b>Description</b>	
<b>DIMENSIONS</b>	: 30 x 30 x 7.5 mm
<b>BEARING TYPE</b>	: FDB
<b>MOTOR PROTECTION</b>	: BY IMPEDANCE
<b>RATED VOLTAGE</b>	: 3.3 VDC
<b>OPERATING VOLTAGE</b>	: 2.5 VDC – 6.0 VDC
<b>START-UP VOLTAGE</b>	: 2.5 VDC , NORMAL
<b>REAL CURRENT</b>	: 0.04 Amp
<b>REAL POWER</b>	: 0.14 Watt
<b>RATED CURRENT</b>	: 0.07 Amp + 10 %MAX
<b>RATED POWER</b>	: 0.23 Watt
<b>RATED SPEED</b>	: 4200 RPM ± 15 %
	(IN FREE AIR AT RATED VOLTAGE)
<b>AIR FLOW</b>	: 1.87 CFM (min.: 1.589 CFM)
<b>AIR FLOW</b>	: 0.052 CMM (min.: 0.044 CMM)
	(IN FREE AIR AT RATED VOLTAGE)
<b>STATIC AIR PRESSURE</b>	: 0.034 Inch H <sub>2</sub> O (min.: 0.024 Inch H <sub>2</sub> O)
<b>STATIC AIR PRESSURE</b>	: 0.88 mm H <sub>2</sub> O (min.: 0.635 mm H <sub>2</sub> O)
	(IN FREE AIR AT RATED VOLTAGE)
<b>NOISE LEVEL</b>	: 17.9 dB (A) (max.: 21.9 dB(A))
<b>LIFE EXPECTANCY</b>	: 70000 Hours at 40°C / 65%
<b>NET WEIGHT</b>	: 4.5 Gram.
<b>PACKING</b>	: pcs. Per Export Carton.



The standard of Jaro Thermal's fan relative humidity is 65%, and the temperature is 25°C for the standard testing. If you have any question, pls refer to environmental condition on 5-0 first. Other special request pls contact Jaro Thermal for spec checking.



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## 1-0 MATERIAL

1-1 Frame Material - UL94V-0 Glass Filled polyester (P.B.T)

1-2 Fan Blade Material - UL94V-0 Glass Filled polyester (P.B.T)

1-3 Other material – See 8.0 Dimension Drawing

1-4 Environmental Standard

[ V ] ROHS

[ ] Reach

[ ] Halogen Free

## 2-0 FAN VOLTAGE CURRENT, LOCK ROTOR, AIR FLOW, STATIC PRESSURE & NOISE DEFINITION

2-1 Start Voltage - By sudden switching ON fan is start to rotate.

2-2 Input Power - Input Power shall be measured after 3 minutes for continuing rotation by rated voltage.

2-3 Rated Current - Rated Current shall be measured after 3 minutes by continuing rotation by rated voltage.

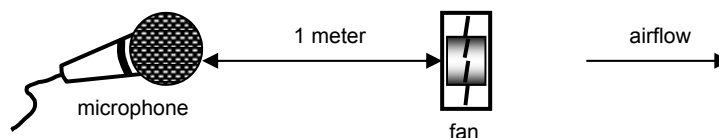
2-4 Rated Speed - Rated Speed shall be measured after 3 minutes for continuing rotation by rated voltage.

2-5 Locked Rotor Current : Locked current shall be measured within one minute of rotor locked, after 3 minutes by continuing rotation at rated voltage in clean air.

2-6 Air Flow & Static Pressure : The air flow data and static pressures should be determined in accordance with AMCA-210 standard or DIN24163 specification in chamber testing and record the test record.

2-7 Noise Level : The measurement of noise level is carried out with reference to CNS8753 in an anechoic chamber with the microphone positioned 1 meter from the air intake. Testing fan shall be hung in clean air .

### Noise Level Measure





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## 3-0 FAN FUNCTION DEFINITION

**3-1** Rotation Direction - Counterclockwise from impeller side.

**3-2** Lock Rotor Condition

No damage for winding or electronic in locked rotor condition. And no damage after 72hrs continuing for lock rotor condition.

**3-3** Auto Restart

Fan will automatic restart without any abnormal usage.

**3-4** Dead Angle

Switch the fan change from off to on condition. Restart the fan, it will automatic restart by fan power on.

**3-5** Polarity

Check the voltage and polarity before turn on the power to the fan.

**3-6** Insulation Resistance

Do not use < 10M ohm between housing and positive end of lead wire (red) at 500V DC.

**3-7** Dielectric Strength

No damage should be found at 500 VAC for 60 seconds, measured with 1mA trip current between housing and positive end of lead wire.

## 4-0 FAN PACKAGE TEST

**4-1** Free Drop Shock

Base on Jaro Thermal's standard package, the fan package will test and drops on any three faces - Test standard is 30cm height. The base is wood board for 10mm thick.

## 5-0 FAN ENVIRONMENTAL CONDITION

**5-1** Operating Temperature / Humidity

-10°C to +70°C at humidity 65%+/-20% Relative humidity.

**5-2** Humidity

After 96 hours, 95% RH, 40+/-2°C per MIL-STD-202F, method 103B humidity test, the measured data on insulation resistance and dielectric strength shall meet the specification.

**5-3** Storage Temperature

All function shall be normal after 500 hours storage at -40°C to +70 °C with a 24 hour recovery 25°C. Do not use the fan over 500hrs over -40 °C or over +70 °C. Pls contact Jaro Thermal if fans are sotrage over this period.

**5-4** Do not place or store the fan in the environment with high/low temperature/humidity. Do not store the fan for over 6 months; even if the fan is stored in room temperature for over 6 months, the fan may have the electric current leakage.



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**5-5** Improper way to disassemble fan will cause the fan get into dust or dip into water. Which will in defects is not covered in the warranty. Do not use the fan in the environment with corrosive air or liquid.

## **6-0 MASS PRODUCTION SAMPLE PLAN INSPECTION**

All fans shall meet the quality inspection under MIL-STD-105E standard list as follow:

Critical 0.25%

Major 1.00%

Minor 2.50%

## **7-0 FAN USAGE IN CAUTION**

**7-1** Please do not stick a grease and/or an oil to the fan housing or blade which may have a harmful influence by a chemical reaction at high humidity.

**7-2** If the fan is reinstalled, please pay special attention to the noise due to the vibration (or resonance).

**7-3** During the testing of the fan, please make sure the finger guard is use for your safety.

**7-4** While the fan is running, pls do not lock the fan intentially for a long time in order not to get the fan motor overheating by the long period locking status. This action will damage the fan.

**7-5** Please do not touch and push Fan Blade with fingers or others, fan blade and ball bearings may be damaged and it causes noise defect.

**7-6** Do not carry the fan by its lead wires.

**7-7** If the fan does not have the polarity protection function, the connection of the colored wires should be red + red, and black + black, or else the fan will be damaged in no time.

**7-8** For the models without reverse connection of polarity protection, please do not connect the lead wire in reverse position.

**7-9** 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.

**7-10** Every specific fan is designed for its certain application (project). Therefore, if you want to use this fan in other application (project), please inform JARO first so that we can confirm whether there is any issue which might be incurred from the reason of this different application (project) or not.



# DIMENSION DRAWING

JARO MODEL: JFD0300703MF0A01(001)

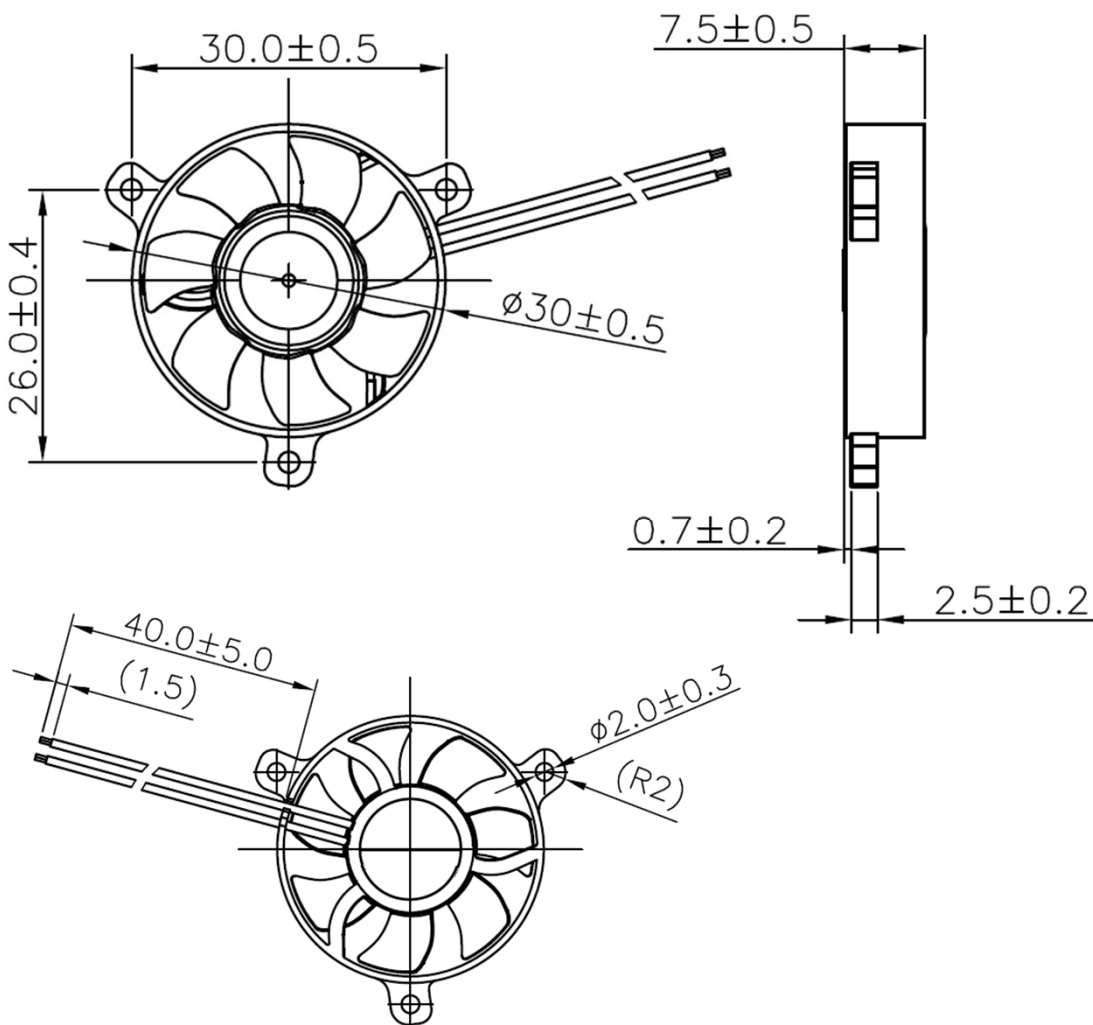
## 8-0 DIMENSIONS

All dimensions, Direction of rotation and air flow were specified as per drawing attached.

### Description: DC Fan with:

Lead Wire UL1061 28AWG , 40mm +/- 5mm lead length

Red = Positive ; Black = Negative



**DIAGRAM OF DIMENSIONS: Dimensions in millimeters  
NOT TO SCALE. ALL COMPONENTS MUST BE ROHS COMPLIANT.**

**Drawing Note: N/A  
Safety : CE**

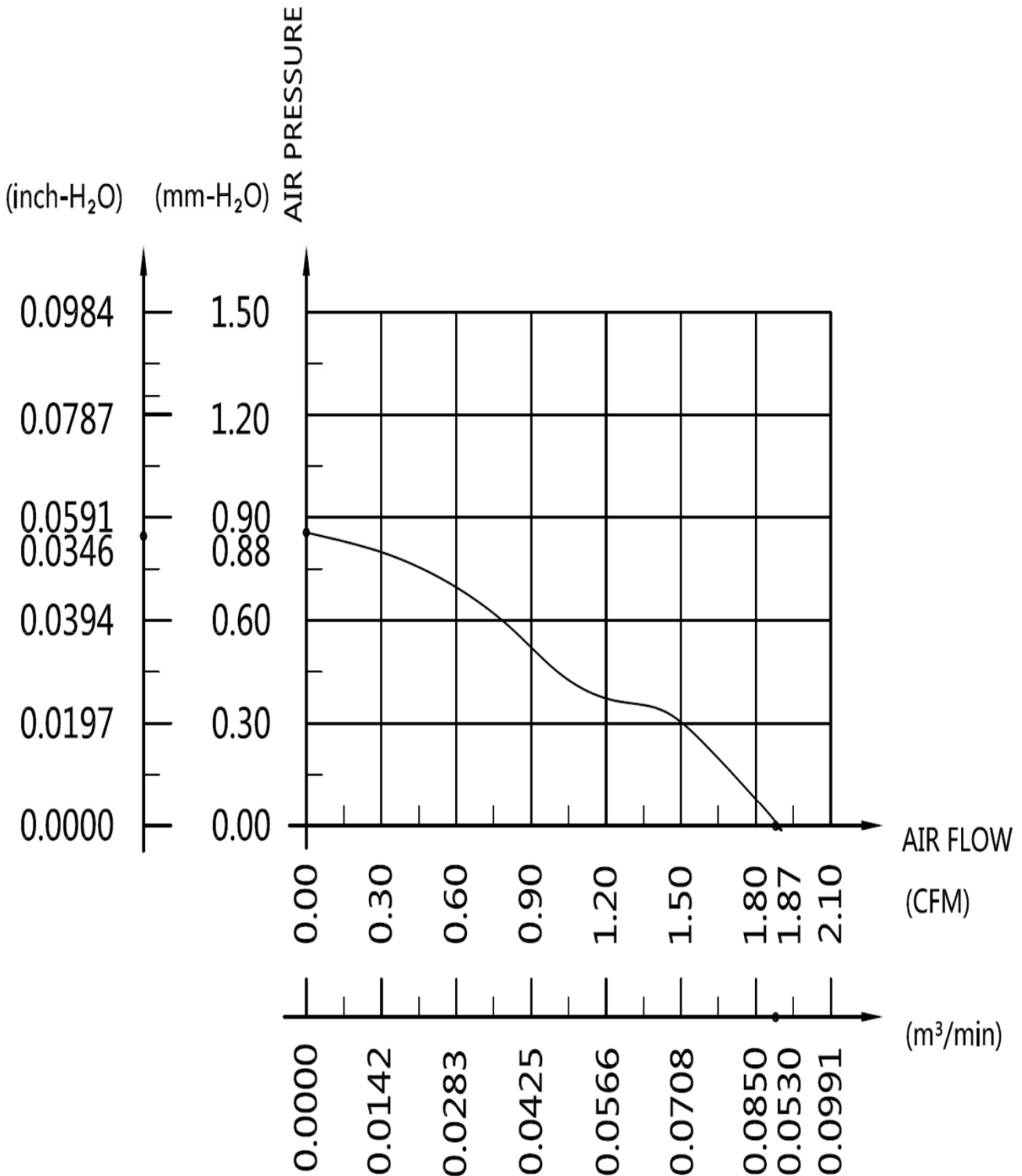




# PERFORMANCE CURVE

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## 9-0 Performance Curve







# LIFE DATA

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## 10-0 LIFE EXPENTANCY

The continuing fan duty life at given temperature after which, 90% of testing units shall still be rotating.

