



## SPECIFICATION FOR APPROVAL

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**Customer** \_\_\_\_\_

**Description** DC FAN

**Part No.** \_\_\_\_\_ **Rev.** \_\_\_\_\_

**Delta Model No.** AFB1224HHE-T6M3 **Rev.** 00

**Sample Issue No.** \_\_\_\_\_

**Sample Issue Date.** MAR 21'2006

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

APPROVED BY : \_\_\_\_\_

DATE : \_\_\_\_\_

**DELTA ELECTRONICS (THAILAND) PUBLIC COMPANY LIMITED.**  
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DEL-0776A4

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Customer: \_\_\_\_\_

Description: DC FAN

Customer P/N: \_\_\_\_\_ REV: \_\_\_\_\_

Delta Model NO.: AFB1224HHE-T6M3

Sample Rev: 00 Issue NO: \_\_\_\_\_

Sample Issue Date: MAR 21'2006 Quantity: \_\_\_\_\_

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH TWO PHASES AND FOUR POLES.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	24 VDC
OPERATION VOLTAGE	7.0 - 27.6 VDC
INPUT CURRENT	0.30 (MAX. 0.45) A
INPUT POWER	7.20 (MAX. 10.80) W
SPEED	2900 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	3.400 (MIN. 3.130 ) M <sup>3</sup> /MIN. 120.07 (MIN. 110.53) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	9.00 (MIN. 7.62 ) mmH <sub>2</sub> O 0.354 (MIN. 0.300) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	44.0 (MAX. 47.0) dB-A
INSULATION TYPE	UL: CLASS A

(continued)

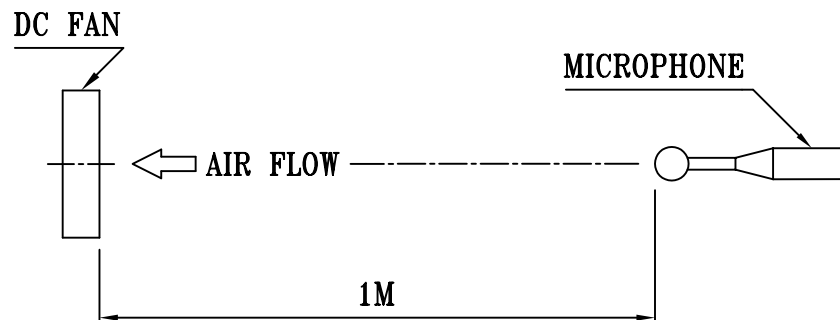
PART NO:

DELTA MODEL:

AFB1224HHE-T6M3

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR
LEAD WIRE	UL 1007 -F- AWG #24 BLACK WIRE NEGATIVE(-) RED WIRE POSITIVE(+)

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.  
2. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.  
3. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.



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PART NO:  
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DELTA MODEL:                      AFB1224HHE-T6M3  
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8. BASIC RELIABILITY REQUIREMENT:

8-1. THERMAL      LOW TEMPERATURE: -40°C  
CYCLING          HIGH TEMPERATURE: +80°C  
                    SOAK TIME: 30 MINUTES  
                    TRANSITION TIME < 5 MINUTES  
                    DUTY CYCLES: 5

8-2. HUMIDITY      TEMPERATURE: +25°C ~ +65°C  
EXPOSURE          HUMIDITY: 90-98% RH @ +65°C  
                                FOR 4 HOURS/CYCLE  
                    POWER: NON-OPERATING  
                    TEST TIME: 168 HOURS

8-3. VIBRATION      TEMPERATURE: +25°C  
                                ORIENTATION: X, Y, Z  
                                POWER: NON-OPERATING  
                                VIBRATION LEVEL: OVERALL gRMS=3.2

FREQUENCY(Hz)	PSD(G <sup>2</sup> /Hz)
10	0.040
20	0.100
40	0.100
800	0.002
1000	0.002

TEST TIME: 2 HOURS ON EACH ORIENTATION

8-4. MECHANICAL      TEMPERATURE: +20°C  
SHOCK                  ORIENTATION: X, Y, Z  
                                POWER: NON-OPERATING  
                                ACCELERATION: 20 G MIN.  
                                PULSE: 11 ms HALF-SINE WAVE  
                                NUMBER OF SHOCKS: 5 SHOCKS  
    FOR EACH DIRECTION

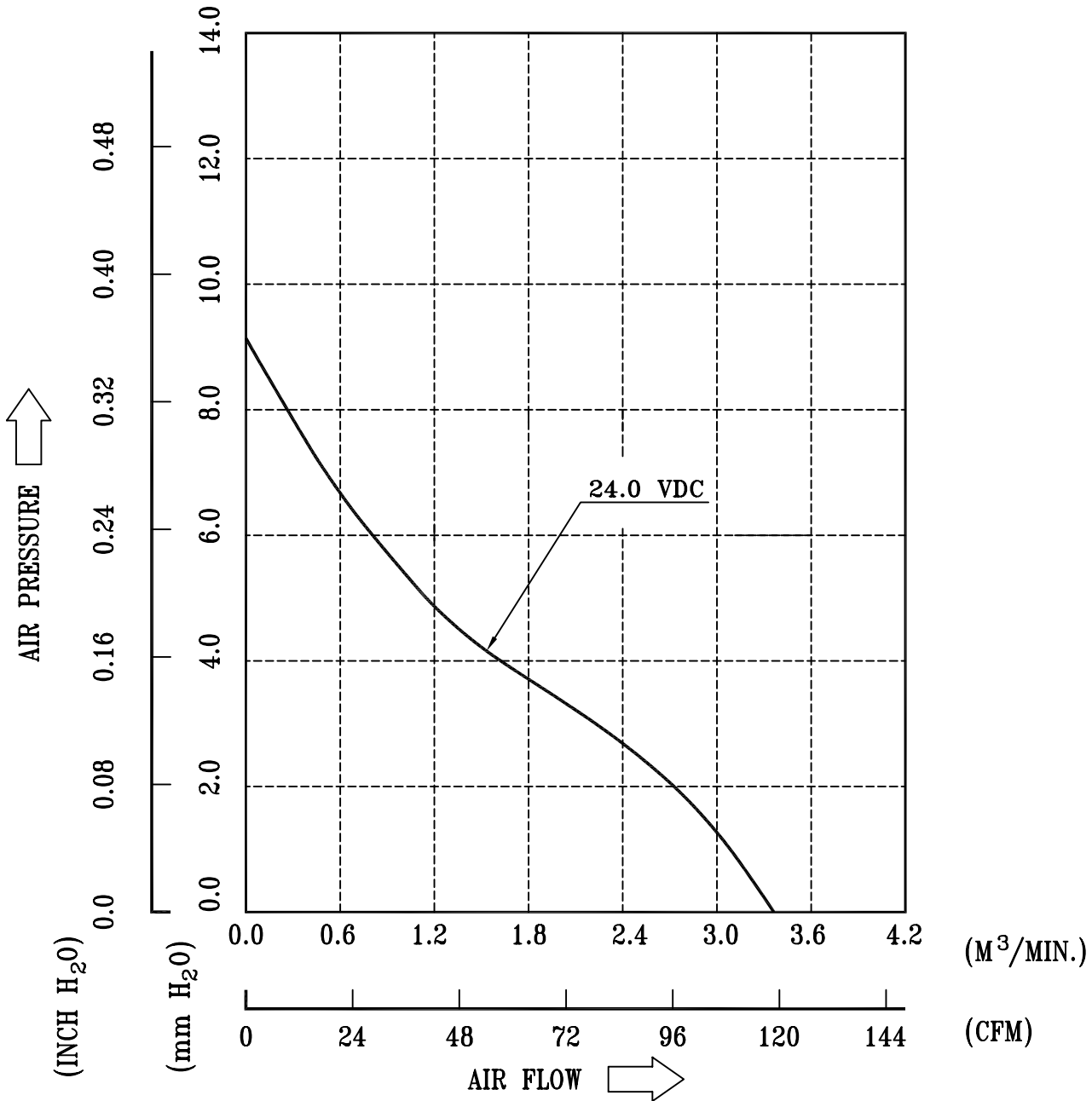
8-5. LIFE                  TEMPERATURE: MAX , OPERATING TEMPERATURE  
                                POWER: OPERATING  
                                DURATION: 1000 HOURS MIN.

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9. P & Q CURVE:



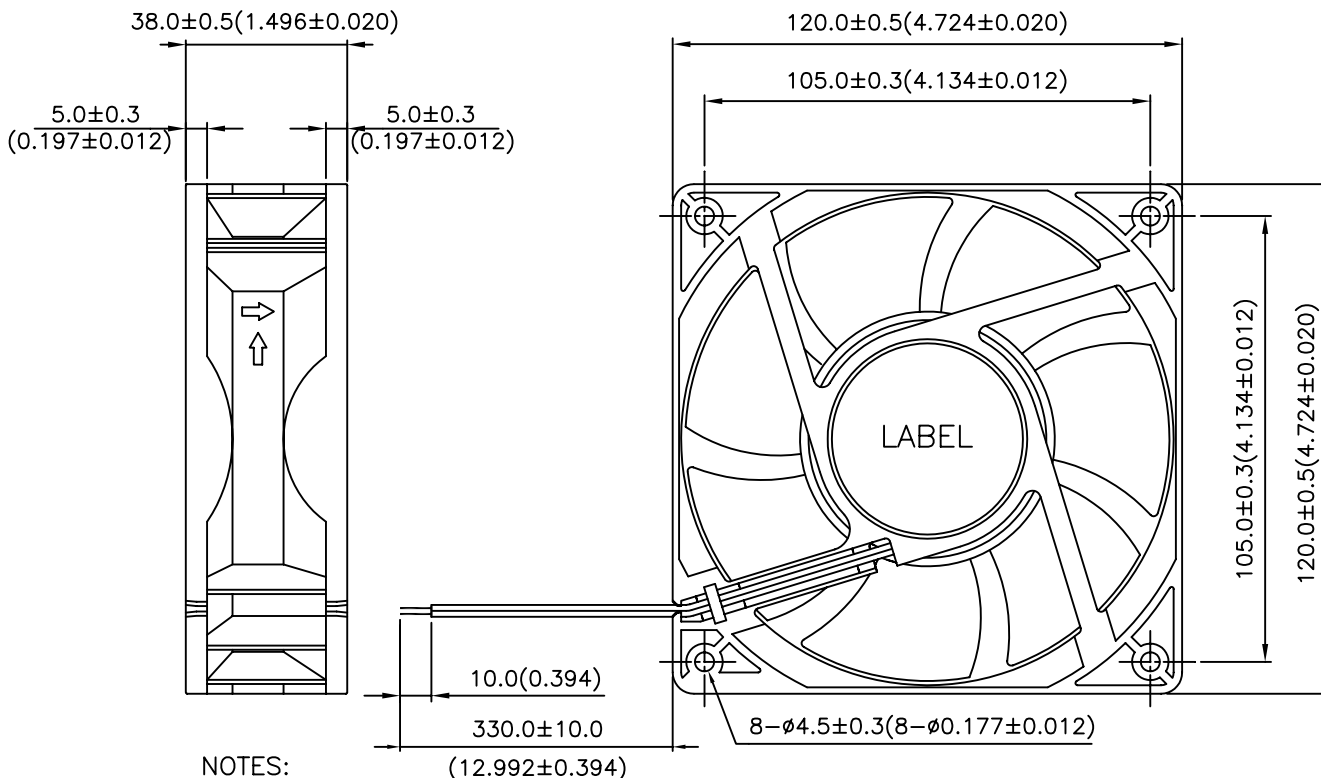
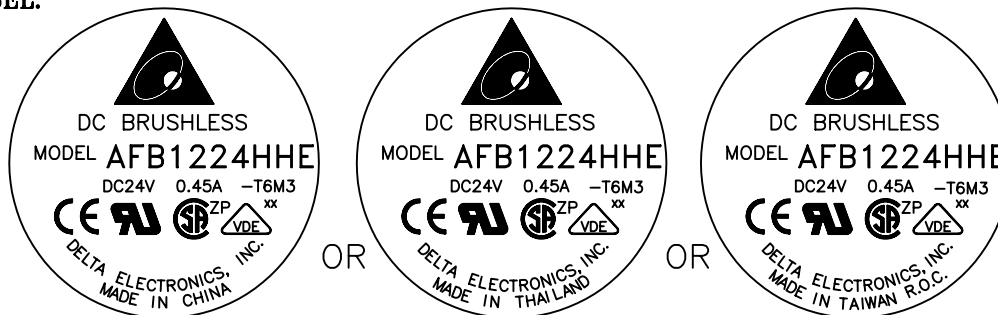
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

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10. DIMENSION DRAWING:

LABEL:



NOTES:

1. WIRE: UL1007 AWG#24  
RED WIRE-----(+)  
BLACK WIRE-----(-)
2. FOR IP55 TESTING, THE MOTOR(PWB+WINDING ASSY)  
MUST COATED BY PARYLENE WITH THICKNESS 0.005mm. (REF.)  
(PARYLENE DELTA P/N: 4020158300)
3. THIS PRODUCT IS RoHS COMPLIANT

UNIT: mm(INCH)

A00



## **Descriptions:**

- 1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.**
- 2. A written request should be submitted to Delta prior to approval if deviation from this specification is required.**
- 3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fans are hard-dropped to the production floor.**
- 4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.**
- 5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.**
- 6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, as there is no foolproof method to protect against such error.**
- 7. Delta fans are not suitable where any corrosive fluids are introduced to their environment.**
- 8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.**
- 9. 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.**
- 10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.**
- 11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.**
- 12. Except where specifically stated, all tests are carried out at relative (ambient) temperature and humidity conditions of 25°C, 65%. The test value is only for fan performance itself.**
- 13. Be certain to connect an “over 4.7µF” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**