

Customer		
Description	DC FAN	
Part No.		Rev
Delta Model No.	PFB0924DHE-T500	Rev. <u>00</u>
Sample Issue No. Sample Issue		
Date.	Jan 21, 10	

	E COPY OF THIS SPECIFICATION SIGNED APPROVAL FOR PRODUC-MENT.
APPROVED BY	:
DATE	ŧ

## DELTA ELECTRONICS (THAILAND) PUBLIC COMPANY LIMITED.

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CHACHEONGSAO 24180 THAILAND.

# SPECIFICATION FOR APPROVAL

customer:			
Description:	DC FAN		
Customer P/N:		REV:	
Delta Model NO.:	PFB0924DHE-T500		
Sample Rev:	00	Issue N0:	
Sample Issue Date	:: Jan 21, 10	Quantity:	

#### 1. SCOPE:

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

#### 2. CHARACTERS:

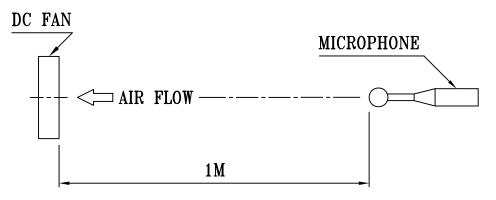
ITEM	DESCRIPTION
RATED VOLTAGE	24 VDC
OPERATION VOLTAGE	14.0 - 26.4 VDC
INPUT CURRENT	1.45 ( 1.74 MAX.) A
INPUT POWER	34.80 ( 41.76 MAX. ) W
SPEED	8000±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	4.957 ( MIN. 4.461) M <sup>3</sup> /MIN 175.03( MIN. 157.52) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	46.21 ( MIN. 37.43 )mmH <sub>2</sub> 0 1.819 ( MIN. 1.473)inchH <sub>2</sub> 0
ACOUSTICAL NOISE (AVG.)	66.5 (MAX 71.5) dB-A
INSULATION TYPE	UL: CLASS A

(continued)

PART NO:	
DELTA MODEL: PFB0924DHE-T500	
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	50,000 HOURS CONTINOUS OPERATION

AT 40 °C WITH 15  $\sim$  65 %RH. **CLOCKWISE VIEW** ROTATION FROM NAME PLATE SIDE THE CURRENT WILL SHUT DOWN, OVER CURRENT SHUT DOWN WHEN LOCKING ROTOR. UL 1007 -F- AWG #24 BLACK WIRE NEGATIVE(-) LEAD WIRE 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 N		
DELTA I	MODEL: PFR0924DHE-T500	
3. MECI	HANICAL:	
3-1.	DIMENSIONS	SEE DIMENSIONS DRAWING
3-2.	FRAME	PLASTIC UL: 94V-0
3-3.	IMPELLER	PLASTIC UL: 94V-0
3-4.	BEARING SYSTEM	TWO BALL BEARINGS
3-5.	WEIGHT	250 GRAMS
3-6.	INGRESS PROTECTION	IP55
4. ENVI	RONMENTAL:	
4-1.	OPERATING TEMPERATURE	————— -10 TO +60 DEGREE C
4-2.	STORAGE TEMPERATURE — — — —	40 TO +70 DEGREE C
4-3.	OPERATING HUMIDITY $$	5 TO 90 % RH
4-4.	STORAGE HUMIDITY	5 TO 95 % RH
5. PRO	TECTION:	
5-1.	LOCKED ROTOR PROTECTION	
	IMPEDANCE OF MOTOR WINDING PROHOURS OF LOCKED ROTOR CONDITION	
5-2.	POLARITY PROTECTION	

BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND NEGATIVE LEADS.

### 6. RE OZONE DEPLETING SUBSTANCES:

6-1. NO CONTAINING PBBs, PBB0s, CFCs, PBBEs, PBDPEs AND HCFCs.

### 7. PRODUCTION LOCATION

7-1. PRODUCTS WILL BE PRODUCED IN CHINA OR THAILAND OR TAIWAN.

PART NO:			
DELTA MODEL:	PFB0924DHE-T500		

#### 8. BASIC RELIABILITY REQUIREMENT:

8-1.	THERMAL	LOW	<b>TEMPERATURE</b>	: −40°C
	CYCLING	HIGH	TEMPERATUR	E: +80°C
		SOAK	TIME: 30 MI	NUTES

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^2/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

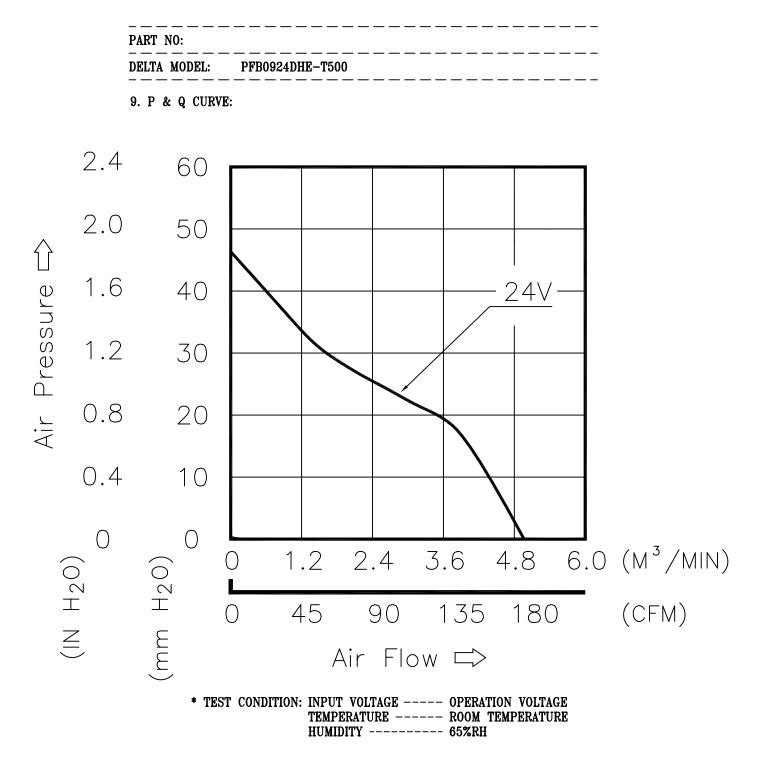
FOR EACH DIRECTION

8-5. LIFE TEMPERATURE: MAX, OPERATING TEMPERATURE

POWER: OPERATING

DURATION: 1000 HOURS MIN.

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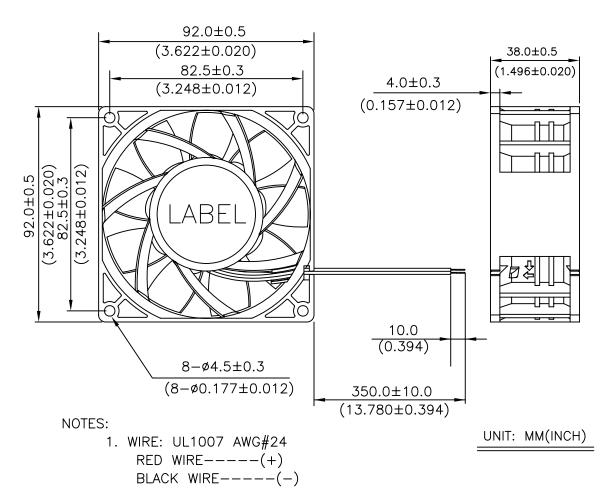
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PART NO:
DELTA MODEL: PFB0924DHE-T500

10. Attach: DIMENSIONS DRAWING

LABEL:





- 2. FOR IP55 PROTECTION, THE MOTOR(PWB+WINDING ASSY) MUST COATED BY PARYLENE WITH THICKNESS 0.005mm. (REF.) DELTA P/N 4020158300
- 3. THIS PRODUCT IS ROHS COMPLIANT

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## **Application Notice**

- 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 fan was 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, if there is no foolproof method to protect against such error specifically mentioned in this spec.
- 7. Delta fans without special protection 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 room (ambient) temperature and relative humidity conditions of 25°C, 65% RH. The test value is only for fan performance itself.
- 13. Be certain to connect an "4.7μF or greater" capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.

Doc. No: FMBG-ES Form 001 Rev. 01 Date: June 24, 2009