



SPECIFICATION FOR APPROVAL

Customer. STD

Description. EST FAN (Energy Saving Technology Fan)

Part No. \_\_\_\_\_ REV. \_\_\_\_\_

Delta Model No. AFL2212LW-00GYQ REV. 01

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

Sample Issue Date. ONV.09 2020

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

APPROVED BY:

DATE :

DELTA ELECTRONICS, INC.  
TAOYUAN PLANT  
252, SHANG YING ROAD, KUEI SAN INDUSTRIAL ZONE TAOYUAN  
SHIEN, TAIWAN, R.O.C.  
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**STATEMENT OF DEVIATION**  
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<input checked="" type="checkbox"/> NONE
<input type="checkbox"/> DESCRIPTION :

DELTA ELECTRONICS, INC.  
 252, SHANG YING ROAD, KUEI SAN  
 TAOYUAN PLANT 333, TAIWAN, R. O. C.

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SPECIFICATION FOR APPROVAL  
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Customer: STD

Description: EST FAN (Energy Saving Technology Fan)

Customer P/N:

REV:

Delta Model NO.: AFL2212LW-00GYQ

Delta Safety Model No:

Sample Rev: 01

Issue NO:

Sample Issue Date: NOV.09 2020

Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE AC TO DC BRUSHLESS AXIAL FLOW FAN.

2. CHARACTERS:

UNLESS SPECIFIED, ALL READINGS AND TESTS ARE BASED ON 25°C, 65% RH.

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	10.8 - 13.2 VDC
MIN. START VOLTAGE	10.8 VDC
RATED CURRENT (AVG.) @1400RPM (AT FREE AIR)	0.4 (MAX. 0.6) A
RATED POWER (AVG.) @1400RPM (AT FREE AIR)	4.8 (MAX. 7.2) W
RATED SPEED (MAX.)	1400 R.P.M.
SPEED RANGE	600 - 1400 R.P.M.
MAX. AIR FLOW @1400RPM (AT ZERO STATIC PRESSURE)	4.82 M <sup>3</sup> /MIN. (TYP.) 170.1 CFM (TYP.)
MAX. AIR PRESSURE @1400RPM (AT FREE AIR)	4.46 mmH <sub>2</sub> O (TYP.) 0.18 inchH <sub>2</sub> O (TYP.)
ACOUSTICAL NOISE @1400RPM (1M)	40.0 (MAX. 44.0) dB(A)
ACOUSTICAL NOISE @1000RPM (1M)	30.0 (MAX. 34.0) dB(A)
ACOUSTICAL NOISE @600RPM (1M)	20.0 (MAX. 24.0) dB(A)

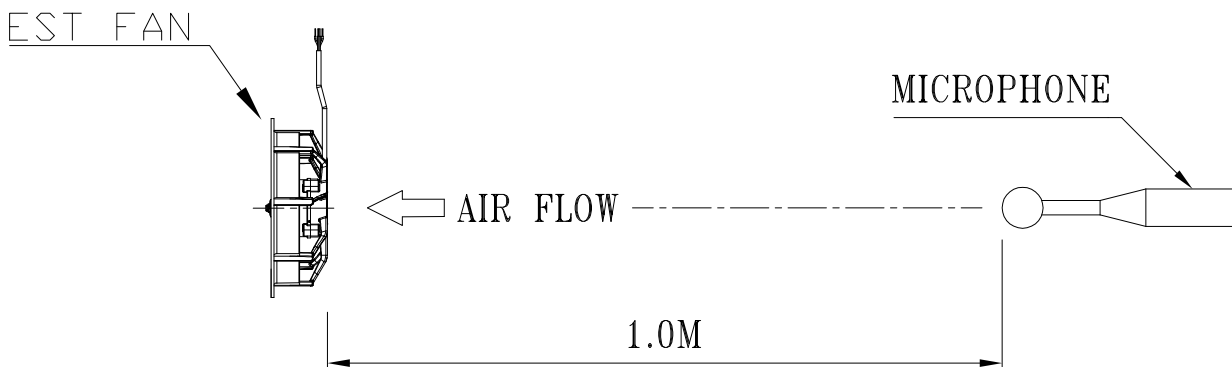
(continued)

PART NO:

DELTA MODEL: AFL2212LW-00GYQ

INSULATION TYPE	UL: CLASS B
INSULATION STRENGTH	10 MEGA OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE

- NOTES:
1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
  2. STANDARD AIR PROPERTY IS AIR AT (Td) 25°C TEMPERATURE, (RH) 65% RELATIVE HUMIDITY, AND (Pb) 760 mmHg BAROMETRIC PRESSURE.
  3. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.
  4. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN SEMI-ANECHOIC CHAMBER WITH MICROPHONE AT A DISTANCE OF 1.0M FROM THE FAN INTAKE.

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PART NO:  
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DELTA MODEL: AFL2212LW-00GYQ  
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3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. FRAME ----- PLASTIC UL: 94V-1 OR 94V-0
- 3-3. IMPELLER ----- PLASTIC UL: 94V-1 OR 94V-0
- 3-4. BEARING SYSTEM ----- 2 BALL BEARING
- 3-5. WEIGHT ----- 0.8 KILOGRAMS (REF.)
- 3-6. INGRESS PROTECTION LEVEL ----- IP-56

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -40 <sup>△1</sup> TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +85 DEGREE C
- 4-3. OPERATING HUMIDITY ----- 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY ----- 5 TO 95 % RH

5. PROTECTION:

- 5-1. LOCKED ROTOR PROTECTION
- 5-2. OVER CURRENT PROTECTION

6. RE OZONE DEPLETING SUBSTANCES:

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

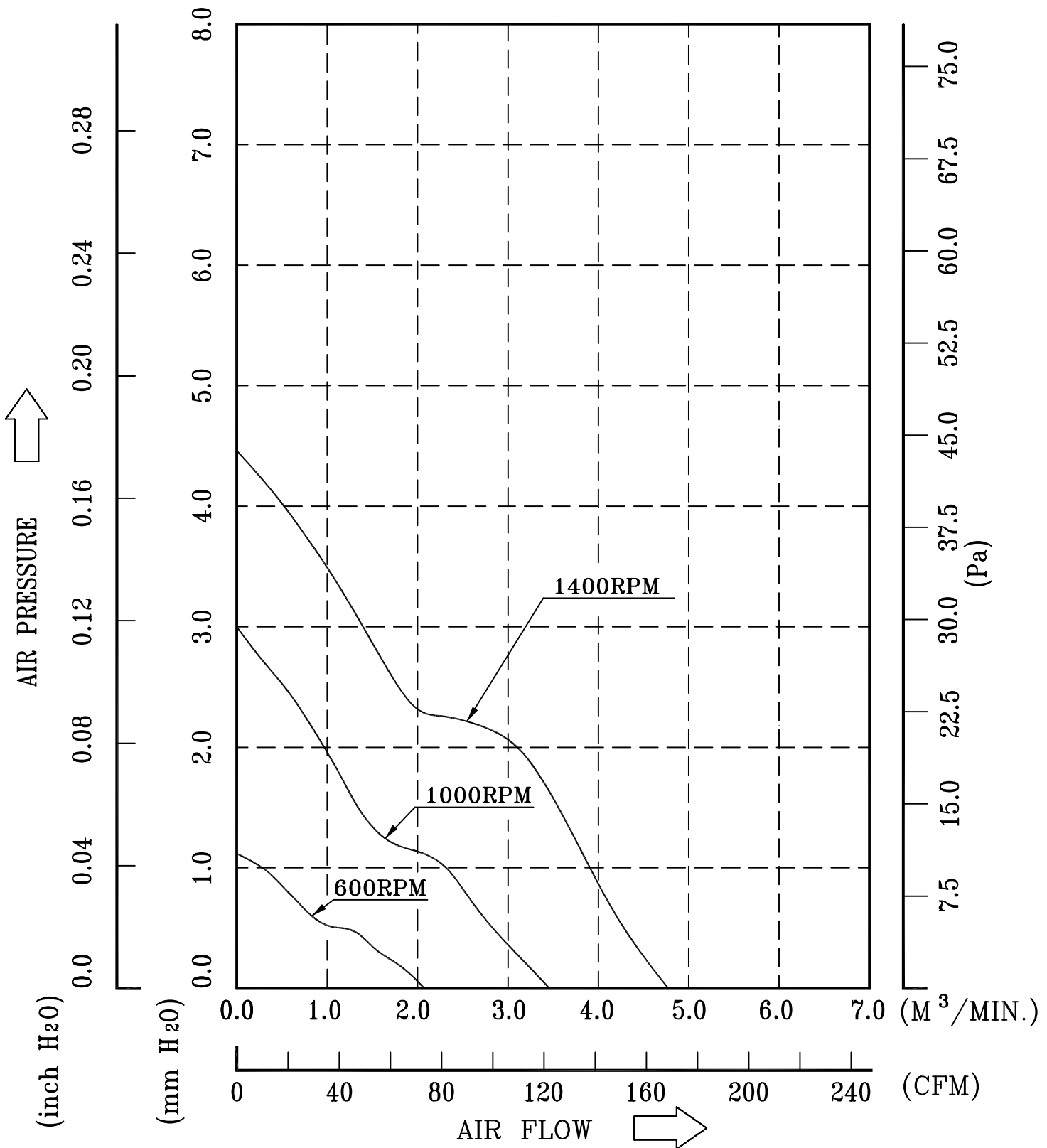
7. PRODUCTION LOCATION

- 7-1. PRODUCTS WILL BE PRODUCED IN CHINA.

PART NO:

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8. P & Q CURVE:

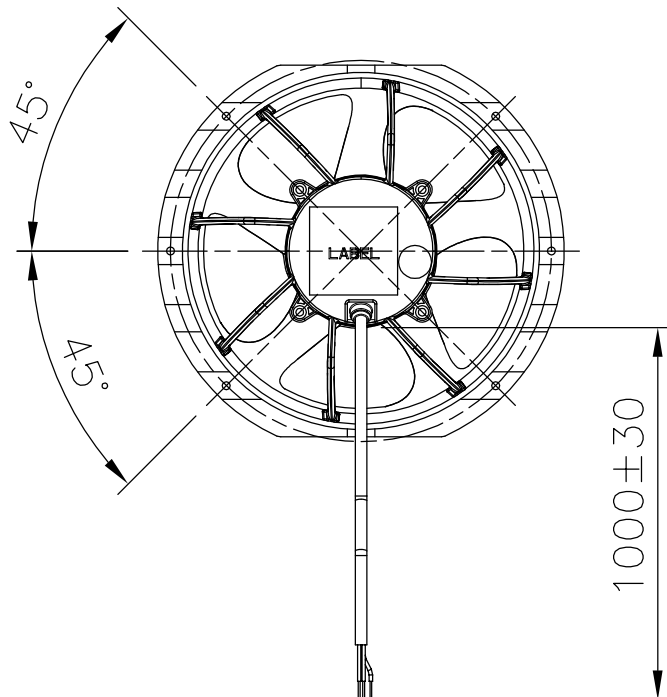
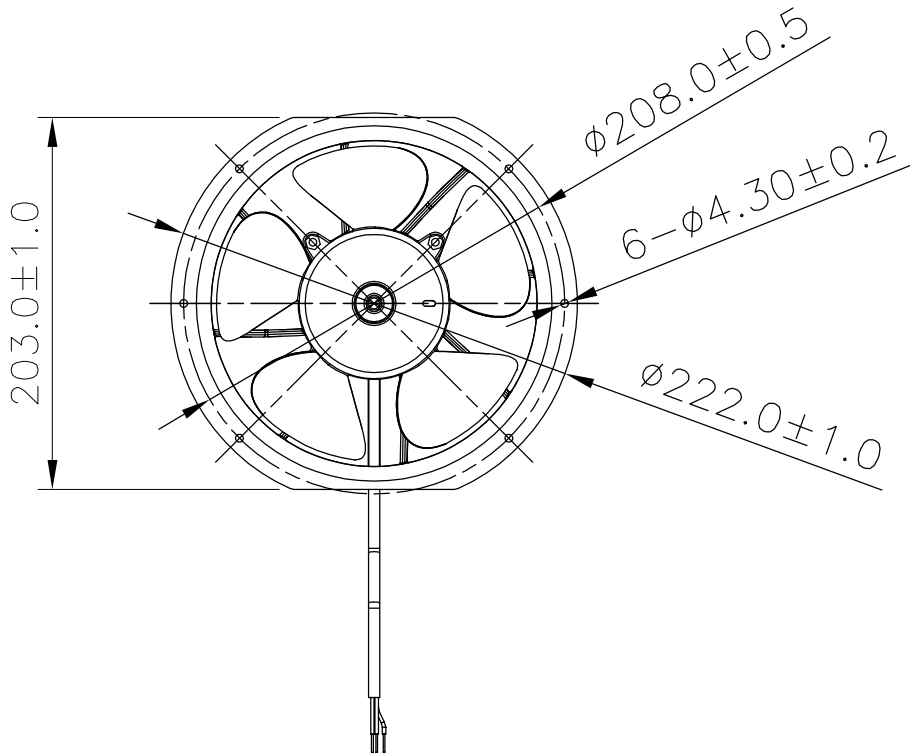


\* TEST CONDITION: INPUT VOLTAGE ----- NOMINAL VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

PART NO:

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9. DIMENSION DRAWING:

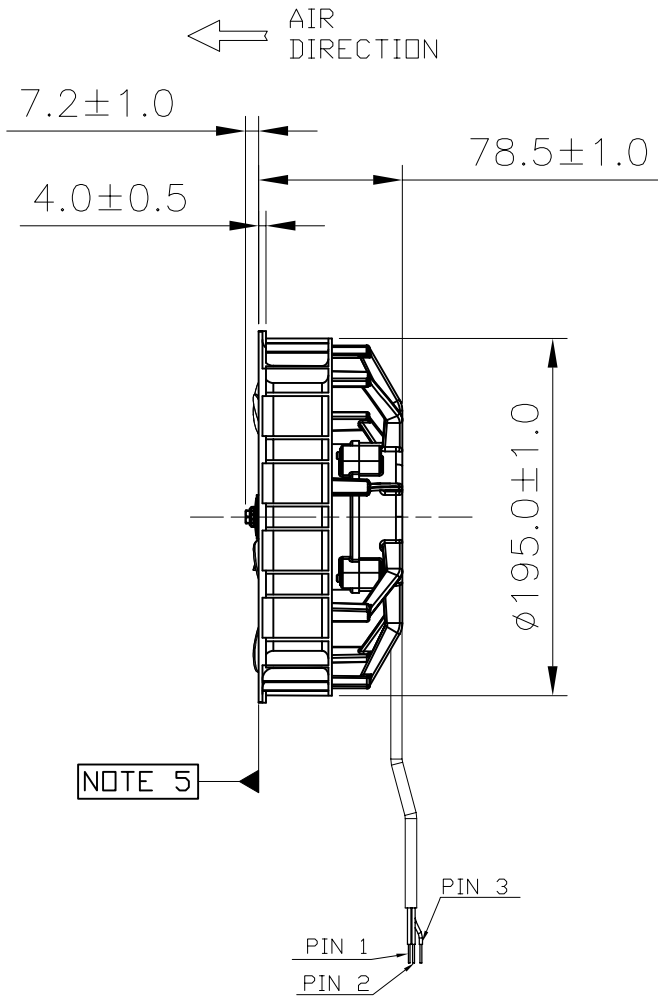


UNIT : mm



PART NO:

DELTA MODEL: AFL2212LW-00GYQ



LABEL:



UNIT : mm

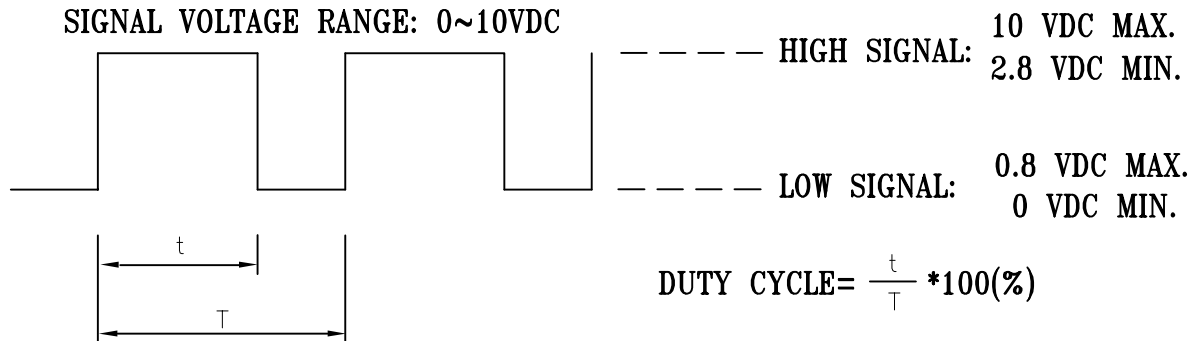
NOTES:

1. THIS PRODUCT IS RoHS COMPLIANT
2. UL 2464 18AWG/3C(80°C) -LF-  
PIN1: BROWN WIRE (+)  
PIN2: BLACK WIRE (-)  
PIN3: BLUE WIRE (PWM)
3. IMPELLER DIAMETER IS 172mm
4. FINGER GUARD USING SUGGESTION :  
INTERNAL HEIGHT DIMENSION BETWEEN FINGER GUARD AND  
TOP SURFACE OF FRAME MUST HAS 15 mm MINIMUM.

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10. PWM CONTROL SIGNAL:

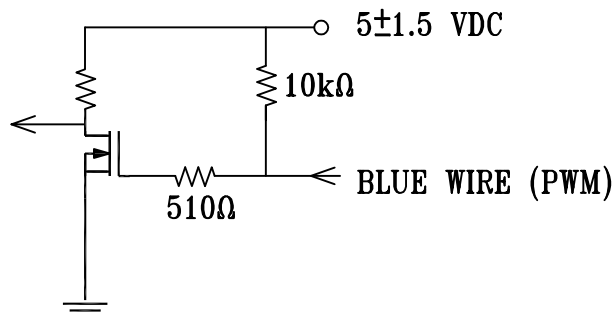


- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- WITH CONTROL SIGNAL LEAD DISCONNECTED, THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 25KHZ 20% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

11. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=25KHZ)

DUTY CYCLE (%)	SPEED (R.P.M.)	CURRENT (A) (REF.)
100	1400 ± 10%	0.40
70	1200 ± 10%	0.30
50	1000 ± 10%	0.20
30	800 ± 10%	0.15
20	700 ± 10%	0.10
0	0	0.05

12. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



12-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROL INPUT IS LEFT UNCONNECTED.



## Application Notice

1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters forth in the specification.
2. A written request should be Submitted to Delta prior to approval if deviation from the specification is required.
3. Please exercise caution when handling fans. Damage may be caused then 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. Delta fans without special protection are not suitable where any corrosive fluids are introduced to their environment.
7. 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.
8. Not all fans are provide 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. Please be cautions when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.
10. It is important to consider safety then testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.
11. 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.