



## SPECIFICATION FOR APPROVAL

Customer : STD

Description : DC FAN

Customer Part No. \_\_\_\_\_

REV. : \_\_\_\_\_

Delta Model No. : PFC1448HEE79

REV. : 03

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

Sample Issue Date : MAY.13 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, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,  
TAOYUAN CITY 33341, TAIWAN  
TEL:886-(0)3-3591968  
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DELTA ELECTRONICS, INC.  
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## STATEMENT OF DEVIATION

NONE

DESCRIPTION:

DELTA ELECTRONICS, INC.  
252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,  
TAOYUAN CITY 33341, TAIWAN

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## Specification For Approval

Customer : STD

Description : DC FAN

Customer P/N :

rev. :

Delta model no. : PFC1448HEE79

Delta Safety Model No.: N/A

Sample revision. : 03

Issue no.:

Sample issue date : MAY.13 2020

Quantity :

### 1. SCOPE:

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

### 2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	48 VDC
OPERATION VOLTAGE	36.0 - 60.0 VDC
INPUT CURRENT(AVG.)	1.1 (MAX 1.32) A CURRENT ON LABEL : 2.50A
INPUT POWER(AVG.)	52.8 (MAX. 63.36) W
SPEED	8000 ± 10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	8.304 (MIN. 7.474) M <sup>3</sup> /MIN. 293.250 (MIN. 263.925) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	65.278 (MIN. 52.883) mmH <sub>2</sub> O 2.570 (MIN. 2.082) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	70.0 (MAX. 74.0) dB-A
INSULATION TYPE	UL: CLASS A
INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 600 VAC 50/60 Hz 1.5 SECONDS, (BETWEEN FRAME AND (+) TERMINAL)

(continued)

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PART NO:

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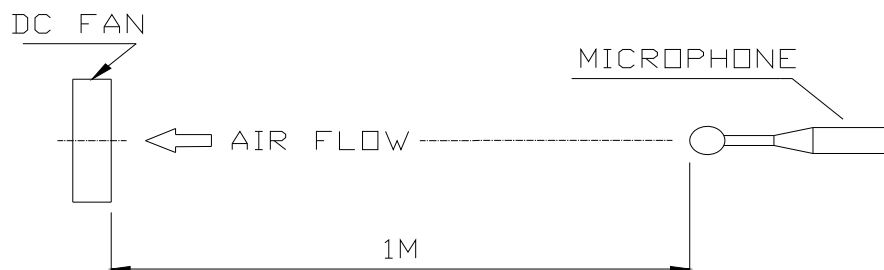
DELTA MODEL: PFC1448HEE79

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LIFE EXPECTANCE (L10) (AT LABEL VOLTAGE)	70,000 HOURS CONTINUOUS OPERATION AT 40 ° C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE.
LOCK ROTOR SHUT DOWN	THE CURRENT WILL SHUT DOWN, WHEN ROTOR LOCKED AND FIXED.

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 ONE METER FROM THE FAN INTAKE.

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3. MECHANICAL:

- 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-----660 GRAMS (REF.)

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE----- -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE----- -40 TO +75 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  
IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FIRE IN  
96 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE.
- 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, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

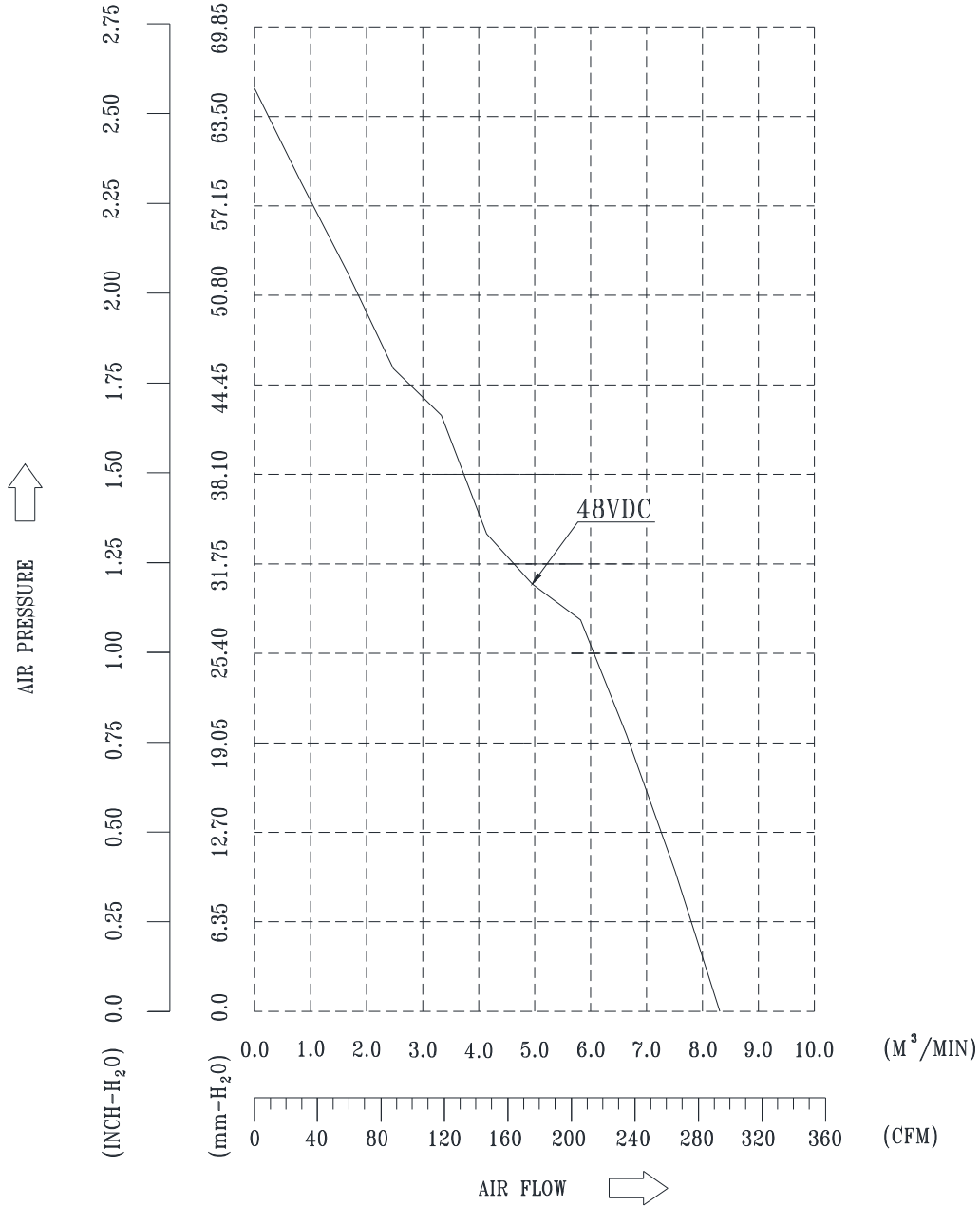
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



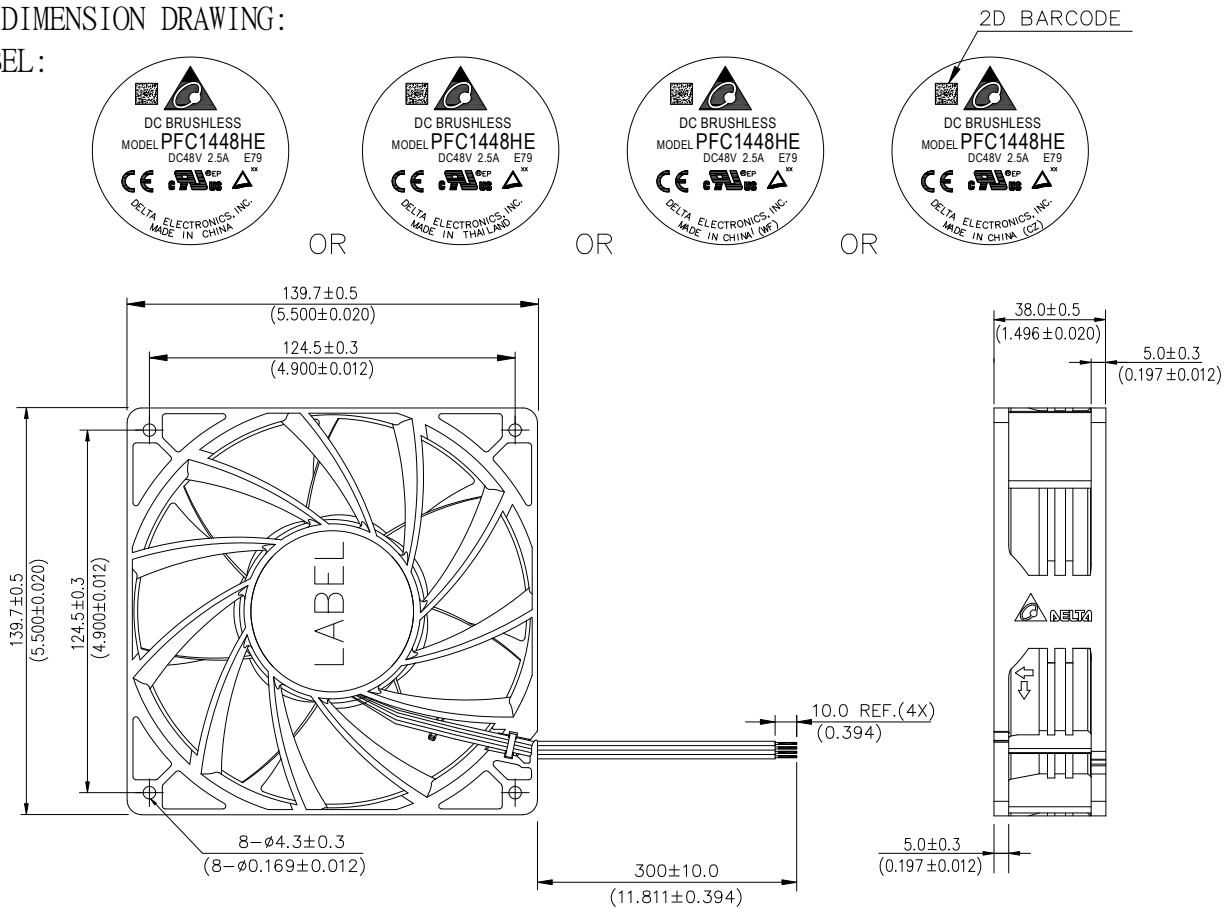
\*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE  
TEMPERATURE-----ROOM TEMPERATURE  
HUMIDITY-----65%RH

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9. DIMENSION DRAWING:

LABEL:



NOTES:

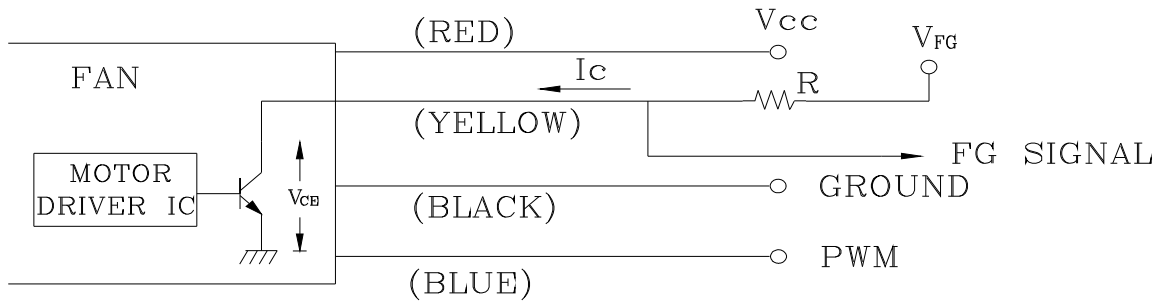
- CABLE WIRE PIN ASSIGNMENT: (UL1061 AWG#22 AND 24)  
BLACK WIRE --UL1061 AWG#22----(GND)  
RED WIRE --UL1061 AWG#22----(+)  
BLUE WIRE --UL1061 AWG#24----(PWM)  
YELLOW WIRE ---UL1061 AWG#24----(F00)
- THIS PRODUCT IS RoHS COMPLIANT

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10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION: THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH THE LEAD WIRE OF POSITIVE OR NEGATIVE.

10-2. SPECIFICATION:

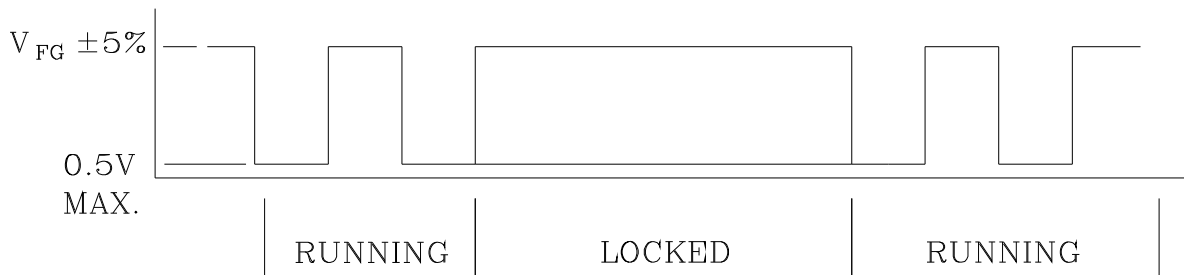
$$V_{CE(sat)} = 0.5V \text{ MAX.}$$

$$V_{FG} = 60.0VDC \text{ MAX.}$$

$$I_C = 5mA \text{ MAX.}$$

$$R \geq V_{FG}/I_C$$

10-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR F00 OUTPUT



$$N = \text{R.P.M}$$

$$TS = 60/N(\text{SEC})$$

\*VOLTAGE LEVEL AFTER BLADE LOCKED



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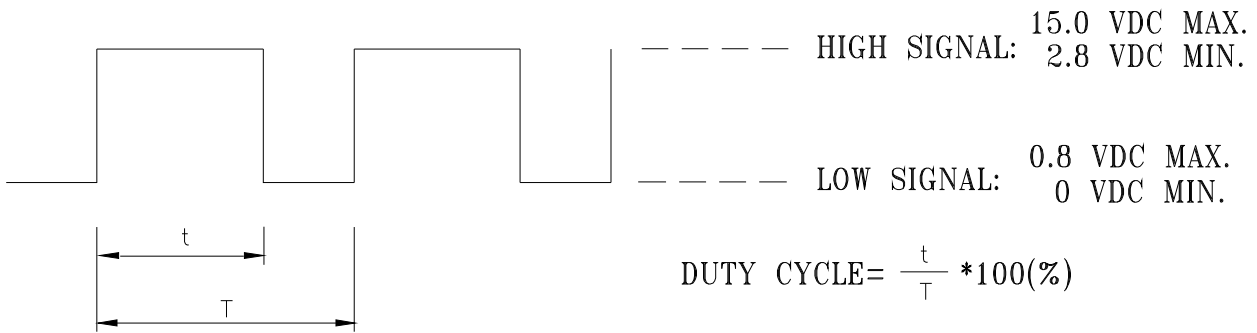
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11. PWM CONTRON SIGNAL:  
SIGNAL VOLTAGE RANGE: 0~15.0VDC



- THE PREFERRED OPERATING POINT FOR THE FAN IS 25k HZ, AND DUTY CYCLE FROM 0% TO 100%.
- AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE, THE ROTOR WILL SPIN AT MINIMUM SPEED.
- WITH CONTROL SIGNAL LEAD DISCONNECTED, THE FAN WILL SPIN AT MAXIMUM SPEED.

12. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE ; 25 DEGREE C ; PWM SIGNAL WITH 5 VDC TTL OR CMOS LEVELS & 25 KHZ)

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	8000±10%	1.1
50	4150±10%	0.22
0	1700±300	0.06