客戶承認書
SPECIFICATION FOR APPROVAL

CUSTOMER: _____

DESCRIPTION: DC FAN

CUSTOMER P/N: _____ REV: ____

DELTA MODEL: AFB1224EHE-C REV: 00

SAMPLE ISSUE DATE: 01/06/2016

QUANTITY: 7PCS

PLEASE SIGN BACK ONE COPY OF THIS SPECIFICATION AFTER COMPLETION OF APPROVAL

APPROVED BY: _____

DATE: _____

DELTA ELECTRONICS COMPONENTS (WUJIANG) LTD.
FAN/MOTOR PLANT
No.1688 Jiangxing East Road,WuJiang Economy Development Zone
Wujiang City JiangSu Province, P.R.C.

TEL:86-512-63406008
FAX:86-512-63015608

No.1688 Jiangxing East Road
WuJiang Economy Development Zone
Wujiang City Jiang Su Province,P.R.C.

TEL : 86-512-63406008
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STATEMENT OF DEVIATION

****

[V] NONE

[ ] DESCRIPTION :

No.1688 Jiangxing East Road
WuJiang Economy Development Zone
Wujiang City Jiang Su Province,P.R.C.
TEL : 86-512-63406008
FAX : 86-512-63015608

SPECIFICATION FOR APPROVAL

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Customer:

Description: DC FAN

Customer P/N: REV:

Delta Model NO.: AFB1224EHE-C Delta safety model NO.: AFB1224EHE

Sample Rev: 00 Issue NO: 5Z31WR

Sample Issue Date: JAN-06-2016 Quantity: 7PCS

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	24 VDC
OPERATION VOLTAGE	14.0 - 28.0 VDC
INPUT CURRENT	0.85 (MAX. 1.05) A SAFETY CURRENT ON LABEL : 1.05A
INPUT POWER	20.40 (MAX. 25.20) W
SPEED	4600 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	6.019 (MIN. 5.417) M^3/MIN. 212.573 (MIN. 191.315) CFM
MAX.AIR PRESSURE (AT ZERO AIRFLOW)	21.427 (MIN. 17.364) mmH_2O 0.844 (MIN. 0.683) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	58.5 (MAX. 62.5) dB-A
INSULATION TYPE	UL: CLASS A

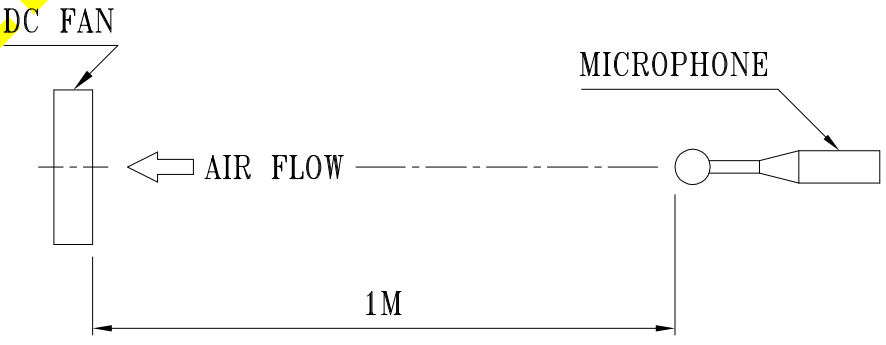
(continued)

PART NO:

DELTA MODEL: AFB1224EHE-C

INSULATION STRENGTH	10 MEG 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)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE (AT LABEL VOLTAGE)	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. 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 ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

PART NO:

DELTA MODEL: AFB1224EHE-C

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 ---------- 330 GRAMS

4. ENVIRONMENTAL:

4-1. OPERATING TEMPERATURE ---------- -10 TO +70 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

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

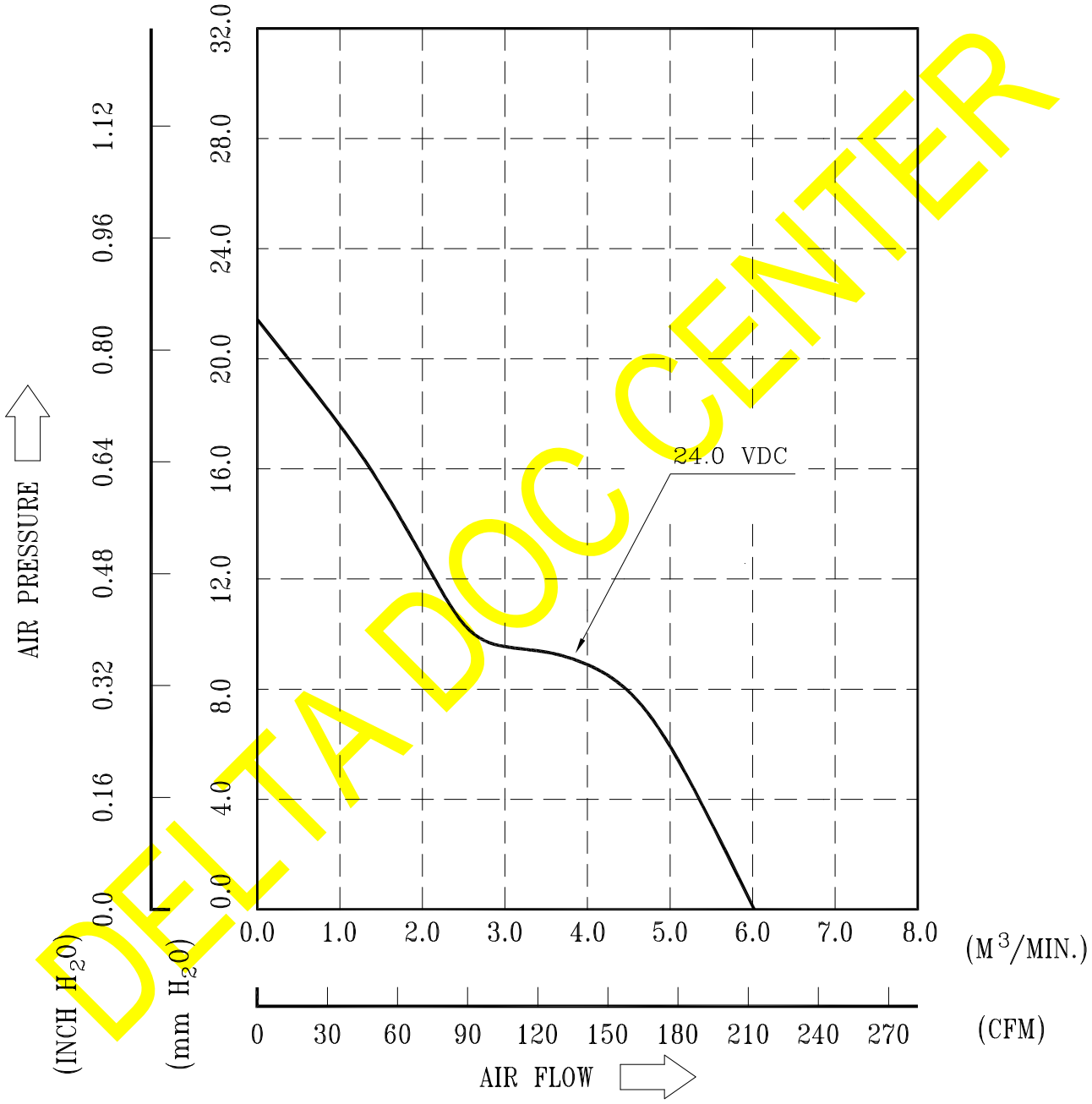
7. PRODUCTION LOCATION

7-1. PRODUCT

PART NO:

DELTA MODEL: AFB1224EHE-C

8. P & Q CURVE:



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

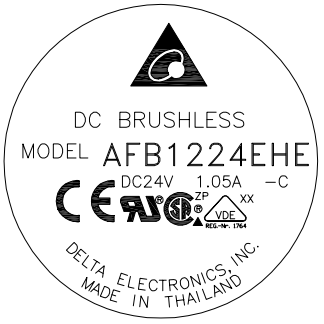
PART NO:

DELTA MODEL: AFB1224EHE-C

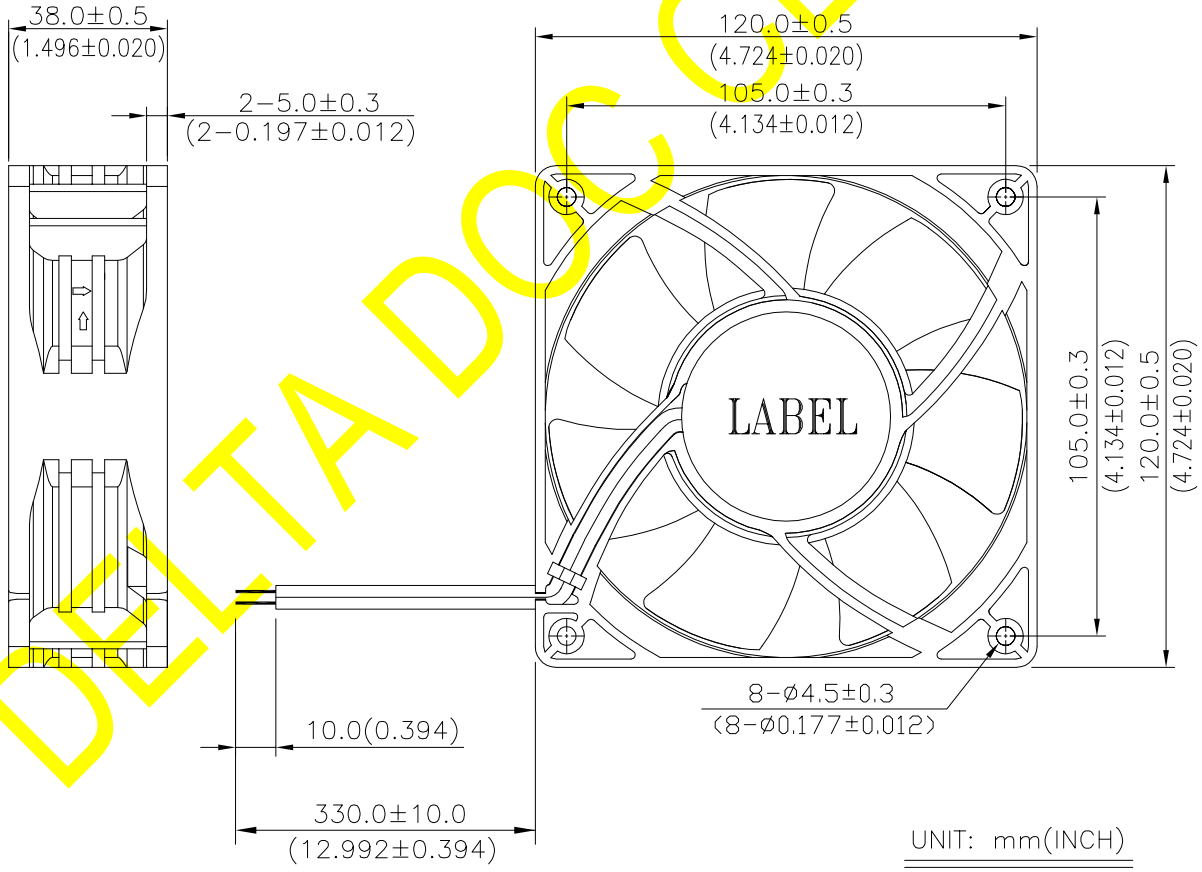
9. DIMENSION DRAWING:

LABEL:

OR



OR



UNIT: mm(INCH)

NOTES:

1. LEAD WIRE UL1007 AWG#24
   BLACK WIRE NEGATIVE(-)
   RED WIRE POSITIVE(+)
2. THIS PRODUCT IS RoHS COMPLIANT

PART NO.:

DELTA MODEL NO.:AFB1224EHE-C

TEST DATA FOR SAMPLE:

TEST ITEM	AIR PRESSURE (mm H_2O)	AIR FLOW (M^3/MIN)	SPEED (R.P.M.)	RATED CURRENT (A)	NOISE dB (A)	WAVE
SPEC / NO.	17.364 MIN.	5.417 MIN.	4600 ±10%	1.05 MAX.	52.5 MAX.	OK/NG
1	20.606	5.901	4510	0.802	50.4	
2	21.830	6.074	4642	0.882	51.1	
3	22.313	6.141	4693	0.868	51.3	
4	21.205	5.986	4575	0.834	50.7	
5	21.177	5.982	4572	0.836	50.7	
6	20.854	5.936	4537	0.797	50.6	
7	21.465	6.023	4603	0.863	50.9	
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***TEST CONDITION:INPUT VOLTAGE---RATED VOLTAGE**
TEMPERATURE---ROOM TEMPERATURE
HUMIDITY---65%RH

REPORTED BY	CHECKED BY	APPROVED BY	AGREED BY

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.

Certification Record

CUSTOMER	CLASS	FILE
Delta Electronics Inc 252 Shang Ying Rd, Kuei San Taoyuan Hsien 333 Taiwan	3812-01 FANS AND BLOWERS- **Refer to Class Description for program details**	091949_0_000

PLEASE UPDATE THE MODELS IN ALPHABETICAL ORDER

CATEGORIES:

- Extra Low Voltage Fans and Ventilators

Notes:

1. The above categories are components of other certified equipment, where the suitability of the combination is to be determined by CSA International.

- Components, DC Fans, Cat Nos and rating are as follows:

Cat Nos	Rated Voltage (V dc)	Rated Current (mA)	Optional Suffixes
ADB SERIES			
ADB0512H	12	220	0 to 9, A to Z, blank or "-"
ADB0512HH	12	280	0 to 9, A to Z, blank or "-"
ADB0512L	12	120	0 to 9, A to Z, blank or "-"
ADB0512M	12	180	0 to 9, A to Z, blank or "-"
ADB0612H	12	260	0 to 9, A to Z, blank or "-"
ADB0612HH	12	360	0 to 9, A to Z, blank or "-"
ADB0612L	12	140	0 to 9, A to Z, blank or "-"
ADB0612M	12	180	0 to 9, A to Z, blank or "-"
AFB SERIES			
AFB02505HA	5	180	STD R00 F00
AFB02505HB	5	120	STD F00
AFB02505HB-A	5	120	0 to 9, A to Z, blank or "-"
AFB02505HHA	5	240	-

AFB1212EHE	12	2200	0 to 9, A to Z, blank or "-"
AFB1212GHE	12	3240	0 to 9, A to Z, blank or "-"
AFB1212H	12	350	STD, F00, R00
AFB1212HE	12	480	-
AFB1212HF	12	650	0 to 9, A to Z
AFB1212HHE	12	700	-
AFB1212HE-RD0	12	480	0 to 9, A to Z
AFB1212HH	12	500	STD, F00, R00
AFB1212HHF	12	800	0 to 9, A to Z
AFB1212L	12	210	STD, F00, R00
AFB1212LE	12	300	-
AFB1212M	12	270	STD, F00, R00
AFB1212ME	12	400	-
AFB1212MF	12	400	0 to 9, A to Z
AFB1212SH	12	800	STD, F00, R00
AFB1212SH-SV15	12	800	STD, F00, R00
AFB1212SHE	12	1600	A to Z, 0 to 9, blank or ¡-¡
AFB1212SHF	12	1650	0 to 9, A to Z
AFB1212VHE	12	900	STD, F00, R00 0 to 9, A to Z, blank or "-"
AFB1212VHF	12	1200	0 to 9, A to Z
AFB1212VH	12	600	STD, F00, R00
AFB1224EHE	24	1050	0 to 9, A to Z, blank or "-"
AFB1224GHE	24	1600	0 to 9, A to Z, blank or "-"
AFB1224HE	24	360	-
AFB1224HHE	24	450	-
AFB1224LE	24	230	-
AFB1224ME	24	300	-
AFB1224SHE	24	750	A to Z, 0 to 9, blank or ¡-¡
AFB1224VHE	24	570	-
AFB1224MF	24	250	0 to 9, A to Z
AFB1224HF	24	400	0 to 9, A to Z
AFB1224HHF	24	500	0 to 9, A to Z
AFB1224VHF	24	650	0 to 9, A to Z
AFB1224SHF	24	900	0 to 9, A to Z

3. Model DTC-AALXX is identical to model AFC0912D-6D60 except different model number.
4. Model AFB0912VH-7A21 is identical to model AFB0912VH-4J1X except different model number.
5. Model DTC-AAR01 is identical to model AFC0912D-6C1P except different model number.
6. Model DTC-AAMXX is identical to model AFB0912VH-7A31 except different model number.
7. Model AFC0912D-6G75 is identical to model AFC0912D-6D60 except different model number.
8. Model AFB0912VH-6K44 is identical to model AFB0912VH-7A31 except different model number.
9. Model FFB0612DHE-8F58 is identical to model FFB0612DHE-SM except for different model number.

UL International, L.L.C.
Taiwan Branch

美商優力安全認證有限公司台灣分公司
UL International, L.L.C, Taiwan Branch
台北市 112 北投區大業路 260 號 1 樓
1st Fl 260 Da-Yeh Road Peitou Taipei City Taiwan 112
電話: 886-2-2896-7790
傳真: 886-2-2891-7644
http://www.ul.com.tw

NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

October 19, 2006

Attention: Ms. Celine Liao

Delta Electronics Inc.
31-1 Shien Pan Rd
Kuei San Industrial Zone
Taoyuan Hsien, 33370
Taiwan

Fax: +886-3-359-1991
E-mail: E-mail: Celine.Liao@delta.com.tw

Reference: File E132003 Project 06CA49886

Product(s): USR - UL Investigation: DC Component Fan, Models as following:
Models AFB1212(S1)E(Y), AFB1224(S1)E(Y), AFB12(V)(S2)HE(Y), AFB12(V)SHE(Y) series, covered in Sec. 14.
Note: Above (S1) may be VH, HH, H, M or L; (S2) may be G or E; (V) may be 12, 24 or 48; (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank.

Dear Ms. Liao,

Any information and documentation provided to you involving UL Mark services are provided on behalf of Underwriters Laboratories Inc.

UL's investigation of your product has been completed under the above project number and the subject product was determined to comply with the applicable requirements.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Recognized Marking and/or Recognized Component Mark only at the factory under UL's Follow-Up Service Program to the subject products, which are constructed as described below:

Identical to the subject models, which were submitted to UL for this investigation. The UL Records covering the product will be in the Follow-Up Services Procedure, File E132003, Volume 1.

To provide the manufacturer with the intended authorization to use the UL Mark, the addressee must send a copy of this Notice and all attached material to each manufacturing location as currently authorized in File E132003, Volume 1.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn.

Sincerely,

Ethan Yu

Ethan Yu
Engineer
UL International, L.L.C., Taiwan Branch
Tel: 886-2-2896-7790
Fax: 886-2-2890-7441
E-mail: Ethan.Yu@tw.ul.com

Reviewed by:

Hsiang Lu

Hsiang Lu
Project Engineer
UL International, L.L.C., Taiwan Branch
E-mail: Hsiang.Lu@tw.ul.com

VDE Prüf- und Zertifizierungsinstitut
VDE Testing and Certification Institute

Übereinstimmungserklärung

Statement of Compliance

Ausgestellt für:.
Issued to:
Delta Electronics Inc.
186 Ruey Kuang Road Neihu, 114 Taipei , Taiwan

Fertigungsstätte(n):
Place(s) of manufacture:
Delta Electronics Yueyun Central Road, 523308 Dong Guan,China
Delta Electronics Ltd. Wujiang City, China
Delta Electronics (Thailand) , Amphur, Bangpakong 04, Thailand

Erzeugnis:
Product:
Fan for IT Equipment (building in) Type: AFB1212LE/ME/HE/HHE/VHE [new version], AFB1224LE/ME/HE/HHE/VHE [new version], AFB1212SHE [new version], AFB1212EHE/GHE, AFB1224SHE [new version], AFB1224EHE/GHE, AFB1248SHE, AFB1248EHE/GHE

Prüfnorm(en):
Standard(s) used:
DIN EN 60950-1 (VDE 0805 Teil 1):2003-03; EN 60950-1 (ed.1) :2001-12
IEC 60950-1(ed.1) + corr.1

Das betreffende Erzeugnis ist in Übereinstimmung mit der(den) genannten Norm(en). Das Erzeugnis kann deshalb unter Berücksichtigung des voraus-gegangenen Schriftverkehrs mit dem(der)
The subject product complies with the referenced Standard(s). The product is therefore eligible to bear the

- ☐ **VDE-Zeichen** *VDE-Mark*
- ☐ **VDE-GS-Zeichen** *VDE-GS-Mark*
- ☒ **VDE Reg. Nr...** *VDE-Reg. No.*
- ☐ **VDE-EMV-Zeichen** *VDE-EMC-Mark.*

gekennzeichnet werden. Diese Berechtigung gilt für 60 Tage ab Ausstellungsdatum. Die Zeichengenehmigung wird innerhalb der nächsten Wochen ausge stellt, vorbehaltlich der abschließenden Beurteilung des Prüfberichtes.
In accordance with instructions contained in previous correspondence. This authorization is effective for 60 days only from the date of this notice. The VDE-Marks Licence will be issued and sent out in the next few weeks subject to the final check of the test report.

Ausgestellt durch: VDE Prüf- und Zertifizierungsinstitut, Fachgebiet FG13
Issued by department

Aktenzeichen: 1164100-2611-0011 (80071)
Reference No.

Datum: 23.10.2006 Unterschrift: (Jürgen Bärwinkel)
Date issued *Signature*