

# SPECIFICATION FOR APPROVAL

TO : \_\_\_\_\_

REF. No. \_\_\_\_\_

|                                                                                                        |                                                                                                       |                                                                                                          |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| APPROVED<br>DATE<br> | CHECKED<br>DATE<br> | PREPARED<br>DATE<br> |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|

MODEL No. AK1861HB P.S. (AT)

DESCRIPTION: AC FAN (Lead Free) REV. A

ID No. \_\_\_\_\_

THIS OFFER IS MADE ACCORDING TO YOUR CURRENT INQUIRY.  
UNLESS OTHERWISE REVISED, THIS SPECIFICATION WILL BE FINAL FOR  
ALL FUTURE PRODUCTION OF ORDERS FROM YOUR RESPECTED COMPANY

KINDLY STUDY IN DETAILS AND RETURN TO US THE DUPLICATE DULY  
SIGNED AS YOUR CONFIRMATION OF SAME.



**ADDA CORPORATION**



# DATA-SHEET

Engineering

Printed On:  
2007/3/6

## BRUSHLESS AXIAL COOLING FANS

|                                                                                       |                                  |                                                       |
|---------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------|
| Customer :                                                                            |                                  | Ref: (LF)                                             |
| Adda Model No : AK1861HB P.S:(AT)                                                     |                                  |                                                       |
| Samples attached : Piece(s),                                                          |                                  |                                                       |
| Safety Approval : UL,CUL,TUV,CE                                                       |                                  |                                                       |
| <u>Specifications</u>                                                                 |                                  |                                                       |
| <u>ITEM</u>                                                                           | <u>SPECIFICATION / CONDITION</u> |                                                       |
| MEASUREMENTS                                                                          | :                                | 180x180x65 MM                                         |
| BEARING TYPE                                                                          | :                                | BALL                                                  |
| RATED                                                                                 | :                                | 110 VAC +/- 10%                                       |
| OPERATING VOLTAGE RANGE                                                               | :                                | 100 — 120 VAC                                         |
| OPERATING FREQUENCY                                                                   | :                                | 50 / 60 Hz                                            |
| RATED CURRENT                                                                         | :                                | 0.53 / 0.50 A                                         |
| INPUT POWER                                                                           | :                                | 50 / 52 Watt .                                        |
| RATED SPEED                                                                           | :                                | 2650 / 3200 RPM + / - 10 %                            |
| AIR FLOW                                                                              | :                                | 318.0 / 382.0 CFM<br>( min at zero static pressure. ) |
| STATIC AIR PRESSURE                                                                   | :                                | 0.606 / 0.787 INCH-H2O<br>( min at zero air flow. )   |
| NOISE LEVEL                                                                           | :                                | 70.0 / 72.0 dB (A) ±2                                 |
| NET WEIGHT                                                                            | :                                | 1800 Gram.                                            |
| PACKING                                                                               | :                                | 10 pcs. Per Export Carton.                            |
|  |                                  |                                                       |
| ADDA CORPORATION                                                                      | Model No.: AK1861HB P.S:(AT)     | Page 1/5                                              |

## SPECIFICATION

1 · 0 Scope : This documentation defines the mechanical & electrical characteristics of AC brushless fans.

2 · 0 Material :

2 · 1 Housing High quality aluminum die-casting frame flated with black paint.

2 · 2 Fan blade UL 94V - 0 Glass filled polyester ( P.B.T )

2 · 3 Bearing Sys ☐ Oil impregnated sleeve or  
☒ Ball Bearing : Japan  
☐ Hypro Bearing  
☐ one Ball one Sleeve  
☒ Lead Free

2 · 4 Lead wire UL 1430 , 22 AWG

2 · 5 Connector ☐ Not included in this fan  
☐ Note as : \_\_\_\_\_  
\_\_\_\_\_

3 · 0 Dimension & construction : All dimension, direction of rotation and air flow, rated characteristics are specified in drawing & data-sheet of enclosed.

4 · 0 Characteristics definition :

4 · 1 Rated current : Rated current shall be measured after 30 minutes continuous rotation at rated voltage.

4 · 2 Rated speed : Rated speed shall be measured after 30 minutes continuous rotation at rated voltage.

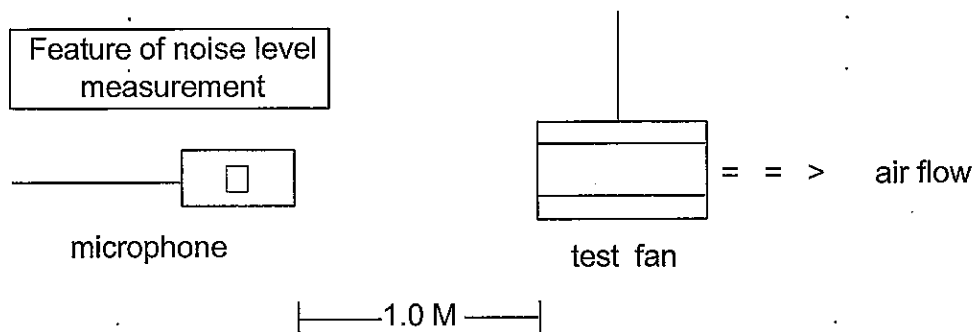
4 · 3 Start voltage : The voltages that enable to start the fan by sudden switch on.

4 · 4 Input power : Input power shall be measured after 30 minutes continuous rotation at rated voltage.



## SPECIFICATION

- 4 · 5 Locked current : Locked current shall be measured with in one minutes or rotor locked , After 30 minutes continuous rotation at rated voltage in clean air.
- 4 · 6 Air flow & static pressure : The air flow data and static pressures are determined in accordance with AMCA standard or DIN 24163 specification in a double-chamber testing with intake-side measurement.
- 4 · 7 Noise level : The measurement of noise level is carried out with reference to CNS8753 in a anechoic chamber with the microphone positioned 1 M from the air intake. Testing fan shall be hung in clear air.



### 5 · 0 Mechanical inspection

- 5 · 1 Rotation direction : Clockwise from the front face of the fan. A clear " = = > " ( arrow mark ) shall be found on the body of housing .
- 5 · 2 Safe design : All fans have intergrated protection against locked rotor condition so that there can be no damage on winding and / or any electrical components. Restart is automatic as soon as any constraint to running has been released.



## SPECIFICATION

5 · 3 Locked rotor protection : No damage shall be found for continuous 72 hours at condition of rotation locked. Restart is automatic as soon as constraint to running has been released.

5 · 4 Free drop shock : In minute package condition. The fan should withstand each one drop of three faces from 30 cm distance height onto 10 mm thickness of wooden board

### 6 · 0 Electrical inspection

6 · 1 Insulation resistance : 100 M $\Omega$  or more at 500 V megger.

6 · 2 Dielectric strength : 1 minute at 1500 VAC / 50-60Hz

6 · 3 Basic Rated Life (L10)

| Bearing type   | Temperature | Hours |
|----------------|-------------|-------|
| Sleeve bearing | 25°C        | 31000 |
|                | 50°C        | 15000 |
|                | 70°C        | 10000 |
| Ball bearing   | 25°C        | 50000 |
|                | 50°C        | 30000 |
|                | 70°C        | 20000 |

### 7 · 0 Environmental

7 · 1 Operating Temperature : - 10°C ~ + 80°C

7 · 2 Humidity RH : 20 % ~ 85 % ( Max )

7 · 3 Storage Temperature : Will satisfy performance standards after 500 hours storage at - 40 °C ~ 70 °C ( normal humidity ) with a 24 - hour recovery period at room temperature.



## SPECIFICATION

7 · 4 Humidity : After 96 hrs, 95 % RH,  $40 \pm 2^{\circ}\text{C}$  per MIL - STD - 202F, method 103B, Humidity test, The measured data of insulation resistance & dielectric strength should meet the specification listed in attach.

7 · 5 Thermal Shock : After thermal shock test per MIL - STD - 202F, method 107G, condition D, The measured data of insulation resistance & dielectric strength should the specification listed in datasheet.

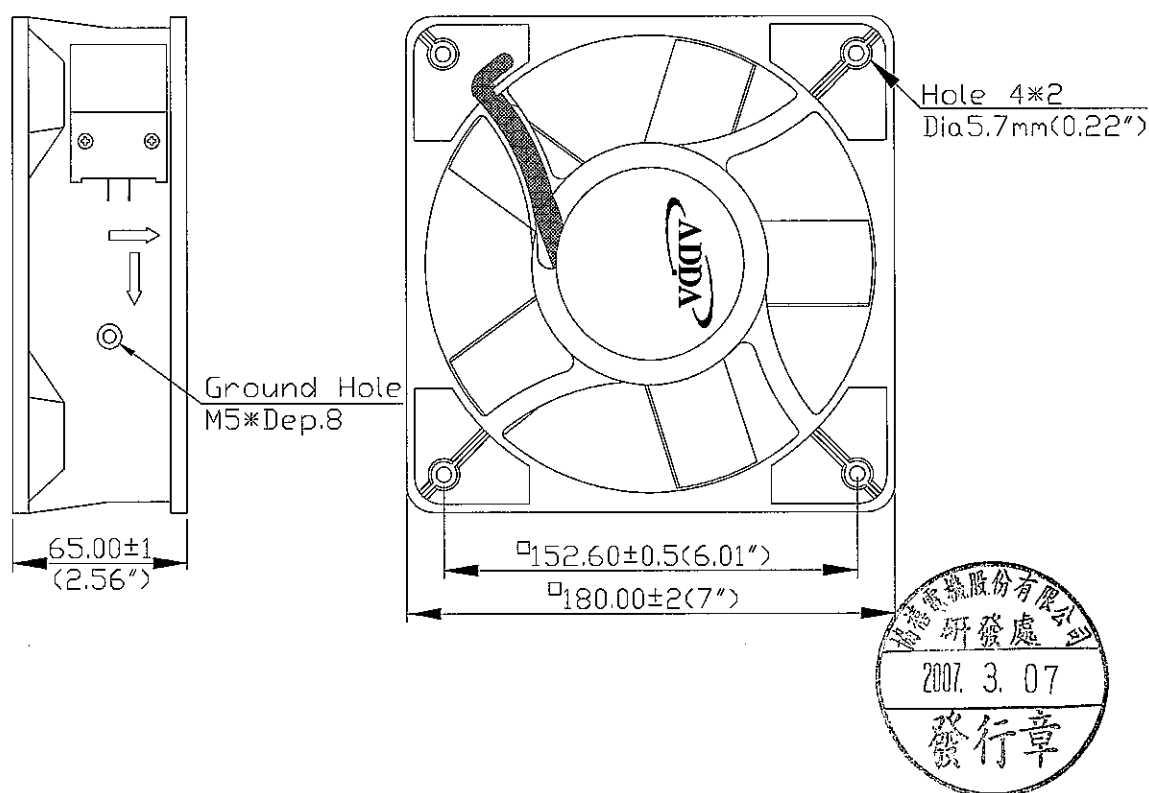
### 8 · 0 Remark

8 · 1 Material and construction are subject to change without advance notice.  
The changes should be within specification listed in this approved sheet.

8 · 2 All the fans shall meet the inspection under sampling plan MIL - STD - 105E,  
The AQL are as follow :

|          |              |
|----------|--------------|
| Critical | AQL = 0.25 % |
| Major    | AQL = 1.00 % |
| Minor    | AQL = 2.50 % |

### 9 · 0 Drawing



ML FILE NO. E132139

Issued: 2006-05-03

MULTIPLE RECOGNITION  
of  
FANS, ELECTRIC - COMPONENT  
(GPWV2, GPWV8)  
for

[349050-002] ADDA CORP

Basically Recognized for:

[420883-001] SHENG KWEI ENTERPRISE CO LTD (TPI)

Basically Recognized products covered by Procedure and/or Reports under File No. E202962, Volume 1

| Products Covered | Report Date | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designations |
|------------------|-------------|----------------------------------------------------|----------------------------------------|
| AC Fans          | 1999-09-07  | SK825AP-11-1                                       | AK8251HB                               |
|                  |             | SK825AP-22-1                                       | AK8252HB                               |
|                  |             | SK92AP-11-1                                        | AK9251HB                               |
|                  |             | SK92AP-22-1                                        | AK9252HB                               |
|                  |             | SK109AP-11-1                                       | AK1281HB                               |
|                  |             | SK109AP-22-1                                       | AK1282HB                               |
|                  |             | SK172AP-11-1                                       | AK1751HB                               |
|                  |             | SK172AP-22-1                                       | AK1752HB                               |
|                  |             | SK825AP-11-2                                       | AK8251MB                               |
|                  |             | SK825AP-11-3                                       | AK8251LB                               |
|                  |             | SK838AP-11-1                                       | AK8381HB                               |
|                  |             | SK838AP-11-2                                       | AK8381MB                               |
|                  |             | SK838AP-11-3                                       | AK8381LB                               |
|                  |             | SK92AP-11-2                                        | AK9251MB                               |
|                  | 2002-01-14  | SK92AP-11-3                                        | AK9251LB                               |
|                  |             | SK938AP-11-1                                       | AK9381HB                               |
|                  |             | SK938AP-11-2                                       | AK9381MB                               |
|                  |             | SK938AP-11-3                                       | AK9381LB                               |
|                  |             | SK125AP-11-1                                       | AK1251HB                               |
|                  |             | SK125AP-11-2                                       | AK1251MB                               |
|                  |             | SK125AP-11-3                                       | AK1251LB                               |
|                  |             | SK109AP-11-2                                       | AK1281MB                               |
|                  |             | SK109AP-11-3                                       | AK1281LB                               |
|                  |             |                                                    | AK1281MB                               |
|                  |             |                                                    | AK1281LB                               |
|                  |             |                                                    | AK1281MB                               |
|                  |             |                                                    | AK1281LB                               |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, ML Tradename, when applicable, and product designation.

Issued: 2006-05-03

M/L [349050-002] ADDA CORP

AP [420883-001] SHENG KWEI ENTERPRISE CO LTD (TPI)

| Products Covered | Report Date | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designations |
|------------------|-------------|----------------------------------------------------|----------------------------------------|
|                  | 2002-01-15  | SK825AP-22-2                                       | AK8252MB                               |
|                  |             | SK825AP-22-3                                       | AK8252LB                               |
|                  |             | SK838AP-22-1                                       | AK8382HB                               |
|                  |             | SK838AP-22-2                                       | AK8382MB                               |
|                  |             | SK838AP-22-3                                       | AK8382LB                               |
|                  |             | SK92AP-22-2                                        | AK9252MB                               |
|                  |             | SK92AP-22-3                                        | AK9252LB                               |
|                  |             | SK938AP-22-1                                       | AK9382HB                               |
|                  |             | SK938AP-22-2                                       | AK9382MB                               |
|                  |             | SK938AP-22-3                                       | AK9382LB                               |
|                  |             | SK125AP-22-1                                       | AK1252HB                               |
|                  |             | SK125AP-22-2                                       | AK1252MB                               |
|                  |             | SK125AP-22-3                                       | AK1252LB                               |
|                  |             | SK109AP-22-2                                       | AK1282MB                               |
|                  |             | SK109AP-22-3                                       | AK1282LB                               |
|                  | 2002-01-16  | SK162AP-11-1                                       | AK1651HB                               |
|                  |             | SK162AP-11-2                                       | AK1651MB                               |
|                  |             | SK162AP-11-3                                       | AK1651LB                               |
|                  |             | SK172AP-11-2                                       | AK1751MB                               |
|                  |             | SK172AP-11-3                                       | AK1751LB                               |
|                  |             | SK205AP-11-1                                       | AK2071HB                               |
|                  |             | SK254AP-11-1                                       | AK2581HB                               |
|                  |             | SK254AP-11-2                                       | AK2581MB                               |
|                  | 2002-01-17  | SK162AP-22-1                                       | AK1652HB                               |
|                  |             | SK162AP-22-2                                       | AK1652MB                               |
|                  |             | SK162AP-22-3                                       | AK1652LB                               |
|                  |             | SK172AP-22-2                                       | AK1752MB                               |
|                  |             | SK172AP-22-3                                       | AK1752LB                               |
|                  |             | SK205AP-22-1                                       | AK2072HB                               |
|                  |             | SK254AP-22-1                                       | AK2582HB                               |
|                  |             | SK254AP-22-2                                       | AK2582MB                               |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, ML Tradename, when applicable, and product designation.





Issued: 2006-05-03

M/L [349050-002] ADDA CORP

AP [420883-001] SHENG KWEI ENTERPRISE CO LTD (TPI)

| Products<br>Covered | Report<br>Date | Basic Applicant's<br>(Supplier's)<br>Product Designation | Multiple Listee's<br>Product Designations |
|---------------------|----------------|----------------------------------------------------------|-------------------------------------------|
|                     | 2004-05-20     | SK176AP-11-1                                             | AK1781HB                                  |
|                     |                | SK176AP-22-1                                             | AK1782HB                                  |
|                     |                | SK180AP-11-1                                             | AK1861HB                                  |
|                     |                | SK180AP-22-1                                             | AK1862HB                                  |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, ML Tradename, when applicable, and product designation.

UL INSPECTION CENTER TAICHUNG - 817



Industrial Services, Mobility and Transport,  
Product Safety and Quality, Education and  
Consulting, IT Services and Innovation



TÜV Rheinland Group

Sheng Kwei Enterprise Co., Ltd.  
Mr. Shun-Tung Tsao, President  
No. 273, Hsing Nan Street  
Tainan City 702  
Taiwan

Date : 07.04.2006  
Our ref. : IRC ZTW1  
Your ref.: 12039117/EH

Ref : R TÜV-Mark Approval

Type of Equipment : (AC Fan)  
Model Designation : See Certificate  
Certificate No. : R 50081257 0001  
Report No. : 10002060 004

Dear Mr. Shun-Tung Tsao,

Enclosed please find above certification documents.  
Please forward these originals to the certificate holder.

If you contact our office, please quote our reference above.

We thank you for your cooperation.

The certificate holder is: Adda Corporation

With kind regards,

Certification Body

Dipl.-Ing. W. Hsu

Enclosure



**TÜV RHEINLAND TAIWAN LTD.**

7F, No. 2, Min Chuan E. Rd., Sec.3,  
Taipei 104, Taiwan, R.O.C.  
Tel. (02) 2516-6040  
Fax (02) 2504-5040  
<http://www.twn.tuv.com>

**TAICHUNG BRANCH:**  
10F, No. 219, Min Chuan Rd.,  
Taichung 403, Taiwan, R.O.C.  
Tel. (04) 2301-9898  
Fax (04) 2301-9696

**KAOSHIUNG BRANCH:**  
33F-3, No. 80, Min Tzu 1st Rd.,  
Kaohsiung 807, Taiwan, R.O.C.  
Tel. (07) 380-1722  
Fax (07) 380-1728

**NANKANG BRANCH:**  
No. 99-23, Nan Kang Rd., Sec. 2,  
Taipei 115, Taiwan, R.O.C.  
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Fax (02) 2783-7117

Industrial Services, Mobility and Transport,  
Product Safety and Quality, Education and  
Consulting, IT Services and Innovation



TÜV Rheinland Group

Adda Corporation  
Mr. You-Wen Huang  
R & D Department  
6, East Section, Industry 6 Road  
Pingtung City 900  
Taiwan

Date : 07.04.2006  
Our ref. : IRC ZTW1  
Your ref.: 12039117/EH

Ref : R TÜV-Mark Approval

Type of Equipment : (AC Fan)  
Model Designation : See Certificate  
Certificate No. : R 50081257 0001  
Report No. : 10002060 004

Dear Mr. You-Wen Huang,

The above specified technical equipment has been tested and found to  
be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.

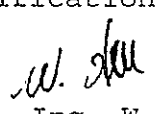
If cancellation of the certificate is submitted by November 15 in a  
given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our  
assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body

  
Dipl.-Ing. W. Hsu

CC: Sheng Kwei Enterprise Co., Ltd.

Enclosure



**TÜV RHEINLAND TAIWAN LTD.**

7F, No. 2, Min Chuan E. Rd., Sec.3,  
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NANKANG BRANCH:  
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Taipei 115, Taiwan, R.O.C.  
Tel. (02) 2783-6650  
Fax (02) 2783-7117

# Zertifikat

# Certificate



Zertifikat Nr. Certificate No.  
R 50081257

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0001

Ihr Zeichen Client Reference  
12039117/EH

Unser Zeichen Our Reference  
ZTW1-IRC- 10002060 004

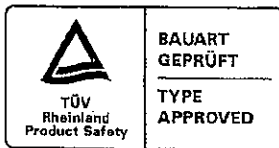
Ausstellungsdatum  
07.04.2006

Date of Issue  
(day/mo/yr)

Genehmigungsinhaber License Holder  
Adda Corporation  
6, East Section, Industry 6 Road  
Pingtung City 900  
Taiwan

Fertigungsstätte Manufacturing Plant  
ZTW1-BIO-10002060 001

## Prüfzeichen Test Mark



Geprüft nach Tested acc. to  
EN 60335-1:2002+A1+A11  
EN 60335-2-80:2003+A1

Zertifiziertes Produkt (Geräteidentifikation)  
Certified Product (Product Identification)

Lizenzentgelte - Einheit  
License Fee - Unit

Ventilator (AC Fan)

|                                   |                                                                         |   |
|-----------------------------------|-------------------------------------------------------------------------|---|
| Bezeichnung<br>(Type Designation) | : AKxxxxyzB                                                             | 5 |
| xxx steht für<br>(stands for)     | : 125, 128, 165, 175, 178, 186, 207<br>258, 825, 838, 925 oder (or) 938 | 1 |
| y steht für<br>(stands for)       | : 1 oder (or) 2                                                         | 1 |
| z steht für<br>(stands for)       | : H, M oder (or) L                                                      | 1 |
| Nennspannung<br>(Rated Voltage)   | : AC 100-120V, 50/60Hz (y=1)<br>AC 200-240V, 50/60Hz (y=2)              |   |
| Nennstrom<br>(Rated Current)      | : siehe Anlage<br>(see Appendix)                                        |   |

8



Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.  
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product  
fulfills above-mentioned requirements, the production is subject to surveillance.

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.: (+49/221)8 06 - 13 71 Fax: (+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Zertifizierungsstelle



Dipl.-Ing. W. Hsu

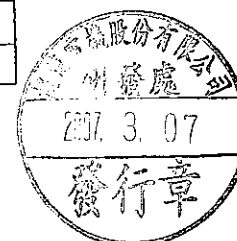
# Appendix to TÜV Bauart approved Certificate No.: R 50081257

Kind of equipment : AC Fan

Report number : 10016385 001

Model Name : AKxxxzyB (xxx= 125, 128, 165, 175, 178, 186, 207, 258,  
825, 838, 925 or 938; y= 1 or 2; z= H, M or L)

| Model No. | Voltage<br>(V) | Current<br>(A) |
|-----------|----------------|----------------|
| AK8251HB  | 100-120        | 0.17/0.15      |
| AK8251MB  | 100-120        | 0.09/0.08      |
| AK8251LB  | 100-120        | 0.07/0.06      |
| AK8252HB  | 200-240        | 0.08/0.07      |
| AK8252MB  | 200-240        | 0.06/0.05      |
| AK8252LB  | 200-240        | 0.05/0.04      |
| AK8381HB  | 100-120        | 0.12/0.10      |
| AK8381MB  | 100-120        | 0.07/0.06      |
| AK8381LB  | 100-120        | 0.05/0.04      |
| AK8382HB  | 200-240        | 0.06/0.05      |
| AK8382MB  | 200-240        | 0.05/0.04      |
| AK8382LB  | 200-240        | 0.04/0.03      |
| AK9251HB  | 100-120        | 0.18/0.16      |
| AK9251MB  | 100-120        | 0.09/0.08      |
| AK9251LB  | 100-120        | 0.07/0.06      |
| AK9252HB  | 200-240        | 0.08/0.07      |
| AK9252MB  | 200-240        | 0.06/0.05      |
| AK9252LB  | 200-240        | 0.05/0.04      |
| AK9381HB  | 100-120        | 0.12/0.11      |
| AK9381MB  | 100-120        | 0.07/0.06      |
| AK9381LB  | 100-120        | 0.05/0.04      |
| AK9382HB  | 200-240        | 0.06/0.05      |
| AK9382MB  | 200-240        | 0.05/0.04      |
| AK9382LB  | 200-240        | 0.04/0.03      |
| AK1251HB  | 100-120        | 0.25/0.20      |
| AK1251MB  | 100-120        | 0.09/0.08      |
| AK1251LB  | 100-120        | 0.06/0.05      |



### Appendix to TÜV Bauart approved Certificate No.: R 50081257

Kind of equipment : AC Fan  
 Report number : 10016385 001  
 Model Name : AKxxxzyB (xxx= 125, 128, 165, 175, 178, 186, 207, 258,  
 825, 838, 925 or 938; y= 1 or 2; z= H, M or L)

| Model No. | Voltage<br>(V) | Current<br>(A) |
|-----------|----------------|----------------|
| AK1252HB  | 200-240        | 0.09/0.07      |
| AK1252MB  | 200-240        | 0.06/0.05      |
| AK1252LB  | 200-240        | 0.05/0.04      |
| AK1281HB  | 100-120        | 0.25/0.21      |
| AK1281MB  | 100-120        | 0.14/0.13      |
| AK1281LB  | 100-120        | 0.10/0.10      |
| AK1282HB  | 200-240        | 0.12/0.10      |
| AK1282MB  | 200-240        | 0.07/0.06      |
| AK1282LB  | 200-240        | 0.06/0.05      |
| AK1651HB  | 100-120        | 0.56/0.50      |
| AK1651MB  | 100-120        | 0.28/0.27      |
| AK1651LB  | 100-120        | 0.21/0.19      |
| AK1652HB  | 200-240        | 0.30/0.25      |
| AK1652MB  | 200-240        | 0.17/0.16      |
| AK1652LB  | 200-240        | 0.13/0.12      |
| AK1751HB  | 100-120        | 0.24/0.25      |
| AK1751MB  | 100-120        | 0.17/0.21      |
| AK1751LB  | 100-120        | 0.16/0.20      |
| AK1752HB  | 200-240        | 0.12/0.16      |
| AK1752MB  | 200-240        | 0.10/0.12      |
| AK1752LB  | 200-240        | 0.09/0.16      |
| AK1781HB  | 100-120        | 0.57/0.48      |
| AK1782HB  | 200-240        | 0.21/0.23      |
| AK1861HB  | 100-120        | 0.53/0.50      |
| AK1862HB  | 200-240        | 0.23/0.24      |
| AK2071HB  | 100-120        | 0.60/1.0       |
| AK2072HB  | 200-240        | 0.30/0.49      |



**Appendix to TÜV Bauart approved Certificate No.: R 50081257**

Kind of equipment : AC Fan  
 Report number : 10016385 001  
 Model Name : AKxxxzyzB (xxx= 125, 128, 165, 175, 178, 186, 207, 258, 825, 838, 925 or 938; y= 1 or 2; z= H, M or L)

| Model No. | Voltage (V) | Current (A) |
|-----------|-------------|-------------|
| AK2581HB  | 100-120     | 0.55/0.62   |
| AK2581MB  | 100-120     | 0.22/0.24   |
| AK2582HB  | 200-240     | 0.26/0.30   |
| AK2582MB  | 200-240     | 0.16/0.14   |

Date: April 07, 2006

Certification Body

*[Signature]*  
 Dipl.-Ing. Windah Hsu

