

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

CUSTOMER PART NO. : _____

CUSTOMER APPROVED	APPROVED BY  2024.03.20 簡文榮	CHECKED BY  2024.03.20 利俊宏  2024.03.20 蔡淑媛	PREPARED BY  2024.03.20 陳佩如
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MODEL NO. : AD12024HB257B01 P.S. (00NS)

DESCRIPTION : _____

SPEC NO. : SA-0120240320025

ISSUE DATE : 2024.03.20

REVISION : A00



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

Revised Record

[illegible]

DATA - SHEET

Engineering

BRUSHLESS AXIAL COOLING FANS

Customer	:		Ref: (RoHS)
Adda Model No	:	AD12024HB257B01	P.S: (00NS)
Samples attached	:	Piece(s),	
Safety Approval	:	UL,CUL,TUV,CE,UKCA	TUV:EN 62368-1 2014+A11 UL:UL507 CE:EN 61000-6-1:2007 EN 61000-6-3:2007+A1 UKCA:BS EN 61000-6-1:2007 BS EN 61000-6-3:2007+A1
<u>Specifications</u>			
ITEM	SPECIFICATION / CONDITION		
BEARING TYPE	: TWO BALL		
RATED VOLTAGE	: 24 VDC		
OPERATING VOLTAGE RANGE	: 22.8 VDC — 25.2 VDC		
OPERATING DUTY CYCLE RANGE	: 30% ~ 100%		
START—UP DUTY CYCLE	: 30% Max (AT RATED VOLTAGE)		
RATED CURRENT	: 0.12 Amp + 10 %MAX (Duty cycle 100%) (Approximately REAL CURRENT 0.07 Amp)		
RATED POWER	: 2.88 Watt + 10 %MAX (Duty cycle 100%) (Approximately REAL POWER 1.68 Watt)		
RATED SPEED	: 2200 RPM ± 10 % (Duty cycle 100%) : 0 RPM (Duty cycle 0%) (IN FREE AIR AT RATED VOLTAGE)		
AIR FLOW	: 75.334 CFM (min.: 67.800 CFM)		
AIR FLOW	: 2.131 CMM (min.: 1.917 CMM) (IN FREE AIR AT RATED VOLTAGE)		
STATIC AIR PRESSURE	: 0.128 Inch H ₂ O (min.: 0.103 Inch H ₂ O)		
STATIC AIR PRESSURE	: 3.251 mm H ₂ O (min.: 2.633 mm H ₂ O) (IN FREE AIR AT RATED VOLTAGE)		
NOISE LEVEL	: 35.3 dB (A) (max.: 39.3 dB(A))		
MOTOR PROTECTION	: BY IC		
POLARITY PROTECTION	: YES		
LIFE EXPECTANCY	: 70000 Hours at 40°C / 65% RH		
NET WEIGHT	: 156 Gram. (REF.)		
PACKING	: 60 pcs. Per Export Carton.		
* If no PWM signal is present (no connection to the PWM drive signal), the fan should be run at rated speed RPM. * The fan should be run,at Max of start -up duty cycle. Unless otherwise stated, the relative humidity is 65%, and the temperature is 25°C for the standard testing. Should you have any doubt, please refer to the environmental conditions specified in the acknowledgement document. Real Current and Real Power are for reference.			
ADDA CORPORATION		Model No.: AD12024HB257B01	P.S: (00NS)
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SPECIFICATION

1 · 0 SCOPE

- 1.1 If the information or other related document is inconsistent with this acknowledgement document, please refer to the acknowledge document.
- 1.2 This documentation defines the mechanical & electrical characteristics of DC brushless fans.
- 1.3 The specification of this product is described in details in the acknowledgement document. No guarantee is given to our product under the use of over specifications.
- 1.4 For any change or amendment to the specifications, such change will be noticed in writing beforehand.
- 1.5 If the product is used on the MIS system, please specify the specification in the purchase order.

2 · 0 MATERIAL

- 2 · 1 Frame : UL94V-0 Glass Filled polyester (P.B.T)
- 2 · 2 Fan Blade : UL94V-0 Glass Filled polyester (P.B.T)
- 2 · 3 RoHS : (V) YES
- HF : () YES

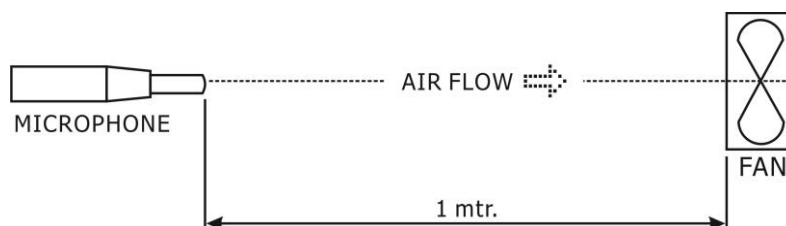
3 · 0 DIMENSIONS & CONSTRUCTION

All dimensions, Direction of rotation and air flow were specified as per drawing attached.

4 · 0 CHARACTERISTICS & DEFINITION

- 4 · 1 Rated Current/Rated Speed/Rated Power :
All shall be measured after 3 minutes of continuous rotation at rated voltage in free air.
- 4 · 2 Start Voltage : The voltage which is able to start the fan to operate by suddenly switching ' ON ' .
- 4 · 3 Locked Rotor Current : Locked current shall be measured within one minute of rotor locked, after 3 minutes of continuous rotation at rated voltage in free air.
- 4 · 4 Air Flow & Static Pressure : The air flow data and static pressures should be determined in accordance with AMCA-210 standard in a doublechamber testing with intake-side measurement.
- 4 · 5 Noise Level : The measurement of noise level is carried out with reference to ISO7779 in a semi-anechoic chamber with the microphone positioned 1 meter from the air intake. Testing fan shall be hung in clean air .

NOISE LEVEL MEASUREMENT



SPECIFICATION

5.0 MECHANICAL INSPECTION

5.1 Rotation Direction

Counterclockwise when look into impeller side.

5.2 Protection

All fans have integrated protection against locked rotor condition so that there will be no damage to winding or any electronic component.

Restarting is automatic as soon as any constraint to rotation has been released.

As fan placed at dead angle position, and the switch was changed from off to on. Restarting was automatic normal as soon as and proved that this fan is good fan.

5.3 Locked Rotor Protection

No damage shall be found after 72 hours continuously at condition of rotation locked.

Restarting is automatic as soon as constraint to running has been released.

5.4 Avoid the damage, check the correct voltage and proper polarity before connecting with power.

5.5 Free Drop Shock

In minimum package condition, the fan should withstand drops on any three faces from a height of 30cm onto a wood board of 10mm thick.

5.6 Please do not stick a grease and/or an oil to the fan housing or blade which may have a harmful influence by a chemical reaction at high humidity.

5.7 If the fan is reinstalled, please pay special attention to the noise due to the vibration (or resonance).

5.8 During the testing of the fan, please make sure the finger guard is used for safety.

6.0 ELECTRICAL INSPECTION

6.1 Insulation Resistance

Not less than 10M ohm between housing and positive end of lead wire (red) at 500V DC.

6.2 Dielectric Strength

No damage should be found at 500 VAC for 60 seconds, measured with 1mA trip current between housing and positive end of lead wire.

6.3 Life Expectancy

The continuous duty life at given temperature after which, 90% of testing units shall still be running.

6.4 While the fan is running, do not intentionally lock the fan for a long time since the overheating of the motor produced by the long-time locking will damage the fan.

7.0 ENVIRONMENTAL

7.1 Improper use such as disassembling the fan, being covered with dust, or dipping the fan in water that results in defects is not covered in the warranty. Do not use the fan in the environment with corrosive air or liquid. ADDA does not warrant damage to the product caused by outside elements (as dust, condensation, humidity or insects).

7.2 Operating Temperature:-10°C to +70°C .

7.3 Operating Humidity:65%+/-20% RH.

7.4 Storage Temperature:-40°C to +70 °C.

7.5 Storage Humidity:65%+/-20% RH.

7.6 Do not place or store the fan in the environment with high/low temperature/humidity. If the fan is stored for more than 6 months, functional test is highly recommended before using.



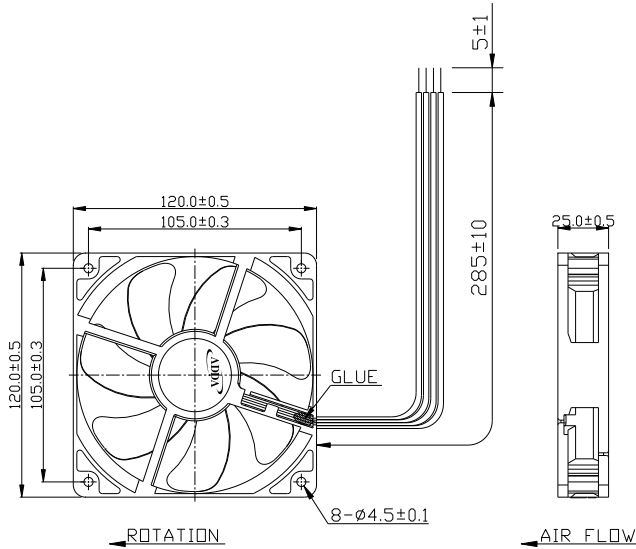
SPECIFICATION

8.0 REMARKS

- 8.1 Material and construction are subject to change without advance notice. The changes should be within specification.
- 8.2 All fans shall meet the quality inspection under sampling plan MIL-STD-105E as follow:

Critical	0.25%
Major	1.00%
Minor	2.50%

9.0 OUTLINE STYLING & DIMENSIONS



LEAD WIRES : UL 1061, AWG26 ;
Red = positive ; Black = negative.
White = FG ; Blue = PWM



10.0 Notes:

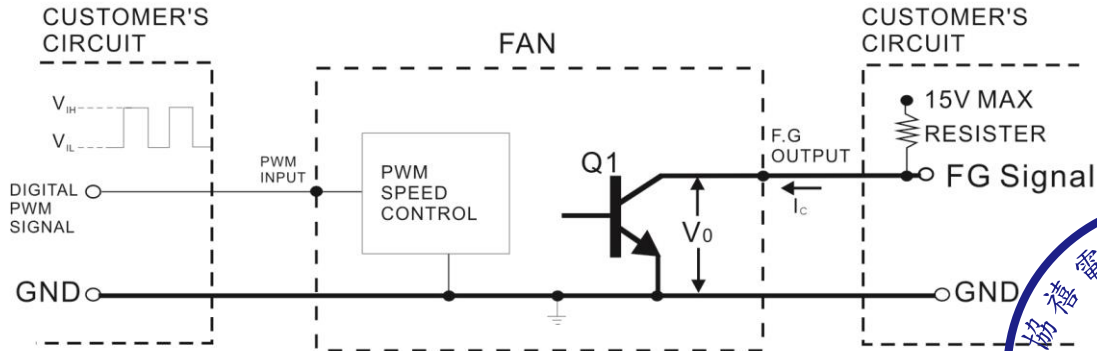
- 10.1 Please do not touch and push Fan Blade with fingers or others, fan blade and ball bearings may be damaged and it causes noise defect. And suitable fan guard should be fitted to the fan to guard against any potential for personal injury.
- 10.2 Do not carry the fan by its lead wires.
- 10.3 If the fan does not have the polarity protection function, the connection of the colored wires should be red + red, and black + black, or else the fan will be damaged in no time.
- 10.4 For the models without reverse connection of polarity protection, please do not connect the lead wire in reverse
- 10.5 Please don't install this fan in series with 2x voltage inputs. For example, if a single fan rated at 12V, then don't install two of them in series with 24V input.
- 10.6 Every specific fan is designed for its certain application (project). Therefore, if you want to use this fan in other application (project), please inform ADDA first so that we can confirm whether there is any issue which might be incurred from the reason of this different application (project) or not.
- 10.7 The "Life Expectancy" of this fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy in the Test Reports (L10 and MTTF Report) that relate to this fan is for reference only and shall not construe any kind of warranty of ADDA to the life of any specific fan, either expressed or implied.
- 10.8 The period of product warranty, unless otherwise agreed by ADDA in writing, shall be 12 months starting from the date of production.
- 10.9 In Lead Wire, there is a possibility to come off from frame.
- 10.10 In order to avoid abnormal bumping or interference caused by deformed impeller when fan is fastened, suggested distance of at least 0.5mm is strongly reserved in front of the frame (the sight from the impeller face).
- 10.11 Hot swapping or Hot plugging is not allowed to cause damage to fans. Notice in advance is strongly requested if design for Hot swapping or Hot plugging is needed.



PROVISION OF DIGITAL PWM SPEED CONTROL & LOCKED SIGNAL(F.G)

- OUTPUT OF LOCKED SIGNAL -----OPEN COLLECTOR TYPE

(External signal function design is decided by customer)



*TRANSISTOR Q1 AT "ON" POSITION

COLLECTOR CURRENT----- $I_c = 5 \text{ mA MAX}$

SATURATION VOLTAGE----- $V_{OL} = 1 \text{ V MAX}$

*TRANSISTOR Q1 AT "OFF" POSITION

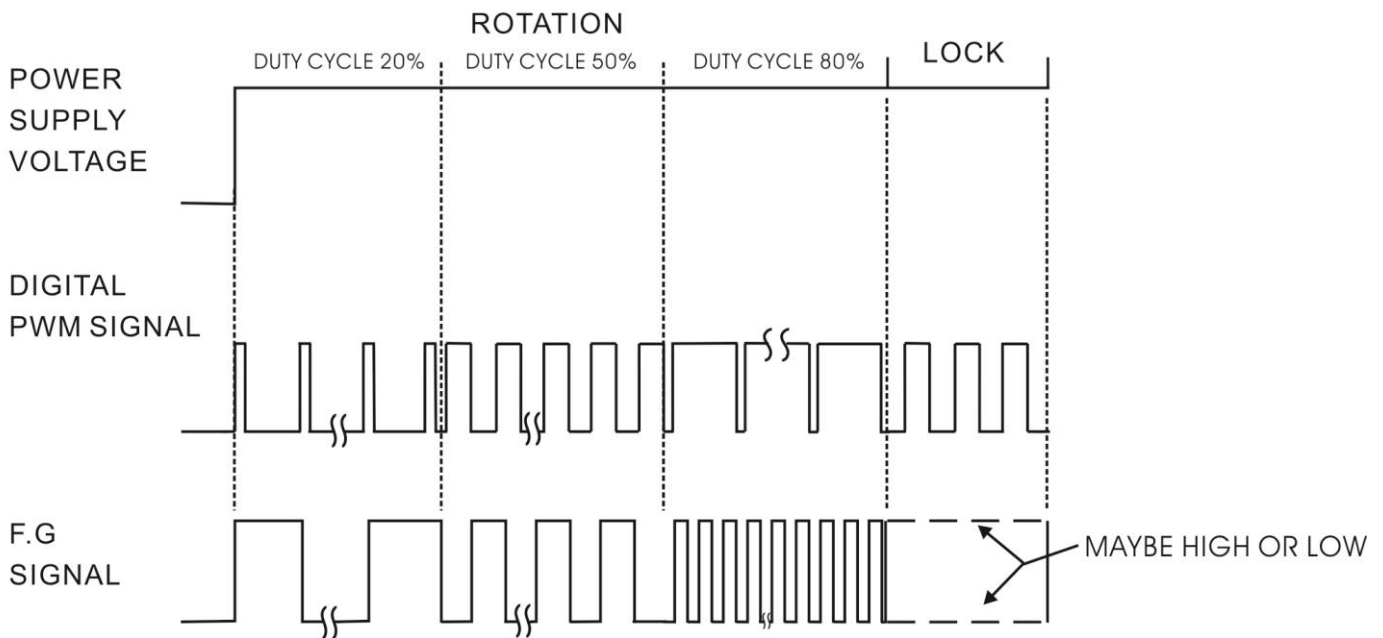
RELEASE VOLTAGE----- $V_{OH} = 15 \text{ V MAX}$

*DIGITAL PWM SPEED CONTROL POSITION

PWM INPUT VOLTAGE HIGH----- $V_{IH} = 3\text{V} \sim 5.5 \text{ V}$

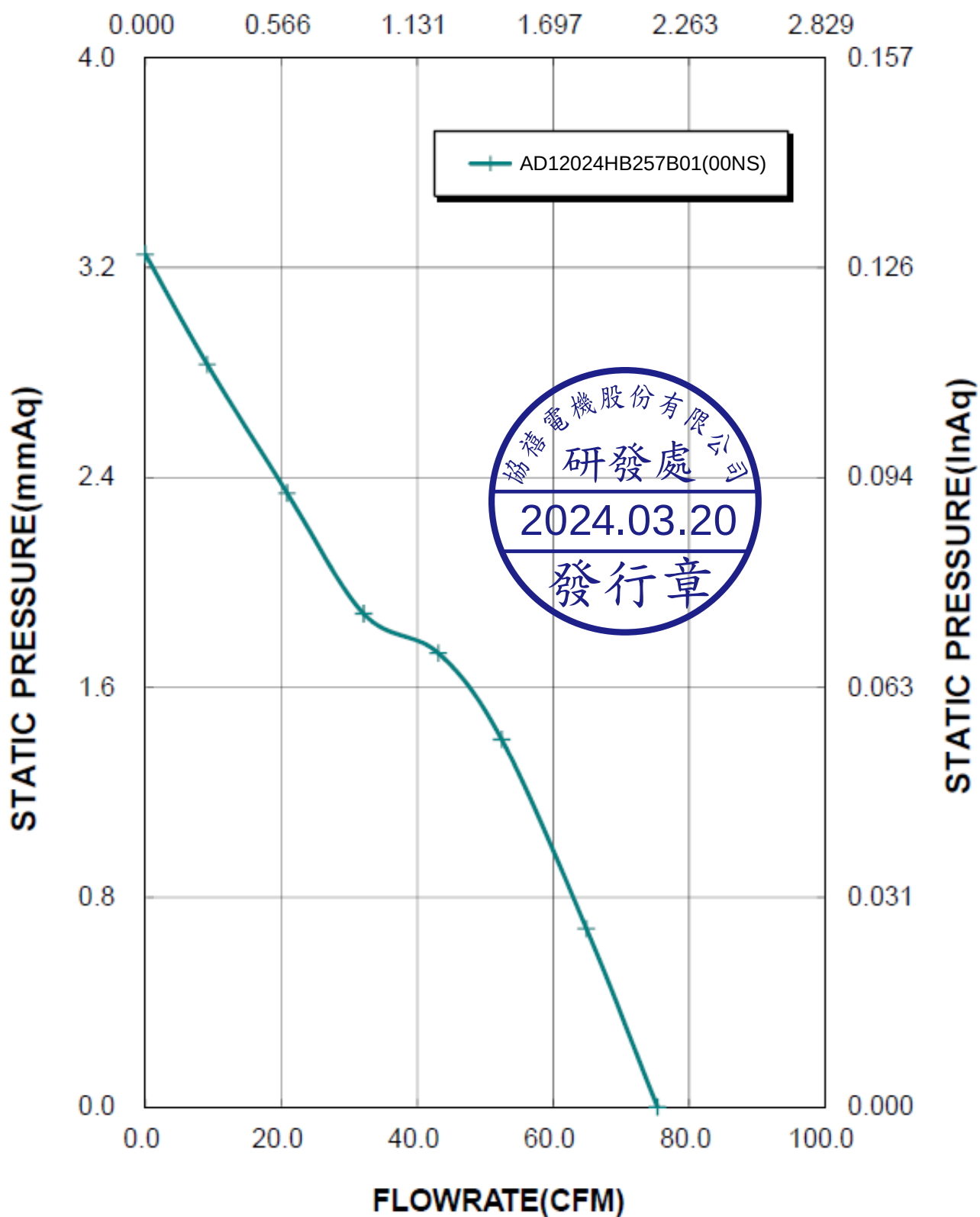
PWM INPUT VOLTAGE LOW----- $V_{IL} = 0\text{V} \sim 0.5\text{V}$

*PWM INPUT FREQUENCY----- $FPWM: 18\text{KHZ} \sim 30\text{KHZ}$



Fan Performance Curve

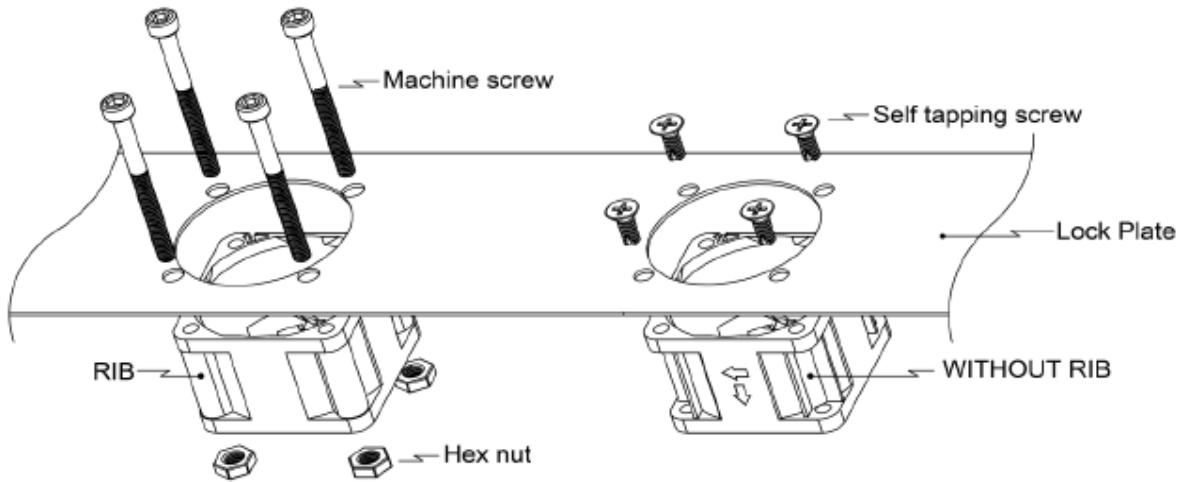
FLOWRATE(CMM)



外框運用說明 (Frame Type Recommended)

*標準框建議使用自攻螺絲,RIB框建議使用機械螺絲。

- We recommend to use self-tapping screw for the standard frame and machine screw for the RIB frame.



CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2216808-0
Report Reference E132139-20220428
Date 4-May-2022

Issued to: ADDA CORP
NO 6 E SECTION INDUSTRY 6 RD PING TUNG 900
Taiwan

This is to certify that
representative samples of

GPWV8 - Fans, Electric Certified for Canada - Component
See Addendum Page for Product Designation(s).



Have been investigated by UL in accordance with the
component requirements in the Standard(s) indicated on
this Certificate. UL Recognized components are incomplete
in certain constructional features or restricted in
performance capabilities and are intended for installation in
complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: CSA C22.2 NO. 113-18 - 11 th Ed. - Issue Date: 2018-10-01

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark.
Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified
and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please
contact a local UL Customer Service Representative at <http://ul.com/about/locations>.



CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2216808-0
Report Reference E132139-20220428
Date 4-May-2022

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
AD12012(B)B257(C)01, Where (B) may be D, L, M, H, U, X (C) may be 9, B, F, 1, 2, 3, 4, 7, 8.	Fans, Electric - Component
AD12024(B)B257(C)01, where(B)may be D, L, M, H, U, X (C) may be 0,6, 9, B, F, 1, 2, 3, 4, 7, 8.	Fans, Electric - Component
AS04012(Y)B285(Z)02, Where (Y) may be M, H, U (Z) may be, 1, 2, 3, 9, B, F.	Fans, Electric - Component



Barthel

Bruece Mahrenholz, Director North American Certification Program

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2217405-0
Report Reference E132139-20220428
Date 4-May-2022

Issued to: ADDA CORP
NO 6 E SECTION INDUSTRY 6 RD PING TUNG 900
Taiwan

This is to certify that
representative samples of

GPWV2 - Fans, Electric - Component
See Addendum Page for Product Designation(s).



Have been investigated by UL in accordance with the
component requirements in the Standard(s) indicated on
this Certificate. UL Recognized components are incomplete
in certain constructional features or restricted in
performance capabilities and are intended for installation in
complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety:

UL 507, 10th Ed., Issue Date: 2017-11-09, Revision Date:
2020-05-27

Additional Information:

See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

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Bruce Mahrenholz, Director North American Certification Program

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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2217405-0
Report Reference E132139-20220428
Date 4-May-2022

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
AD12012(B)B257(C)01, Where (B) may be D, L, M, H, U, X (C) may be 9, B, F, 1, 2, 3, 4, 7, 8.	Fans, Electric - Component
AD12024(B)B257(C)01, where (B) may be D, L, M, H, U, X (C) may be 0, 6, 9, B, F, 1, 2, 3, 4, 7, 8.	Fans, Electric - Component
AS04012(Y)B285(Z)02, Where (Y) may be M, H, U (Z) may be, 1, 2, 3, 9, B, F.	Fans, Electric - Component



B. Mahlenz

Bruce Mahlenz, Director North American Certification Program

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Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50156693

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Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum	Date of Issue
238056277/P00595120	ZTW1-YML- 11016931 124	14.04.2022	(day/mo/yr)

Genehmigungsinhaber License Holder

Adda Corporation
6, East Section, Industry 6 Road,
Pingtung City 900
Taiwan, R.O.C.

Fertigungsstätte Manufacturing Plant

ADDA Electric Machinery Technology
(Kunshan), Co., Ltd.
No. 88, Jiangfeng Road
Zhangpu Town
Kunshan City
Jiangsu
P.R. China

Prüfzeichen Test Mark



Bauart geprüft
Sicherheit
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Produktions-
Überwachung

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ID 200000000

Geprüft nach Tested acc. to

EN 62368-1:2014+A11
EN 62368-1:2014

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Ventilator (DC Fan)

wie Blatt (as page) 01, Ergänzung (Addition)

Bezeichnung : 1) AD12024Z1B257Z201 (ADDA, BERFLO)
(Type Designation) 2) AD12012Z1B257Z201 (ADDA, BERFLO)
3) AD12024Z1B257Z201 (ADDA, BERFLO)

Z1 steht für : 1) D, L, M, H oder (or) U
(stands for) 2)-3) D, L, H, M, U oder (or) X

Z2 steht für : 1) 0 oder (or) 6
(stands for) 2)-3) 1, 2, 3, 4, 7, 8, 9, B oder (or) F

Nennspannung/Nennstrom : siehe Anlage
(Rated Voltage/Rated Current) (see appendix)

Fortsetzung Blatt (continued on page) 0142

ANLAGE (Appendix): 3.5

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Tel.: (+49/221) 8 06 - 13 71 e-mail: cert-validity@de.tuv.com

Fax: (+49/221) 8 06 - 39 35 http://www.tuv.com/safety



Zertifizierungsstelle



Jacky C. W. Chen

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50156693

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0142

Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum Date of Issue (day/mo/yr)
238056277/P00595120	ZTW1-YML- 11016931 124	14.04.2022

Genehmigungsinhaber License Holder

Adda Corporation
6, East Section, Industry 6 Road,
Pingtung City 900
Taiwan, R.O.C.

Fertigungsstätte Manufacturing Plant

ADDA Electric Machinery Technology
(Kunshan), Co., Ltd.
No. 88, Jiangfeng Road
Zhangpu Town
Kunshan City
Jiangsu
P.R. China

Prüfzeichen Test Mark



Geprüft nach Tested acc. to

EN 62368-1:2014+A11
EN 62368-1:2014

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Ventilator (DC Fan)

wie Blatt (as page) 01, Fortsetzung (Continuation)

Vermerk: Das Gerät ist auch als MS3 klassifiziert, gemäß Tabelle 35 des Unterabschnitts 8.2.1 der Norm EN 62368-1:2014/EN 62368-1:2014+A11:2017 eingestuft.

Sofern nicht anders angegeben, gelten die klassifizierten Bedingungen bei Nennspannung und normaler Drehzahl des Ventilatorflügels.

(Remark: The equipment is also classified as MS3 according to Table 35 of sub-clause 8.2.1 in standard EN 62368-1:2014/EN 62368-1:2014+A11:2017. Unless otherwise stated the classified conditions are under rated voltage and normal rotational speed of the fan blade.)

ANLAGE (Appendix): 3.5

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
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TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Tel.: (+49/221) 8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221) 8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle



Jacky C. W. Chen