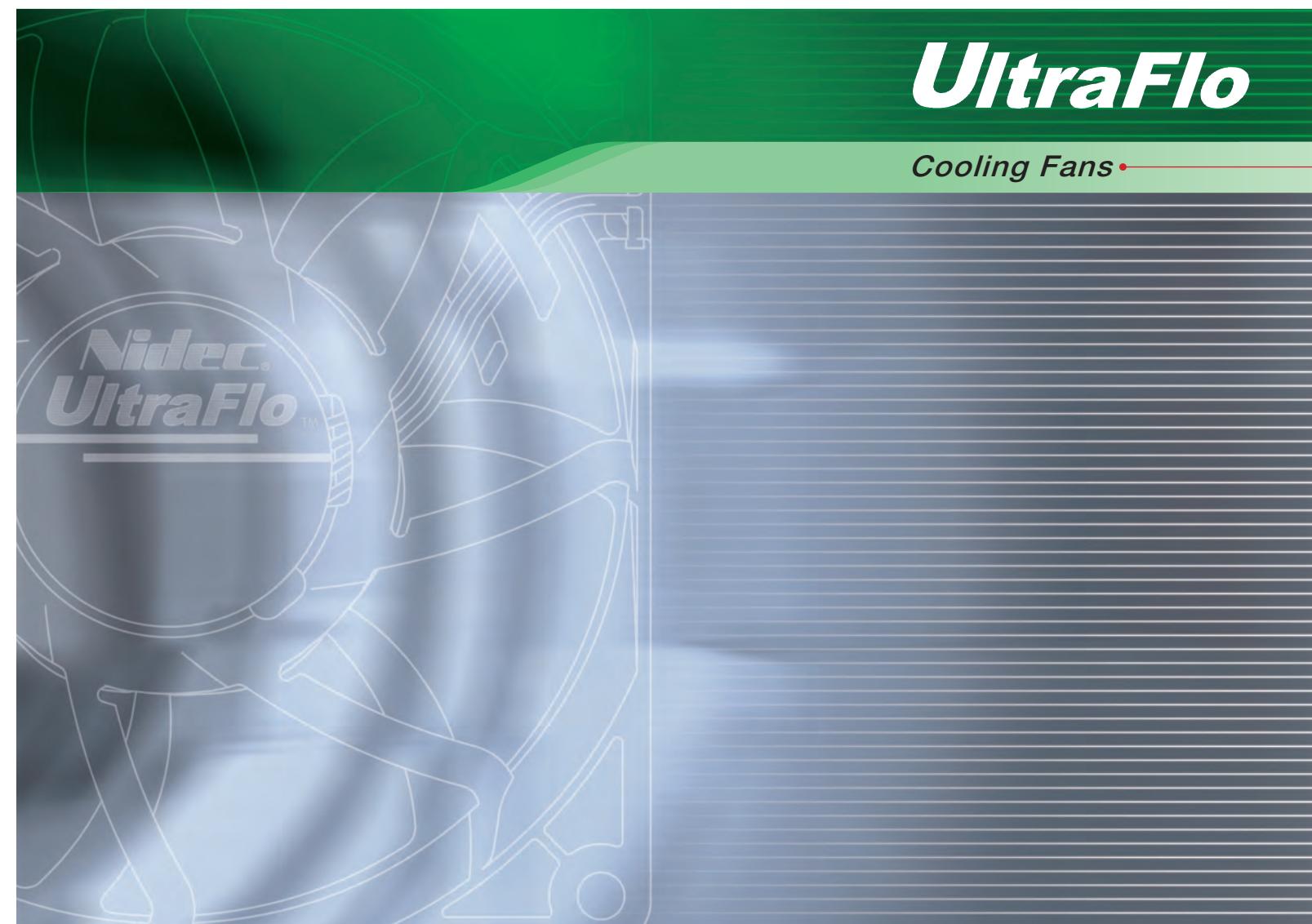


**Nidec**  
尼得科

All for dreams

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尼得科

All for dreams



NIDEC CORPORATION

SP150215H

日本电产株式会社

Computers and home appliances, whose quality has advanced rapidly in recent years, have been producing increasingly more heat. Fan motors are essential to cool such products, and have seen their usage and application widen more than ever before.

This recent market trend requires fan motors to possess higher cooling and noise reduction capabilities. The fan motors in the Nidec **UltraFlo** series, an advanced version of conventional motors, are not only excellent in airflow creation, static pressure control and efficiency, they are also low-noise, low-vibration and eco-friendly motors that meet all the market needs.

## Nidec 尼得科 **UltraFlo™ Cooling Fans**

近年来，随着电脑、家电等产品的性能不断提高，其发热量也日趋增大。要冷却这些产品就必须使用风扇马达，风扇马达的应用领域可谓日益广泛，其用途也日趋多样化。

在这一趋势下，市场对风扇马达在冷却性和静音性等性能方面的要求也越来越高。

Nidec **UltraFlo**系列风扇与以往的风扇马达相比，性能表现更为卓越，同时具有高风量、高静压、高功效和低噪音、低振动、绿色环保的特点，能够全面满足各种市场需求。

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## 型号说明 Explanation of Model Numbers

**U 40 S 12 B S1 A 5 - 01 A01**

### ① 种类 Type

F	Fan/Heatsink Combination
G	Blower
GW	MIW (motorized impeller wheel)
H	Hybrid - Open Flange
R	DICR - Open Flange
S	DICR - Closed Flange
T	Tube Axial - Open Flange
I	Tube Axial - Single Flange
U	Tube Axial - Closed Flange
V	Vane Axial - Open Flange
W	Vane Axial - Closed Flange
Y	172 mm - Round Housing
X	172 mm - Flat Housing
YV	172 mm - Round Housing with vane
XV	172 mm - Flat Housing with vane

### ② 尺寸 Size

25	25 mm
30	30 mm
35	35 mm
40	40 mm
42	42 mm
50	50 mm
51	51 mm
59	59 mm
60	60 mm
70	70 mm
76	76 mm
80	80 mm
92	92 mm
93	93 mm
97	97 mm
12	120 mm
17	172 mm

### ③ 厚度 Thickness

U	3 mm
F	4 mm
M	5 mm
N	7 mm
X	10 mm
R	15 mm
G	20 mm
T	25 mm
S	28 mm
B	30 mm
C	32 mm
D	33 mm
E	38 mm
I	48 mm
L	51 mm
W	56 mm
Q	70 mm
K	76 mm
H	80 mm
J	100 mm

### ④ 电压 Voltage

03	3.3 V
05	5 V
07	7 V
12	12 V
18	18 V
24	24 V
36	36 V
48	48 V

### ⑤ 轴承构造 Bearing Type

B	滚珠轴承 Ball Bearings
D	FDB 轴承 FDB
M	<b>NBRX</b> 型 <b>NBRX</b> type

### ⑥ 速度 Speed

L	Low
M	Medium
H	High
G	Grand
U	Ultra
S1, S2, S3 … Special *	*
*其他速度 Others	

### ⑦ 世代 Generation

Sequential A, B, C  
Reserved for next generation  
(new motor, core, etc.)  
Single & Two phase: A, B, C, ...,  
Three phase: M, N, P, Q, ...,

### ⑧ 叶片数 Blade Count

叶片数 (1个字)  
One Digit for # of blades

10片	:	A
11片	:	B
12片	:	C
:	:	:

DICR风扇为2个叶轮的叶片数和。

To use sum of two imp. for DICR.

### ⑨ 回路 Circuit

有回转速度反馈控制

Feedback Control Design(01-50)

01	Standard
02	Tachometer
03	Locked Rotor Alarm
04	Trip Speed Alarm
05	Tachometer + Locked Rotor Alarm
06	PWM
07	PWM + Tachometer
08	PWM + Locked Rotor Alarm
09	PWM + Trip Speed Alarm
10	Thermal
11	Thermal + Tachometer
12	Thermal + Locked Rotor Alarm
13	Thermal + PWM
14	Thermal + PWM + Tachometer
15	PWM + tach + low tach output under locked rotor condition

无回转速度反馈控制

Without Feedback Control Design(51-99)

51	Standard
52	Tachometer
53	Locked Rotor Alarm
54	Trip Speed Alarm
55	Tachometer + Locked Rotor Alarm
56	PWM
57	PWM + Tachometer
58	PWM + Locked Rotor Alarm
59	PWM + Trip Speed Alarm
60	Thermal
61	Thermal + Tachometer
62	Thermal + Locked Rotor Alarm
63	Thermal + PWM
64	Thermal + PWM + Tachometer
65	PWM + tach + low tach output under locked rotor condition

### ⑩ 后缀 1 Suffix 1

Customer code + rev.

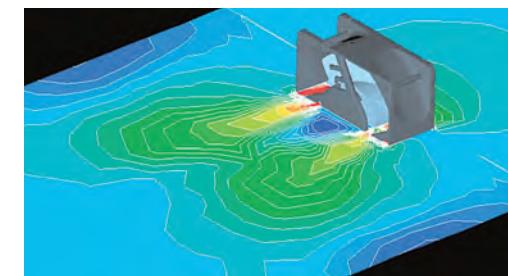
5 Digits Maximum

## 轴流风扇的种类 Axial Flow Fans

根据不同的用途, UltraFlo 轴流风扇主要可分为三种:

### (1) 管道轴流风扇

普通的风扇马达。由于轴流风扇排出的气流带旋转, 所以如下图所示, 气流会向外扩散。管道轴流风扇排气范围广、风量大, 适用于换气冷却。低速回转方式还可用于数码家电、音响等要求超低噪音的设备。



【管道轴流风扇流速分布图】  
[CG image of the flow velocity distribution of the tube axial fan]

**UltraFlo** axial fans have a lineup of three types of fans for different areas of usage.

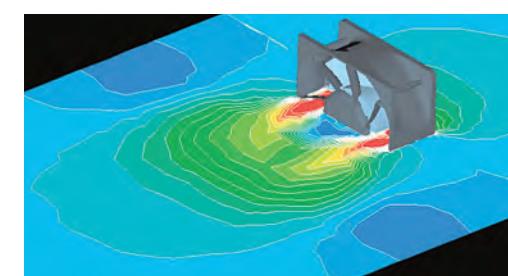
### (1) Tube Axial Fan

The exhaust flow from an axial fan contains swirling flows, which diffuse the exhaust air, as shown in the CG image below. The tube axial fan, a commonly used fan motor capable of exhausting large amounts of wind in wide areas, is suitable for ventilatory cooling. Also, rotating this motor at a low speed accommodates ultra low-noise usage such as digital home appliance and audio equipment.



### (2) 翼式轴流风扇

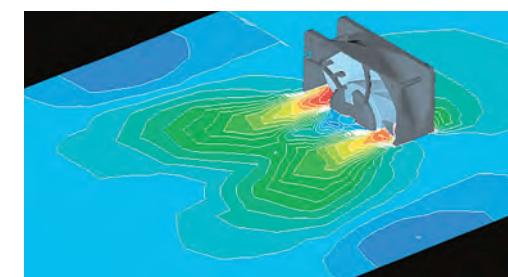
排气面装有静叶, 能够疏导排出的旋转气流, 防止气流扩散。由于该风扇能够集中有效地向被冷却物体送风, 所以适用于局部冷却。串联或并联使用几台风扇时, 由于静叶能够有效地起到整流作用, 所以也适合使用翼式轴流风扇。



【翼式轴流风扇流速分布图】  
[CG image of the flow velocity distribution of the vane axial fan]

### (3) 复合式轴流风扇

装有小型静叶, 兼具管道轴流风扇和翼式轴流风扇的特性。设计时通过将静叶控制在最少片数, 使其适用于从低速到高速的各种不同用途。



【复合式轴流风扇流速分布图】  
[CG image of the flow velocity distribution of the hybrid axial fan]



## 安装孔的形状 Types of the Mounting Flange

轴流风扇的安装孔有凸缘式和通孔式两种。

凸缘式：使用时用一侧的凸缘紧固，或将其嵌入用户配合凸缘形状设计的底盘中。

通孔式：使用时用贯穿螺栓紧固。



凸缘式  
Open flange



通孔式  
Closed flange

There are two types in the mounting holes of the DC tube axial fan, open flange type and closed flange type.

Open flange type is useful to screw down the flange or to fit it into the chassis designed by the customer.

Closed flange type is useful for screwing down using the close type bolt.

## NBRX™ 风扇 NBRX™ Fans

**NBRX** 是我公司新研发的烧结含油轴承系统的名称。这一全新的轴承系统具有比以往的烧结含油轴承更高的信赖性。

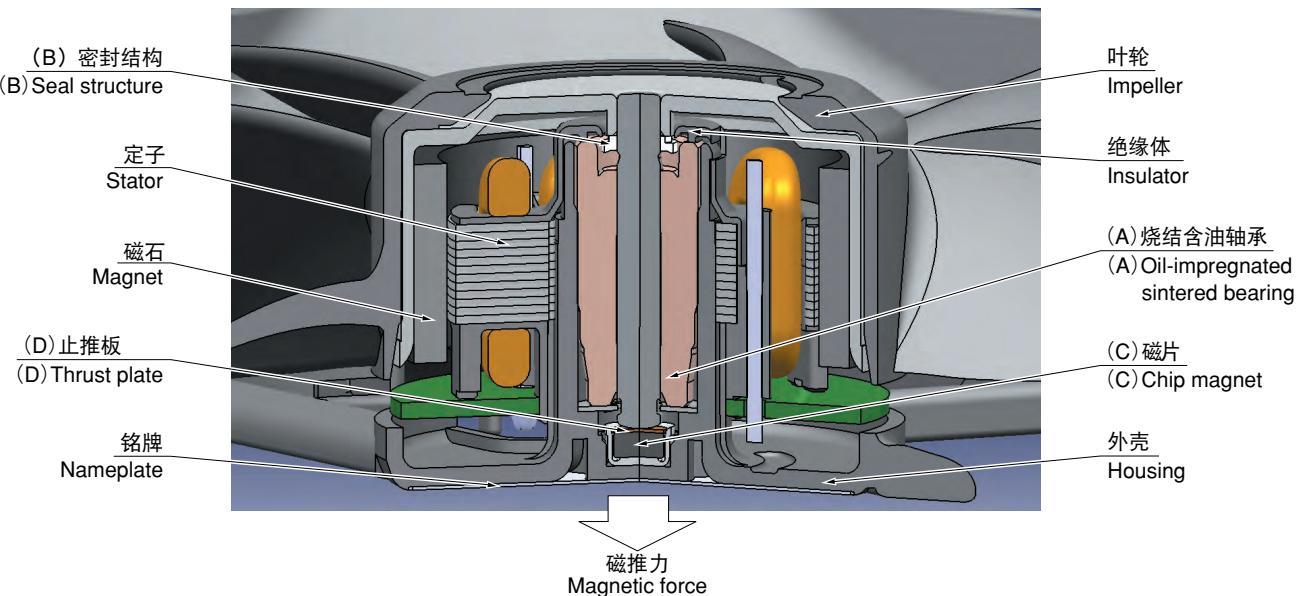
### 【NBRX 风扇的特点】

- ① 实现比以往的烧结含油轴承更长的使用寿命
- ② 通过磁片使旋转体保持稳定

**NBRX** is our company's newly developed, unprecedented oil-impregnated sintered bearing that possesses better reliability than the existing oil-impregnated sintered bearing.

### 【NBRX Fans' characteristics】

- ① It is more durable than the existing oil-impregnated sintered bearing.
- ② It uses a chip magnet that stabilizes its rotating body.



### 【NBRX 的技术要点】

新研发的 **NBRX** 产品通过以下新技术，提高风扇性能。

#### (A) 通过新研发的轴套，延长使用寿命

- 使用耐热性强的低蒸发油，降低油分损耗（降低 20%）
- 增大套筒轴承容量，增加含油量

#### (B) 通过改进密封结构，防止润滑油外溢

- 在原有的防漏油结构的基础上进行改良，采用新的密封结构，实现更高的油密封性

#### (C) 通过采用磁片，实现磁力吸引结构

- 强磁推力使旋转体在高速回转时也能保持稳定，且风扇的安装角度不受限制
- 对准定子/磁石间的磁力中心，减少磁振动

#### (D) 高性能止推板

- 采用高耐磨性的高性能树脂材料
- 具有强耐热性，可在高速回转及高温环境下使用

### 【Technical features of NBRX】

The following new technology enhanced the fan's performance in the newly developed product, **NBRX**.

#### (A) The newly developed sleeve to enhance the fan's longevity

- High heat-resistant, vaporization-resistant oil is used to reduce oil loss (by 20%).
- The size of sleeve bearing has enlarged, accommodating more oil.

#### (B) The new seal structure to prevent lubricant leakage

- A new seal structure, modified from the existing enhanced lubricant leakage prevention feature, was adopted to achieve better oil sealing capability.

#### (C) The magnetic aspiration structure with a chip magnet

- The strong magnetic force retains the fan's rotating body, stabilizing it even in high-speed rotation and yet enabling fan installation from any angle.
- The magnetic centers of the stator and the magnet are aligned, reducing magnetic vibration.

#### (D) The thrust plate made of high-quality sliding material

- A high abrasion-resistant, high-quality sliding material is used.
- The plate, highly heat-resistant, performs well under high-speed rotation and high temperature.

# 特殊控制功能 Special Control Functions

## 输出信号、速度控制

### A. 输出信号

可通过输出以下任意一种信号，将风扇的回转情况传达给外部设备。输出信号为集电极开路输出。有的小型机种可能无法附加信号。

#### (1) 输出信号的种类

##### ①回转速度信号

输出与风扇回转速度成正比的频率脉冲信号。叶轮回转一周，输出2个脉冲。可通过外部设备监视脉冲频率来掌握风扇回转速度下降的情况。

##### ②锁定检测信号

风扇正常回转时为低位，叶轮被锁定时为高位。

注意：在风扇锁定状态下重启的机种，锁定检测信号可能会在重启过程中切换到高位或低位。

##### ③反向锁定检测信号

锁定检测信号的逆极性信号。

##### ④低回转检测信号

正常回转时为低位，风扇回转速度低于一定数值以下时为高位。标准情况下，阈值为定额回转速度的70%。由于该控制较上述输出信号更为复杂，所以仅适用于微机机种等高端机种。

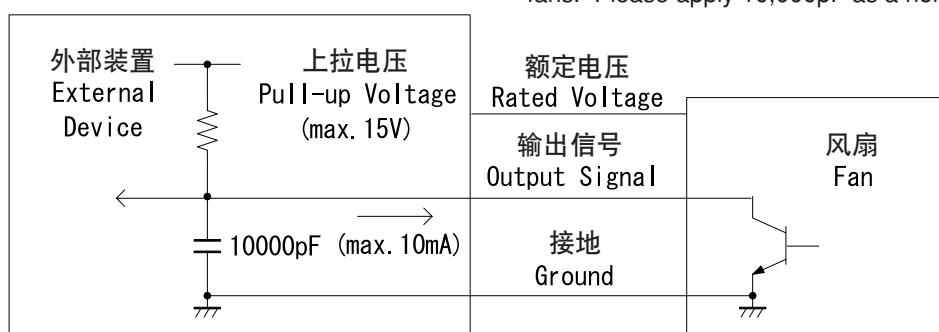
##### ⑤反向低回转检测信号

低回转检测信号的逆极性信号。

#### (2) 连接图

以下图为基准。

集电极开路式，上拉电压最大15V，吸收电流最大10mA。低位输出电压在吸收电流5mA时最大为0.5V，但热插拔风扇时则最大为0.8V。作为噪声滤波需附加10000pF。



## Output Signals and Speed Control Features

### A. Output Signals

Nidec DC fan models offer output signals, as specified below, that transmit their operating conditions to the external system. The signals are transmitted by open-collector output. Some small-size models may not be able to accommodate such signals.

#### (1) Types of Output Signals

##### ① Tachometer Signal

This signal is a pulse signal transmitted with the frequency in proportion to the fan's operating speed. Two pulses are transmitted per rotation. Monitoring the pulses' frequency at the system enables to know when the fan's operating speed has reduced.

##### ② Locked Rotor Detection Signal

The level of this signal is low when the fan is operating normally, and becomes high when the fan's impeller is locked. Please remember that, in some models that restart with their fans locked, the level of the locked rotor detection signal may switch to high or low during the restart process.

##### ③ Reverse Lock Detection Signal

This signal is the opposite of the locked rotor detection signal.

##### ④ Trip Speed Alarm

The level of this signal becomes high when the fan's speed becomes below a specific value at a low level during normal revolution. With standard fans, the threshold RPM value is 70% of the rotating speed. This control, which is more complex than the previous output signals, is suitable to high-end models only.

##### ⑤ Inverted Trip Speed Alarm

This signal is the opposite of the trip speed alarm.

#### (2) Connection Diagram

In the standard diagram of an open connector type below, the pull-up voltage is maximum 15V, and the minimum sink current is 10mA. The maximum output voltage at the low level is 0.5V when sink currency is 5mA. However, the maximum voltage rises up to 0.8V with hot plugging fans. Please apply 10,000pF as a noise filter.

## B. 速度控制

可根据需要改变风扇的回转速度。

#### (1) 通过温度感应器控制速度

风扇内部或外部装有热敏电阻，根据热敏电阻检测出的温度改变回转速度。可调节温度与回转速度间的关系。

#### (2) 通过双速控制信号控制速度

从风扇外部装置将高位或低位信号输入风扇，可通过该信号将风扇的回转速度在两个级别间切换。这两个回转速度可进行调整。

#### (3) 通过 PWM 信号控制速度

从风扇外部装置将 PWM (Pulse Width Modulation, 脉冲宽度调制) 信号输入风扇，可通过改变 PWM 信号的占空比来改变风扇的回转速度。

### C. 反馈控制

所谓反馈控制，是指比较实际回转速度与目标回转速度间的差距并调整使两者一致的功能。风扇即使受到负载或外加电压变化等意外干扰，也能通过反馈控制功能有效地进行修正，从而提高回转速度的精确度。但有无反馈控制功能会使风扇在风量-静压特性和风量-电流值等性能上有差异。此外需要注意的是，由于在反馈控制下，电源电压即使产生变化，回转速度也会自动修正，所以反馈控制不适合需要通过改变电源电压来改变回转速度的情况使用。

### D. 其他

通过用电阻向风扇提供电源来降低风扇电源电压、减慢回转速度时，如果电源电压过低，则风扇的回转会不稳定。

## B. Speed Control

Nidec DC fans' operating speed can be changed as necessary.

#### (1) Speed Control by Temperature Sensor

With a thermistor built in or attached outside the fan, its rotating speed can be changed based on the temperature that the thermistor detects. The fan's operating speed can be adjusted based on the temperature that the thermistor detects.

#### (2) Speed Control by Dual Speed Control Signal

One can switch the fan's operating speed to high or low by inputting either a high-level or a low-level signal from a device outside the fan. The two speeds are adjustable.

#### (3) Speed control by PWM Signal

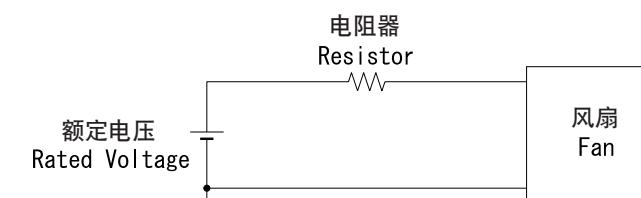
To change the fan's operating speed, input a PWM (Pulse Width Modulation) from an external device to change the signal's duty cycle.

### C. Feedback control

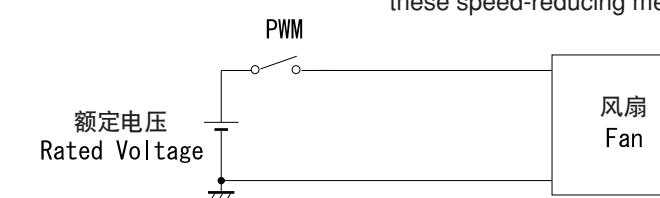
The feedback control is a function that compares the actual and the target speeds, and makes adjustments to match them. Even when unexpected disturbance such as change in load on the fan and applied voltage occurs, the feedback control effectively makes adjustments, enhancing the accuracy of the fan's rotation speed. However, please remember that, depending on whether the fan has the feedback control function or not, its performance in the air flow - static pressure, the air flow - current value, and other characteristics differs. Also, the feedback control, which automatically adjusts a speed when a power supply voltage changes, cannot be used to change a speed by adjusting a power supply voltage.

### D. Others

When lowering the fan's operating speed by reducing power supply voltage through a resistor, the fan will operate unstably if the voltage drops too low.



通过对风扇的电源电压进行 PWM 控制（频繁开关风扇）来调整回转速度的做法，会使风扇内部产生过电压而破坏电路。如果需要采用这一做法，请与我公司联系。



In addition, adjusting the fan's operating speed by controlling the fan's power supply voltage with PWM (i.e. by switching on and off the fan frequently) may cause to generate excessive voltage inside the fan, and to destroy its electronic circuit. Please contact us if you adopt any of these speed-reducing methods.

## 通用电力规格 Typical Electrical Features

### 【绝缘等级】

JIS-C-4004 (电力回转机械通则)	: E种 (120 °C)
UL-703	: Class A (105 °C)
CSA-C22.2	: Class A (105 °C)
DIN IEC380	: Class E (90 °C)
VDE-0806	: Class E (90 °C)
VDE-0700	: Class E (90 °C)

### 【绝缘耐压】

500V (50/60Hz) 1分钟

(注) 风扇电源端子或引线导电体部分 (2条引线短路) 与机架间。

### 【绝缘电阻】

500V时, 10M Ω以上

(注) 风扇电源端子及引线导电体部分 (2条引线短路) 与机架间。

### 【保护方式】

#### ○热敏电阻式

一种利用热敏电阻的内部电阻发热的方式。有过电流通过时, 内部电阻变大, 电流减少, 从而防止风扇异常发热或被烧毁。

#### ○电流限制保护式

风扇马达被锁定、或出于某种原因回转速度变得异常低时切断马达驱动电流的方式。这时, 风扇会在几秒钟后自动重启。

#### ○切断式

风扇马达被锁定、或出于某种原因回转速度变得异常低时切断马达驱动电流的方式。切断后, 需先关闭电源, 再打开电源重启。

#### ○阻抗式

对马达绕组线加以规定、使风扇马达绕组线固有的阻抗(交流电阻)保持在绝缘等级中规定的温度上升值以下的方式。

### 【逆电压保护】

即使额定电压12V时反电势达到15V、额电电压24V时反电势达到30V、额电电压48V时反电势达到65V, 也不会发生异常。

### 【Insulation Class】

JIS-C-4004	: Class E (120 °C)
UL-703	: Class A (105 °C)
CSA-C22.2	: Class A (105 °C)
DIN IEC380	: Class E (90 °C)
VDE-0806	: Class E (90 °C)
VDE-0700	: Class E (90 °C)

### 【Dielectric Strength】

500V (50/60Hz) for 1 minute

Between frame and leads (2 leads are short-circuited) or power source terminal.

### 【Insulation Resistance】

10M Ω min. at 500V

### 【Protection Method】

#### ○Thermistor Method

This protection method is based on a special type of thermistor to be used to protect against abnormal temperature rise inside fans. The thermistor to be used is sensitive to heat and if, for some reasons, the temperature inside the fan goes up, then the internal resistance of thermistor becomes larger which limits current to run the fan and controls the temperature inside the fan within a certain designated level and protects the fan from burning out.

#### ○Current Limit Method

This method is to cut off the driving current when the fan motor is locked or when the speed of the motor becomes abnormally low for some reason. In such cases, the fan motor automatically will reactivate within several seconds.

#### ○Shut Down Method

This method is to cut off the driving current when the fan motor is locked or when the speed of the motor becomes abnormally low for some reason. In such cases, the fan motor can be reactivated by turning it off and back on.

#### ○Impedance Method

This method is to control the temperature inside the fan within the specified limit of insulation class of winding wire by designing the coil winding to a certain impedance level.

### 【Reverse Voltage Protection】

The unit will not be damaged by reverse voltage up to 15V for rated voltage of 12V, up to 30V for rated voltage of 24V, or up to 65V for rated voltage of 48V.

## 标准连接器 (推荐连接器) Standard Connectors (Nidec's Recommendation)

连接器间距 Connector Pitch	制造商 Manufacturer	插座 Housing	插头 Contact
1.50mm	日本压着端子制造株式会社 J. S. T. Mfg. Co., Ltd	ZHR —*	SZH —002T — P0.5
2.00mm	日本压着端子制造株式会社 J. S. T. Mfg. Co., Ltd	PHR —*	SPH —002T — P0.5S
2.50mm	日本压着端子制造株式会社 J. S. T. Mfg. Co., Ltd	EHR —*	SEH —001T — P0.6
	泰科电子有限公司 Tyco Electronics AMP K. K.	XHP —*	SXH —001T — P0.6
2.54mm	MOLEX INC.	171822 —*	170262 — 1
		2695 —*	5159 *

注: \*处表示极数, 2极为2, 3极为3。

带连接器时, 使用与连接器规格匹配的引线。

< Remarks > \* mark means the number of pole.

For example, “-2” means 2 poles and “-3” means 3 poles.

In case of responding with connectors, leads adjusted to connectors should be used for fans.

## 注意事项 Special Remarks

1. 我公司可能会在满足所标明的特性范围内更改部分零部件等。
2. 保管时间请尽可能在6个月以内, 并避免在高温多湿的环境下保存。
3. 无刷风扇马达的风扇内部由绕组和IC等电路组成, 所以原则上无法对电源进行PWM控制。但电路部分调整后有可能可以使用PWM控制, 所以使用前请事先与我公司联系。
4. 带回转信号及回转停止信号使用时, 具体规格请事先与我公司联系。
5. 误接回转信号输出线或双速控制风扇的控制信号线会损坏风扇, 需加以注意。
6. 出于产品改良的需要, 我公司可能会在未事先通知的情况下更改部分产品特性。
1. Components to be used for each model of fans listed in this catalog may be changed for various reasons within the scope but will not affect the major characteristic parameters of fans specified.
2. It is generally required that a storage period of fans without any use be limited to six (6) months maximum. Storage of fans in high temperature and/or high humidity environment should be avoided.
3. In case fans are to be used with PWM control, we should be consulted in advance.
4. In case fans are to be controlled with speed signal or lock signal, we should be consulted in advance in order to finalize the specifications to be applied.
5. In case of fans with speed signal and/or two speed control device, special attention should be paid not to misconnect the lead wires of each device since misconnection could possibly result in serious damage to the fans.
6. We may change some of the major characteristic parameters of fans without any notice in order to improve the total level of the fan characteristics.

## 关于客户定制产品 Custom Fans

我公司可为客户的设备进行以下定制设计。

- (1) 与设备匹配的叶轮和外壳设计
- (2) 防潮、防锈、防尘设计
- (3) 带散热片(散热器)的风扇马达设计
- (4) 其他定制设计



Nidec designs custom fans per your system requirements. The four topics below are required for custom fans.

- (1) Design of impeller and housing which will fit your system requirements.
- (2) Environmentally protected fans. (Safe from humidity, rust or dust.)
- (3) Design of fan motors which radiate heat (Heat sink).
- (4) Nidec is constantly looking at new specifications and requirements to improve our product lines.

## 关于环境保护工作 Environmental Approach

2006年7月1日，EU（欧盟）发布了有关限制使用电气电子设备中所含特定有害物质的RoHS指令。对于铅、镉、汞、六价铬、特定溴类阻燃剂PBB（多溴联苯）和PBDE（多溴联苯醚）等特定有害物质，除应用户要求不适用RoHS指令的产品以外，我公司产品均符合RoHS指令要求。

我公司不仅严格遵守法律法规，而且积极采取措施，努力减少、废止PVC（聚氯乙烯）、卤素等对环境有害的物质。

The RoHS Directive, which restricts the use of specific hazardous substances contained in electric and electronic devices, came into effect in the EU (European Union) on July 01, 2006. Based on the Directive, our company has already restricted the use of specific hazardous substances (lead, cadmium, mercury, and hexavalent cadmium) and specific brominated flame retardants (polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE)) on our products except for the ones not in compliance with the Directive due to our customers' requests. In addition to complying with relevant laws and regulations, we actively try to reduce and abolish the use of polyvinyl chloride (PVC), halogen and other substances that harm the environment.

## 关于特殊用途 Unintended usage of the products

本资料中所记载的产品专为普通电子设备（电脑、办公自动化设备、通讯设备、家电产品和检测设备等）设计、制造，并未考虑用于需要特别高品质和信赖性、其故障或误动会给人身安全、身体健康造成伤害或带来其他重大损失的设备（核力控制设备、航天设备、运输设备（汽车、电车、船舶等）、交通信号设备、燃料控制、医疗设备、各种安全装置等）（以下称为“特定用途”），也不作任何保证。需要用于特定用途的，请事先与我公司销售部门联系。

The products described in this document are designed and manufactured based on the intention that they will be used for general electronic devices and equipment (e.g. computers, office automation equipment, communications devices, home appliances and measuring equipment). This usage requires a specially high level of quality and reliability of the products, which are neither intended nor guaranteed to be used for any equipment whose failure or malfunction would cause damage to the human life or body or any other serious damage (e.g. nuclear power control devices, aerospace instrument, transportation machines (e.g. cars, trains and ships), traffic signals, fuel controllers, medical equipment and various safety devices). Please contact our sales personnel for any unintended usage of the products. Thank you.

## 风量的测定方法 How to measure the Air Flow - Static Pressure

### 【风量—静压特性 (P—Q 曲线)】

风扇的风量—静压特性图：用曲线表示因进风口及出风口所受压力的损失带来的风量和静压的关系图。

压力带来的损失（静压）为0时称为最大风量，压力损失（静压）最大时称为最大静压。

### 【Air Flow - Static Pressure characteristic (P - Q Curve)】

Fans air flow - static pressure characteristic diagram is the curve line which shows the relationship of the air flow and the static pressure caused by the pressure damage on the inlet and the outlet of the fan.

Maximum air flow is the statement when there is no pressure damage (static pressure =0). Maximum static pressure is named when the pressure damage (static pressure) is at its maximum.

### 【How to measure the P - Q Curve】

All of the models are measured by the equipment adopting the Double Chamber based on AMCA STANDARD 210(85). This method is qualified to JIS. The reason for this is that there is evidence of being able to use the Double Chamber method in the interpretation written below. This interpretation introduce the way to measure the small air flow that has difficulty in calculation and its method is regulated by JIS B 8830 (adverse wind machine examination and testing methods).

#### ○Double Chamber

相对独立的两个风洞之间装有测定风量用的喷嘴（以下简称喷嘴），被测定的风扇装在装置的入口处。

通过喷嘴的风量通过测定喷嘴前后的压力差并加以温度气压修正算出，同时也可测出风扇产生的静压。为使风扇前后的压力差为零时也能进行风量测定，辅助风机起到使喷嘴前后产生压力差的作用。

#### ○测定方法

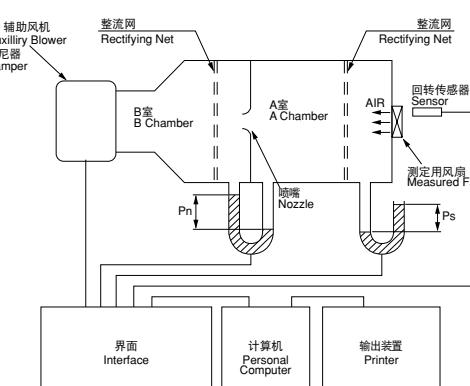
首先，关闭所有喷嘴，并使测定风扇一侧的风洞处于密闭状态，从而测出最大静压。其次，打开喷嘴，自动控制辅助风扇及阻尼器，制造压力损失为零的环境，通过喷嘴直径及风洞间的压力差算出最大风量。将这一测出的最大风量除以指定的测定点数（我公司标准为10点）进行分割，并用辅助风机及阻尼器制造被分割的风量状态后，测定风量和静压。将该10个点联系起来的就是风量—静压特性图。

该测定均由计算机自动控制进行，风量和静压值也由计算机进行运算处理。

#### ○Measuring Method

Firstly, shut all of the nozzles and measure the maximum static pressure by shutting down the air hole fixed at the side of the measuring fan. Secondly, release the nozzle, make the environment of no pressure damage by automatically controlling the assistance blower and the damper. Then calculate the maximum air flow from the gap of the pressure between the air hole and the diameter of the nozzle. Measure the air flow and the static pressure by dividing the measured point (10 points is the standard in our company). This is appointed by measuring the maximum air flow and make the air flow statement of the divided number using the assistance blower or the dumber. Air flow - static pressure dialog is the thing which these 10 points are connected.

These measurements are arranged by the automatic control of the computer and the air flow - static pressure amount is arranged by the computers processor.



# 40×40×10mm Series

## 单位 Unit Notation

【新旧单位比较表 Old & New unit comparative table】

①新名称 New designation	SI单位表示方法 Notation by SI unit	②旧名称 Conventional designation	旧标记 Conventional notation	由②转换成① Translation from ② to ①
质量 (MASS)	g	重量 (NET WEIGHT)	g	—
电压 (VOLTAGE)	V	电压 (VOLTAGE)	V	—
电流值 (CURRENT)	A	电流值 (CURRENT)	A	—
耗电 (CONSUMING POWER)	W	耗电 (CONSUMING POWER)	W	—
回转速度 (RATED SPEED)	min <sup>-1</sup>	回转数 (RATED SPEED)	rpm	× 1
风量 (AIR FLOW)	m <sup>3</sup> /min	风量 (AIR FLOW)	m <sup>3</sup> /min	—
静压 (STATIC PRESSURE)	Pa	静压 (STATIC PRESSURE)	mmH <sub>2</sub> O, mmAq	× 9.8067
噪音 (SOUND LEVEL)	dB(A)	噪音 (SOUND LEVEL)	dB(A)	—
温度 (TEMPERATURE)	°C	温度 (TEMPERATURE)	°C	—

【风量换算表 Air Flow conversion table】

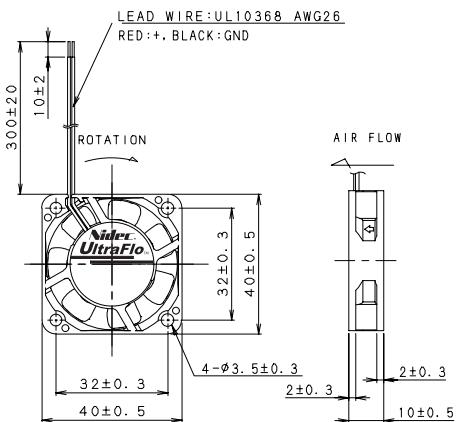
m <sup>3</sup> /min	CFM	L/s	L/min
1	3.531 × 10	1.666 × 10	1 × 10 <sup>3</sup>
2.831 × 10 <sup>-2</sup>	1	4.720 × 10 <sup>-1</sup>	2.831 × 10
6 × 10 <sup>-2</sup>	2.118	1	6 × 10
1 × 10 <sup>-3</sup>	3.531 × 10 <sup>-2</sup>	1.666 × 10 <sup>2</sup>	1

【压力 (静压) 换算表 Static Pressure conversion table】

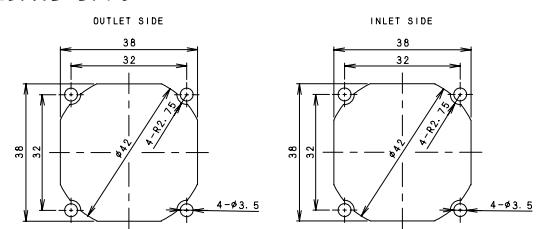
Pa (=N/m <sup>2</sup> )	mmH <sub>2</sub> O = mmAq	inchH <sub>2</sub> O = inchAq	mmHg	kgf/cm <sup>2</sup>
1	1.0197 × 10 <sup>-1</sup>	4.0146 × 10 <sup>-3</sup>	7.5006 × 10 <sup>-3</sup>	1.0197 × 10 <sup>-5</sup>
9.8067	1	3.9370 × 10 <sup>-2</sup>	7.3559 × 10 <sup>-2</sup>	1 × 10 <sup>-4</sup>
2.4909 × 10 <sup>2</sup>	2.54 × 10	1	1.8682	2.54 × 10 <sup>-3</sup>
1.3332 × 10 <sup>2</sup>	1.3619 × 10	5.3618 × 10 <sup>-1</sup>	1	1.3595 × 10 <sup>-3</sup>
9.8067 × 10 <sup>4</sup>	1 × 10 <sup>4</sup>	3.9370 × 10 <sup>2</sup>	7.3656 × 10 <sup>2</sup>	1



■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

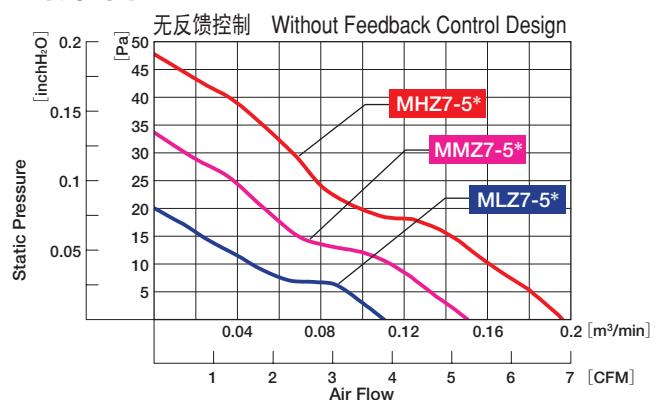
●无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m <sup>3</sup> /min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min <sup>-1</sup>
U40X05MLZ7-5*	5	4.25~5.75	0.10	0.11	3.88	20	0.08	0.50	14.5	5000
U40X05MMZ7-5*	5	4.25~5.75	0.17	0.15	5.30	34	0.14	0.85	21.0	6500
U40X05MHZ7-5*	5	4.25~5.75	0.23	0.19	6.71	47	0.19	1.15	25.5	8000
U40X12MLZ7-5*	12	7.0~13.8	0.05	0.11	3.88	20	0.08	0.60	14.5	5000
U40X12MMZ7-5*	12	7.0~13.8	0.07	0.15	5.30	34	0.14	0.84	21.0	6500
U40X12MHZ7-5*	12	7.0~13.8	0.10	0.19	6.71	47	0.19	1.20	25.5	8000

(注)数据均为额定电压时的代表特性。  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



# 40×40×28mm Series

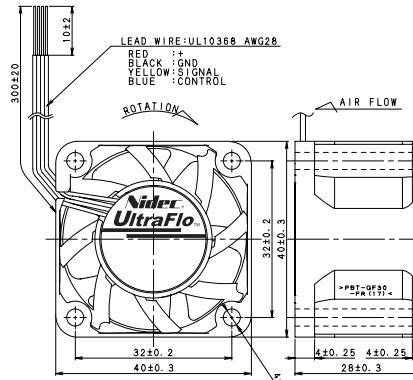


**使用材料 /**  
外壳: 塑料(UL:V-0)  
叶轮: 塑料(UL:V-0)  
**轴承构造 /**滚珠轴承  
**保护方法 /**电流限制  
**使用温度范围 /**-10°C~70°C  
**质量 /**50g

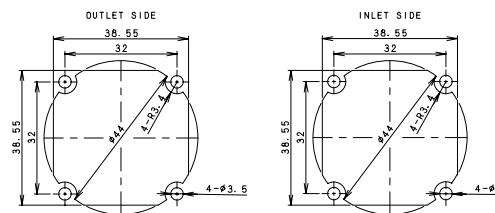
**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING /**Ball Bearings  
**PROTECTION /**Current limit  
**OPERATING TEMP /**-10°C~70°C  
**MASS /**50g

\* 可对应凸缘式。

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



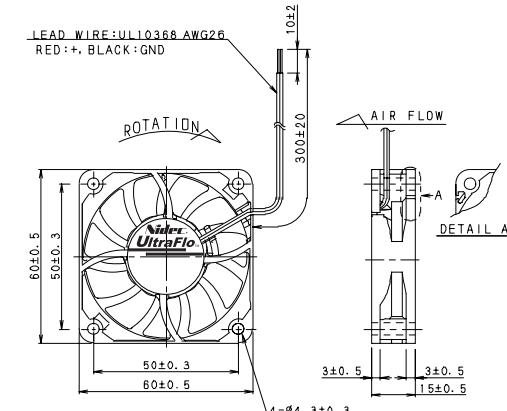
# 60×60×15mm Series



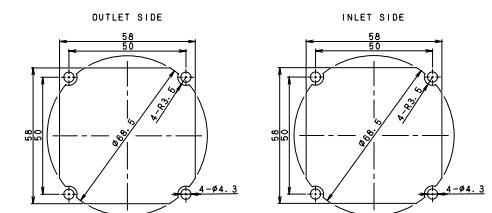
**使用材料 /**  
外壳: 塑料(UL:V-0)  
叶轮: 塑料(UL:V-0)  
**轴承构造 /**NBRX型  
**保护方法 /**电流限制  
**使用温度范围 /**-10°C~70°C  
**质量 /**40g

**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING /**NBRX Type  
**PROTECTION /**Current limit  
**OPERATING TEMP /**-10°C~70°C  
**MASS /**40g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



# 特性 Major Characteristic Parameters

## ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
W40S12BLA5-0*	12	7.0~13.8	0.10	0.28	9.9	74	0.30	1.20	31.5	7000
W40S12BMA5-0*	12	7.0~13.8	0.12	0.31	10.9	111	0.45	1.44	34.5	8500
W40S12BHA5-0*	12	7.0~13.8	0.17	0.42	14.8	155	0.62	2.04	40.0	10000
W40S12BGA5-0*	12	7.0~13.8	0.40	0.60	21.2	305	1.23	4.80	51.0	14500
W40S12BUA5-0*	12	7.0~13.8	0.55	0.67	23.7	400	1.61	6.60	53.0	16000
W40S12BS4A5-0*	12	7.0~13.8	0.73	0.75	26.5	475	1.91	8.76	55.0	18000

## ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
W40S12BLA5-5*	12	7.0~13.8	0.10	0.28	9.9	72	0.29	1.20	31.5	7000
W40S12BMA5-5*	12	7.0~13.8	0.12	0.31	10.9	101	0.41	1.44	34.5	8500
W40S12BHA5-5*	12	7.0~13.8	0.17	0.42	14.8	145	0.58	2.04	40.0	10000
W40S12BGA5-5*	12	7.0~13.8	0.40	0.60	21.2	305	1.23	4.80	51.0	14500
W40S12BUA5-5*	12	7.0~13.8	0.55	0.67	23.7	375	1.51	6.60	53.0	16000
W40S12BS4A5-5*	12	7.0~13.8	0.73	0.75	26.5	465	1.80	8.76	55.0	18000

(注) 数据均为额定电压时的代表特性。

Sound Level为距离吸入口表面1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.

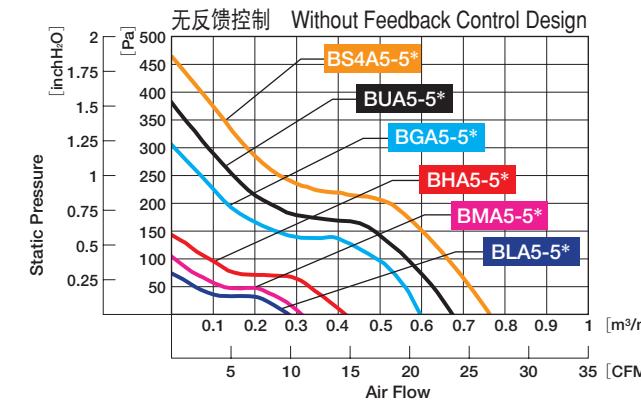
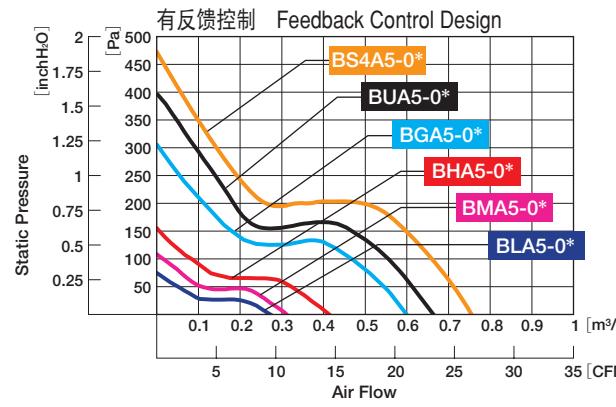
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

Insurance does not apply to power supply PWM.

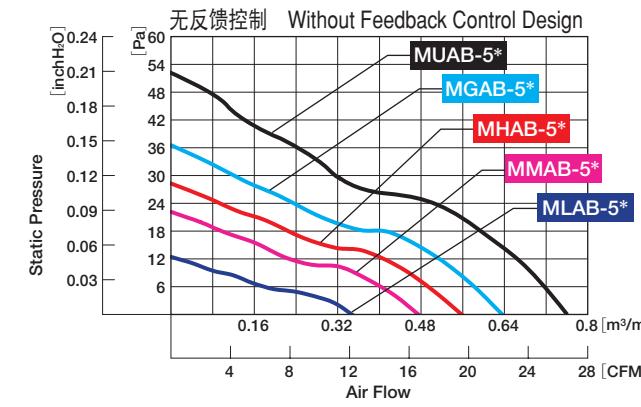
The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



## 特性图 P-Q Curve



(注) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## 60x60x25mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造/NBRX型**

**保护方法**/电流限制

**使用温度范围**/-10°C~70°C

**质量**/80g

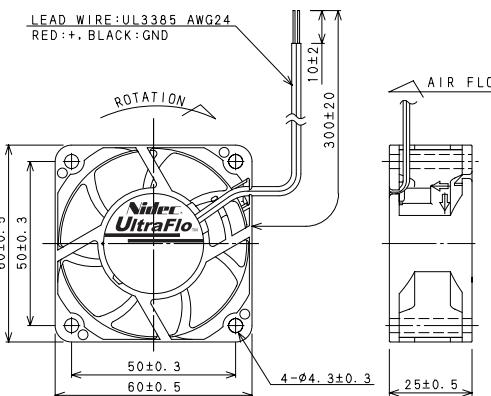
**BEARING/NBRX Type**

**PROTECTION**/Current limit

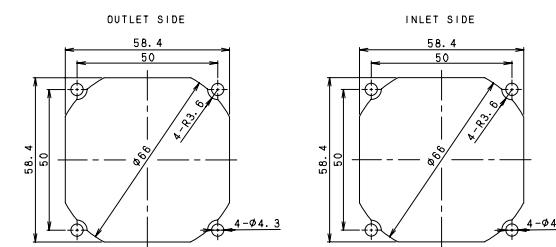
**OPERATING TEMP**/-10°C~70°C

**MASS**/80g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## 60x60x38mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造**/滚珠轴承

**保护方法**/电流限制

**使用温度范围**/-10°C~70°C

**质量**/120g

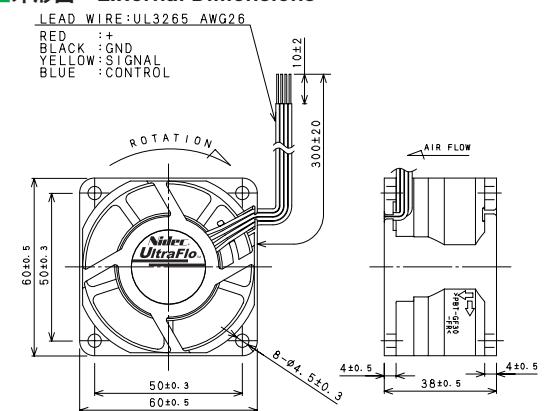
**BEARING**/Ball Bearings

**PROTECTION**/Current limit

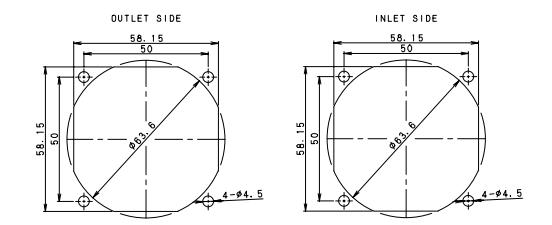
**OPERATING TEMP**/-10°C~70°C

**MASS**/120g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## ■ 特性 Major Characteristic Parameters

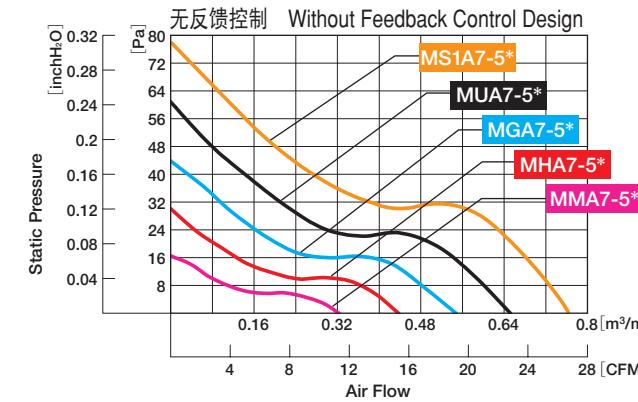
## ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
U60T12MMA7-5*	12	7.0~13.8	0.06	0.32	11.4	17	0.07	0.72	13.0	2400
U60T12MHA7-5*	12	7.0~13.8	0.09	0.44	15.4	30	0.12	1.08	22.5	3200
U60T12MGA7-5*	12	7.0~13.8	0.11	0.54	19.1	45	0.18	1.32	29.5	3900
U60T12MUA7-5*	12	7.0~13.8	0.16	0.65	22.8	61	0.24	1.92	32.5	4600
U60T12MS1A7-5*	12	7.0~13.8	0.21	0.76	26.8	79	0.32	2.52	37.0	5400

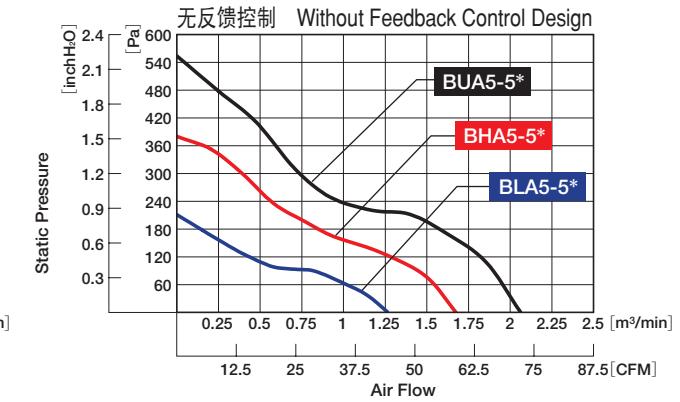
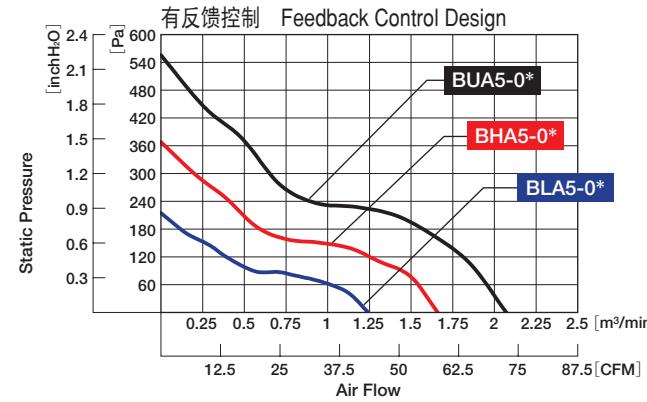
(注)数据均为额定电压时的代表特性。  
Sound Level为距离吸入口1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## ■ 特性图 P-Q Curve



## ■ 特性图 P-Q Curve



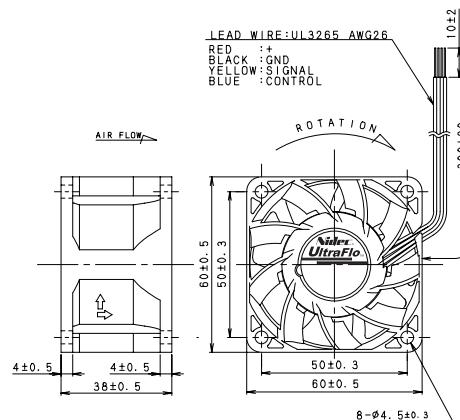
# 60x60x38mm Series



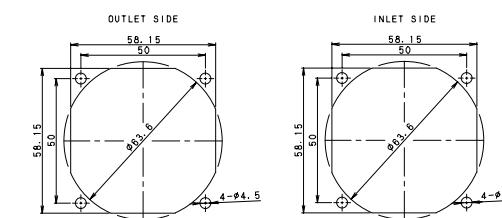
# 70x70x15mm Series



■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



**使用材料 /**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造 /**滚珠轴承  
**BEARING /**Ball Bearings

**保护方法 /**电流限制  
**PROTECTION /**Current limit

**使用温度范围 /**-10°C~70°C  
**OPERATING TEMP /**-10°C~70°C

**质量 /**140g

**使用材料 /**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造 /**NBRX型  
**BEARING /**NBRX Type

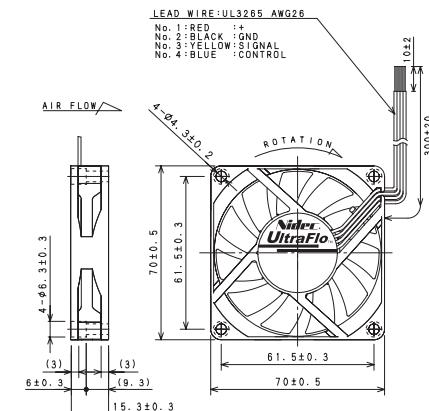
**保护方法 /**电流限制  
**PROTECTION /**Current limit

**使用温度范围 /**-10°C~70°C  
**OPERATING TEMP /**-10°C~70°C

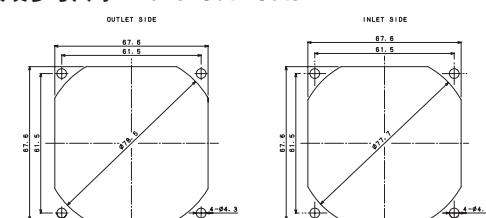
**质量 /**49g



■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



**使用材料 /**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造 /**NBRX型  
**BEARING /**NBRX Type

**保护方法 /**电流限制  
**PROTECTION /**Current limit

**使用温度范围 /**-10°C~70°C  
**OPERATING TEMP /**-10°C~70°C

**质量 /**49g

## 特性 Major Characteristic Parameters

● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V60E12BLA7-0*	12	7.0~13.8	0.50	1.10	38.8	165	0.66	6.00	51.5	7000
V60E12BMA7-0*	12	7.0~13.8	0.65	1.25	44.1	210	0.84	7.80	54.0	8000
V60E12BHA7-0*	12	7.0~13.8	1.05	1.50	53.0	290	1.17	12.60	58.5	9500
V60E12BGA7-0*	12	7.0~13.8	1.65	1.75	61.8	410	1.65	19.80	62.5	11000
V60E12BUA7-0*	12	7.0~13.8	2.10	1.95	68.9	480	1.93	25.20	64.5	12000

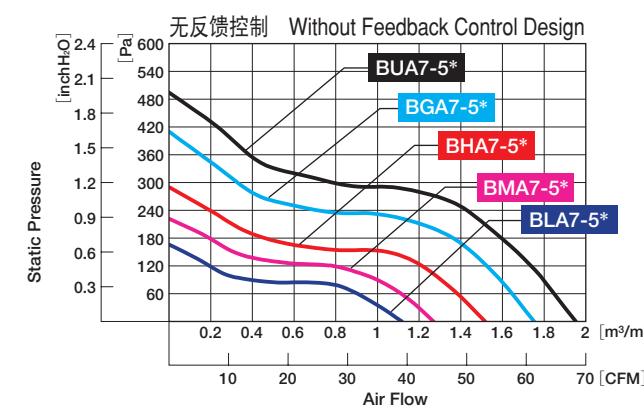
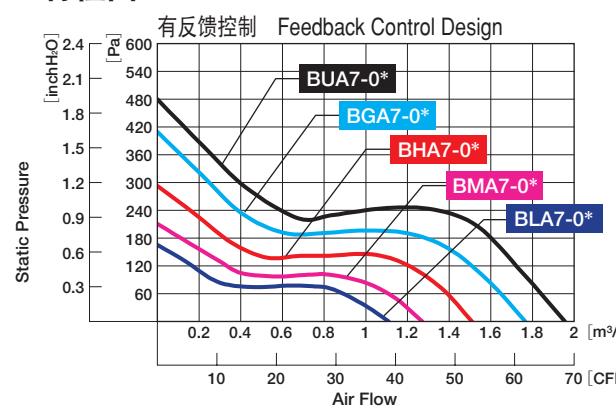
● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V60E12BLA7-5*	12	7.0~13.8	0.50	1.10	38.8	165	0.66	6.00	51.5	7000
V60E12BMA7-5*	12	7.0~13.8	0.65	1.25	44.1	220	0.88	7.80	54.0	8000
V60E12BHA7-5*	12	7.0~13.8	1.05	1.50	53.0	290	1.17	12.60	58.5	9500
V60E12BGA7-5*	12	7.0~13.8	1.65	1.75	61.8	410	1.65	19.80	62.5	11000
V60E12BUA7-5*	12	7.0~13.8	2.10	1.95	68.9	495	1.99	25.20	64.5	12000

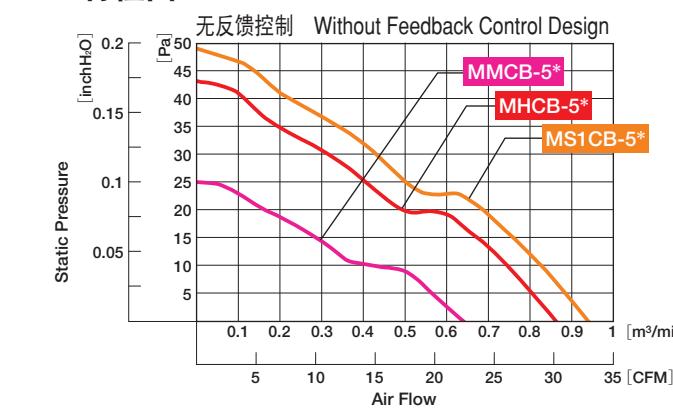
(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸入口侧表面1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



## 特性图 P-Q Curve



# 70×70×25mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**轴承构造** / **NBRX型**

**保护方法** / 电流限制

**使用温度范围** / -10°C~70°C

**质量** / 85g

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

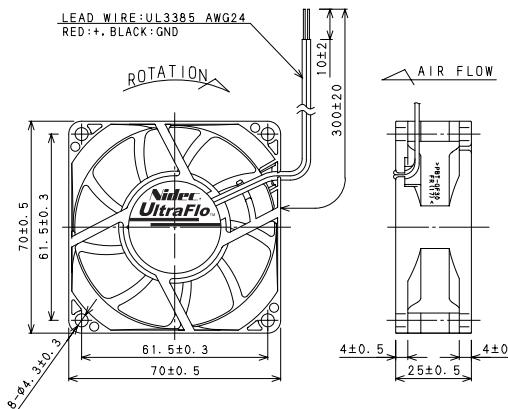
**BEARING** / **NBRX Type**

**PROTECTION** / Current limit

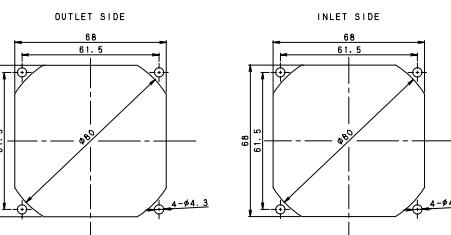
**OPERATING TEMP** / -10°C~70°C

**MASS** / 85g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



# 70×70×38mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**轴承构造** / 滚珠轴承

**保护方法** / 电流限制

**使用温度范围** / -10°C~70°C

**质量** / 150g

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

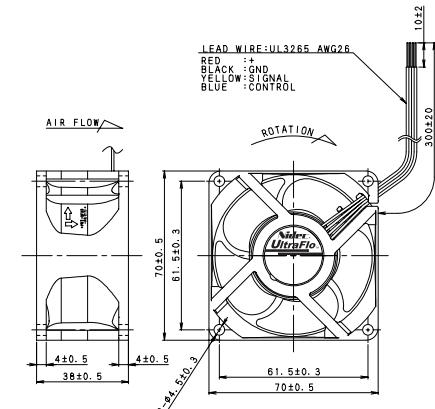
**BEARING** / Ball Bearings

**PROTECTION** / Current limit

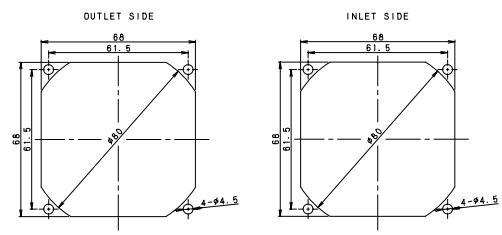
**OPERATING TEMP** / -10°C~70°C

**MASS** / 150g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Rated Input Power	Sound Level	Rated Speed	Maximum Air Flow	Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed		
				m³/min	CFM										
T70T12MLA9-5*	12	7.0~13.8	0.10	0.68	24.0	27	0.11	1.20	25.0	33.5	100	0.40	2.40	40.0	4500
T70T12MMA9-5*	12	7.0~13.8	0.14	0.82	28.9	38	0.15	1.68	29.5	49.4	190	0.76	4.80	42.5	5500
T70T12MHA9-5*	12	7.0~13.8	0.24	1.05	37.1	58	0.23	2.88	35.0	65.3	310	1.25	9.60	45.5	6500
														8500	
														13.20	
														56.0	
														10000	

(注)数据均为额定电压时的代表特性。

(Note) The data shows typical value at rated voltage.

Sound Level为距离吸入口处1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed
				V	V				
T70E12BLA5-5*	12	7.0~13.8	0.20	0.95	33.5	85	0.34	2.40	40.0
T70E12BMA5-5*	12	7.0~13.8	0.30	1.20	42.4	125	0.50	3.60	42.5
T70E12BHA5-5*	12	7.0~13.8	0.40	1.40	49.4	170	0.68	4.80	45.5
T70E12BGA5-5*	12	7.0~13.8	0.80	1.85	65.3	285	1.15	9.60	51.5
T70E12BUA5-5*	12	7.0~13.8	1.10	2.20	77.7	370	1.49	13.20	56.0
									10000

(注)数据均为额定电压时的代表特性。

\*

Sound Level为距离吸入口处1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.

\*

Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

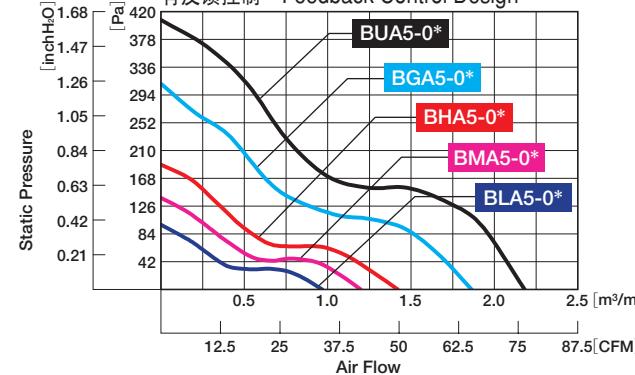
Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

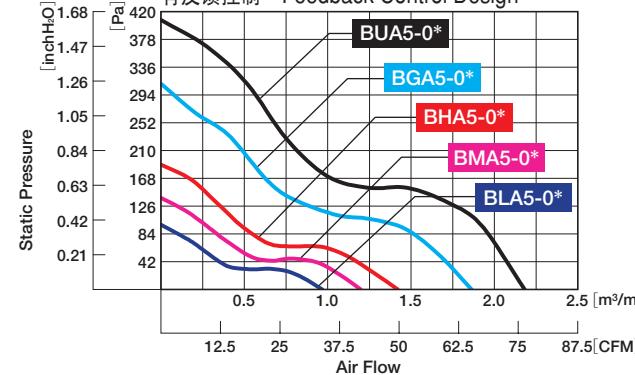
## 特性图 P-Q Curve

### 无反馈控制 Without Feedback Control Design



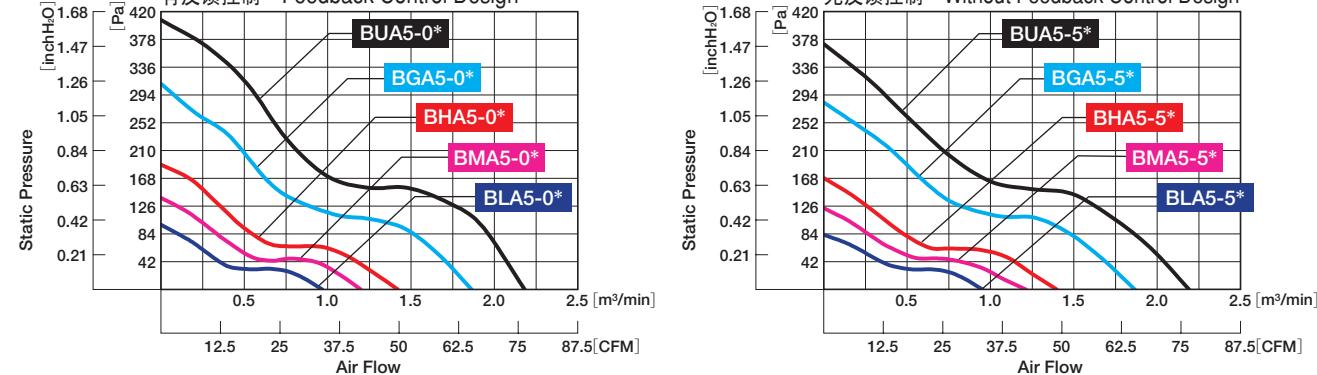
## 特性图 P-Q Curve

### 有反馈控制 Feedback Control Design

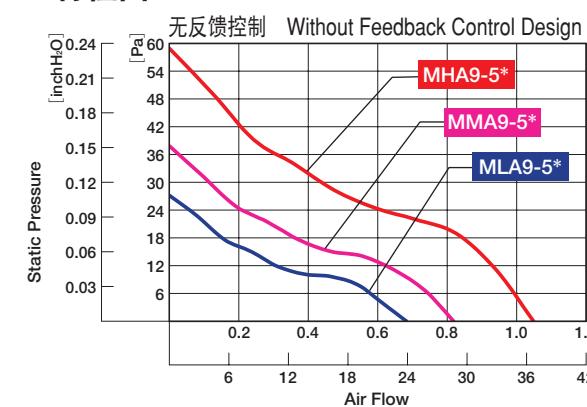


## 特性图 P-Q Curve

### 无反馈控制 Without Feedback Control Design



## 特性图 P-Q Curve



# 80×80×15mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造** / **NBRX型**

**保护方法** / 电流限制

**使用温度范围** / -10°C~70°C

**质量** / 55g

**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

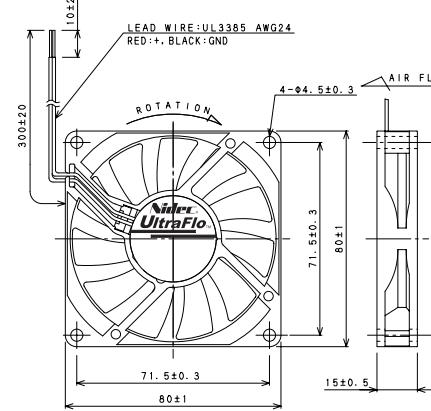
**轴承构造** / **NBRX Type**

**保护方法** / Current limit

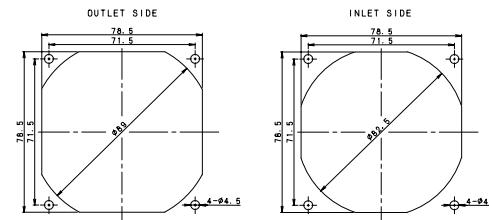
**使用温度范围** / -10°C~70°C

**质量** / 55g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



# 80×80×25mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造** / **NBRX型**

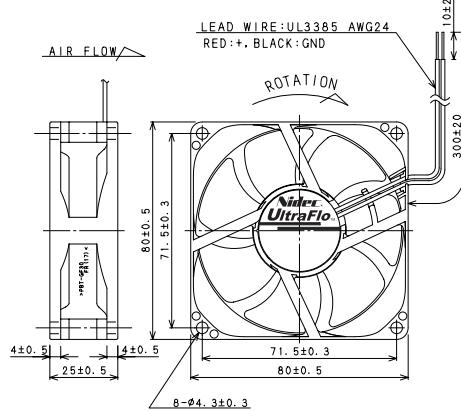
**保护方法** / 电流限制

**使用温度范围** / -10°C~70°C

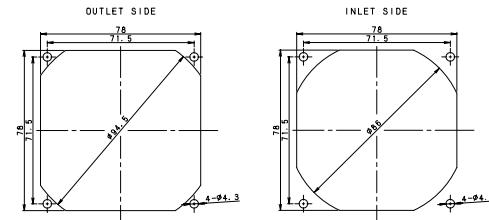
**质量** / 92g

\* 可对应通孔式。

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## ■ 特性 Major Characteristic Parameters

### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
U80R12MLAB-5*	12	7.0~13.8	0.12	0.62	21.89	15	0.06	1.44	24.0	2100
U80R12MMAB-5*	12	7.0~13.8	0.14	0.77	27.19	22	0.09	1.68	29.0	2550
U80R12MHAB-5*	12	7.0~13.8	0.22	0.97	34.25	32	0.13	2.64	34.0	3100

(注) 数据均为额定电压时的代表特性。

Sound Level为距离吸入口表面1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.

Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

(注) 数据均为额定电压时的代表特性。

Sound Level为距离吸入口表面1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.

Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

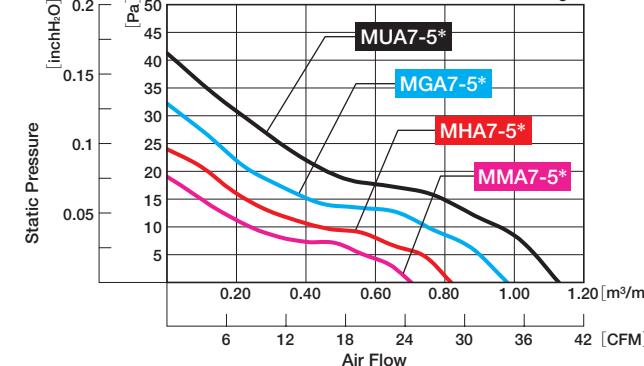
Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

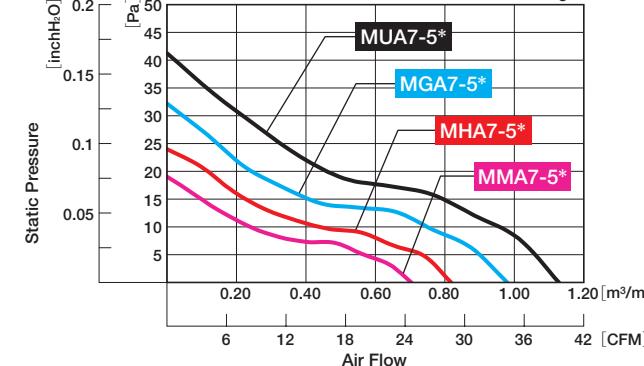
Contact us on any rated voltage not listed above.

## ■ 特性图 P-Q Curve

### 无反馈控制 Without Feedback Control Design



### 无反馈控制 Without Feedback Control Design



# 80×80×38mm Series



# 80×80×38mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造**  
滚珠轴承

**保护方法**  
电流限制

**使用温度范围**  
-10°C~70°C

**质量**/MASS /190g

**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

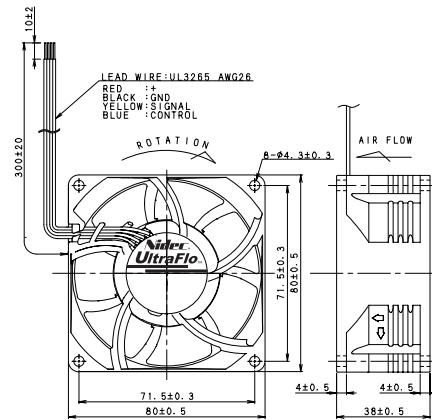
**轴承构造**  
滚珠轴承

**保护方法**  
电流限制

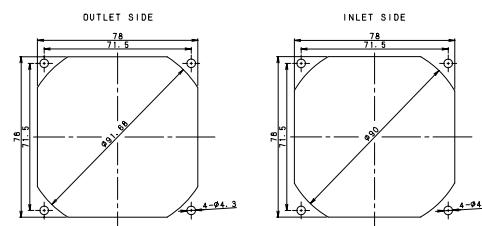
**使用温度范围**  
-10°C~70°C

**质量**/MASS /190g

■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

**轴承构造**  
滚珠轴承

**保护方法**  
电流限制

**使用温度范围**  
-10°C~70°C

**质量**/MASS /180g

**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

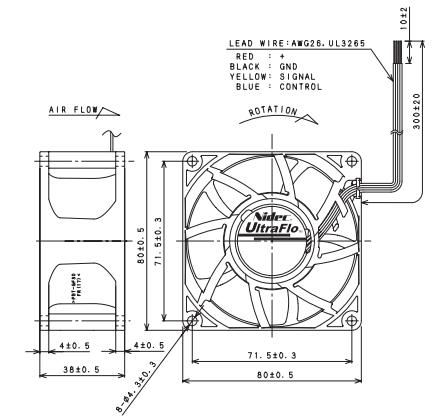
**轴承构造**  
滚珠轴承

**保护方法**  
电流限制

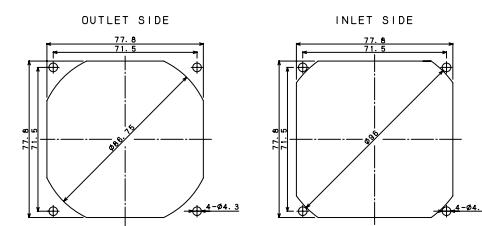
**使用温度范围**  
-10°C~70°C

**质量**/MASS /180g

■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

### ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
H80E12BLA7-0*	12	7.0~13.8	0.30	1.60	56.5	110	0.44	3.60	40.0	4200
H80E12BMA7-0*	12	7.0~13.8	0.40	1.80	63.6	140	0.56	4.80	44.0	4800
H80E12BHA7-0*	12	7.0~13.8	0.55	2.10	74.2	205	0.82	6.60	49.0	5500
H80E12BGA7-0*	12	7.0~13.8	0.90	2.40	84.7	235	0.94	10.80	54.0	6500
H80E12BUA7-0*	12	7.0~13.8	1.60	3.05	108	360	1.45	19.20	58.0	8000

### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
H80E12BLA7-5*	12	7.0~13.8	0.30	1.60	56.5	105	0.42	3.60	40.0	4200
H80E12BMA7-5*	12	7.0~13.8	0.40	1.80	63.6	130	0.52	4.80	44.0	4800
H80E12BHA7-5*	12	7.0~13.8	0.55	2.10	74.2	170	0.68	6.60	49.0	5500
H80E12BGA7-5*	12	7.0~13.8	0.90	2.40	84.7	235	0.95	10.80	54.0	6500
H80E12BUA7-5*	12	7.0~13.8	1.60	3.05	108	340	1.37	19.20	58.0	8000

(注) 数据均为额定电压时的代表特性。

(Note) The data shows typical value at rated voltage.

Sound Level为距离吸入口1m处的测定值。

Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

电源PWM非保证对象。

Insurance does not apply to power supply PWM.

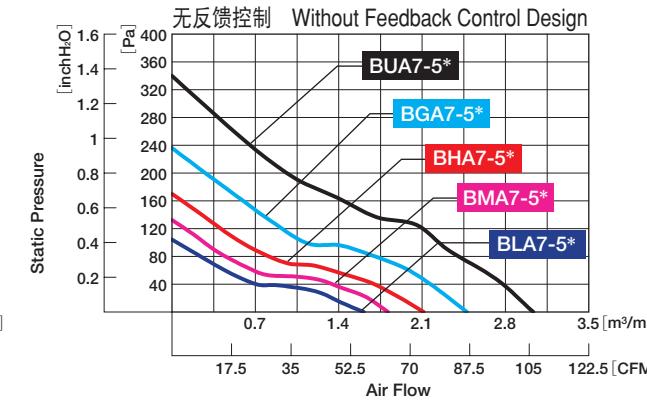
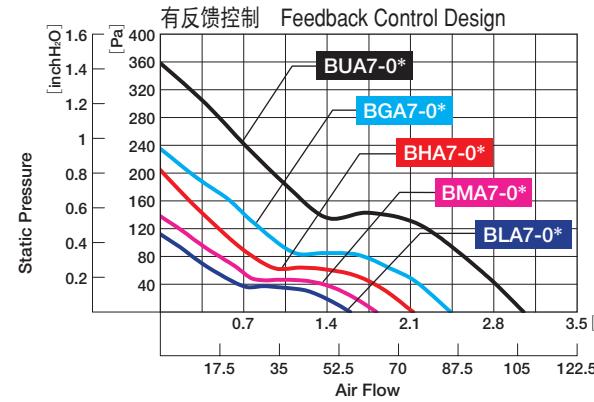
电源的电压波纹在额定电压±5%以下。

The range of voltage ripples for power supply is ±5%.

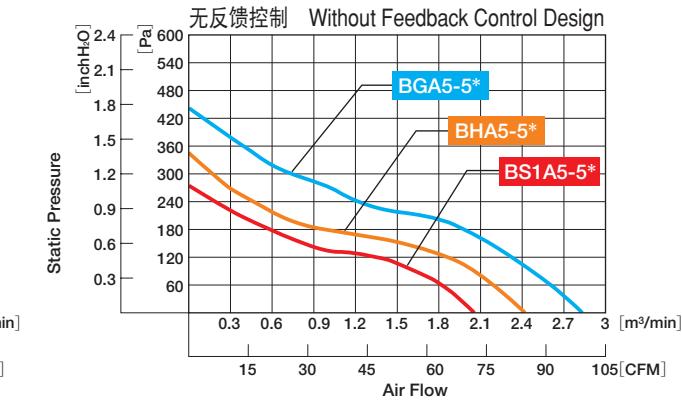
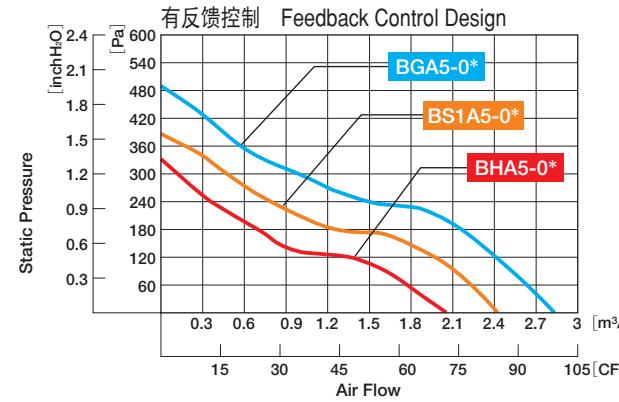
需使用上述以外的额定电压时请个别咨询。

Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



## 特性图 P-Q Curve



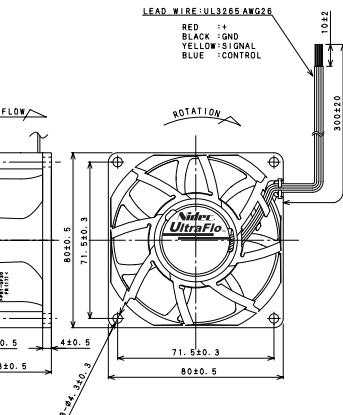
# 80×80×38mm Series



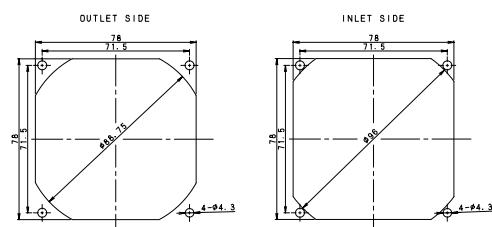
# 92×92×25mm Series



■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts

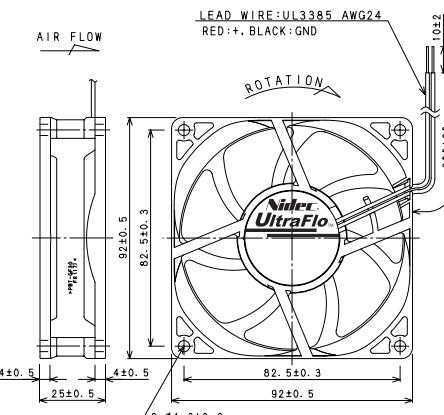


**使用材料 /**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)  
**轴承构造 /**滚珠轴承  
**保护方法 /**电流限制  
**使用温度范围 /**-10°C~70°C  
**质量 /**175g

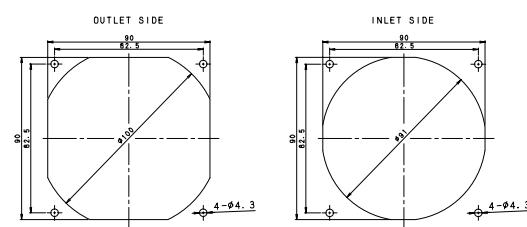
**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING /**Ball Bearings  
**PROTECTION /**Current limit  
**OPERATING TEMP /**-10°C~70°C  
**MASS /**175g



■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



**使用材料 /**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)  
**轴承构造 /**NBRX型  
**保护方法 /**电流限制  
**使用温度范围 /**-10°C~70°C  
**质量 /**112g

**MATERIAL /**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING /**NBRX Type  
**PROTECTION /**Current limit  
**OPERATING TEMP /**-10°C~70°C  
**MASS /**112g

\* 可对应通孔式。  
\* Closed flange type is also available.

## 特性 Major Characteristic Parameters

### ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V80E12BLA7-0*	12	7.0~13.8	0.30	1.65	58.3	130	0.52	3.63	43.5	4500
V80E12BMA7-0*	12	7.0~13.8	0.48	2.02	71.4	180	0.72	5.76	48.5	5500
V80E12BHA7-0*	12	7.0~13.8	0.75	2.36	83.3	240	0.97	9.00	53.0	6500
V80E12BGA7-0*	12	7.0~13.8	1.70	3.09	109	390	1.57	20.40	60.0	8500
V80E12BUA7-0*	12	7.0~13.8	2.84	3.71	131	540	2.17	34.08	64.0	10000

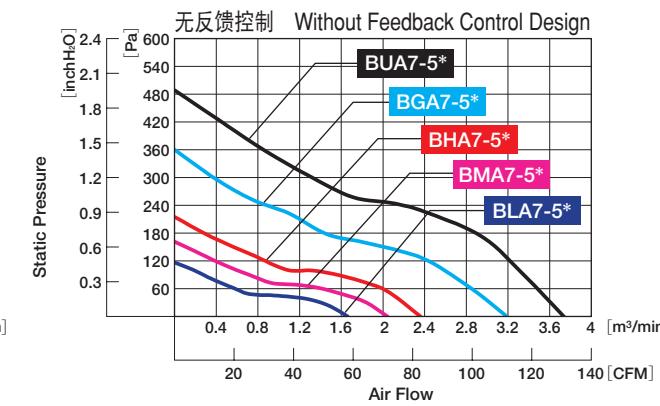
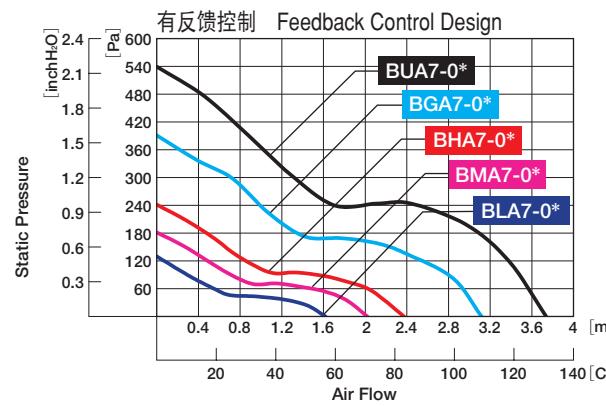
### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V80E12BLA7-5*	12	7.0~13.8	0.30	1.65	58.3	115	0.46	3.63	43.5	4500
V80E12BMA7-5*	12	7.0~13.8	0.48	2.02	71.3	160	0.64	5.76	48.5	5500
V80E12BHA7-5*	12	7.0~13.8	0.75	2.36	83.3	215	0.87	9.00	53.0	6500
V80E12BGA7-5*	12	7.0~13.8	1.70	3.09	109	360	1.45	20.40	60.0	8500
V80E12BUA7-5*	12	7.0~13.8	2.84	3.71	131	490	1.97	34.08	64.0	10000

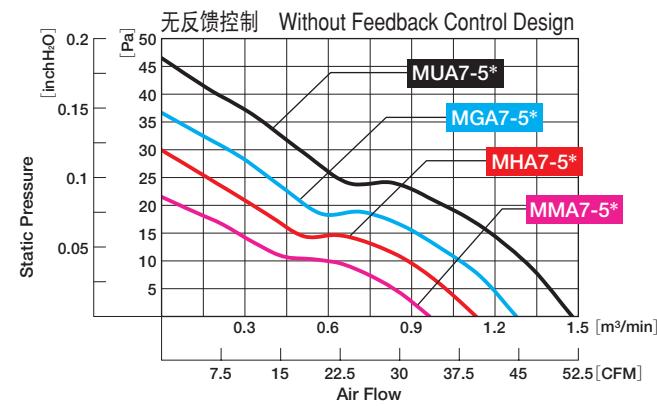
(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸入口1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



## 特性图 P-Q Curve



# 92×92×32mm Series

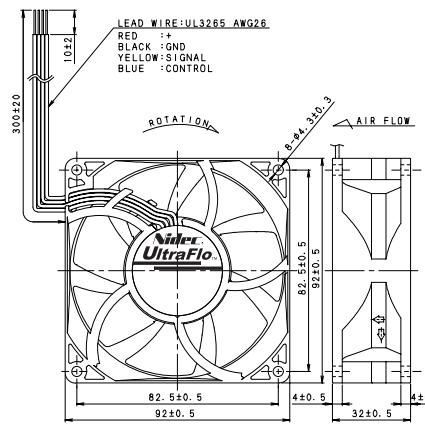
# 92×92×32mm Series



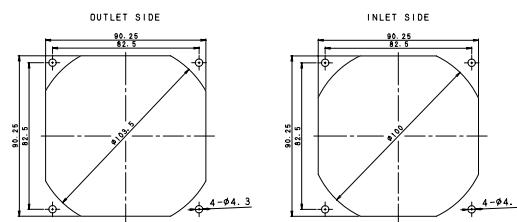
使用材料 /  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)  
轴承构造 / 滚珠轴承  
保护方法 / 电流限制  
使用温度范围 / -10°C~70°C  
质量 / 180g

MATERIAL /  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
BEARING / Ball Bearings  
PROTECTION / Current limit  
OPERATING TEMP / -10°C~70°C  
MASS / 180g

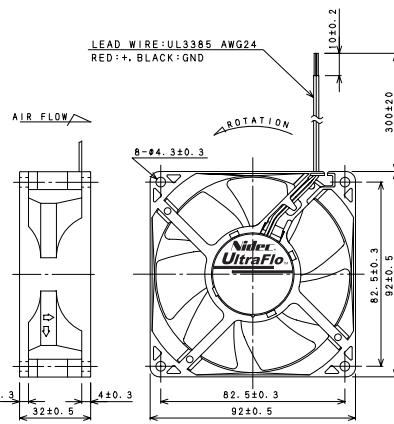
## ■ 外形图 External Dimensions



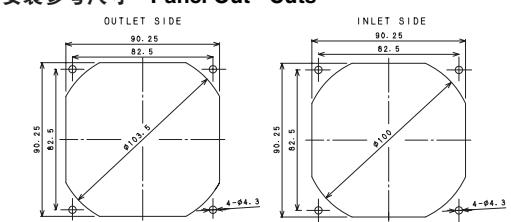
## ■ 安装参考尺寸 Panel Out - Cuts



## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

### ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
H92C12BLA7-0*	12	7.0~13.8	0.19	1.58	55.8	55	0.22	2.28	36.0	2850
H92C12BMA7-0*	12	7.0~13.8	0.31	1.93	68.1	85	0.34	3.72	42.5	3500
H92C12BHA7-0*	12	7.0~13.8	0.48	2.40	84.7	125	0.50	5.76	48.0	4300
H92C12BGA7-0*	12	7.0~13.8	0.78	2.75	97.1	150	0.60	9.36	52.0	5000
H92C12BUA7-0*	12	7.0~13.8	1.41	3.37	119	210	0.84	16.92	58.0	6000

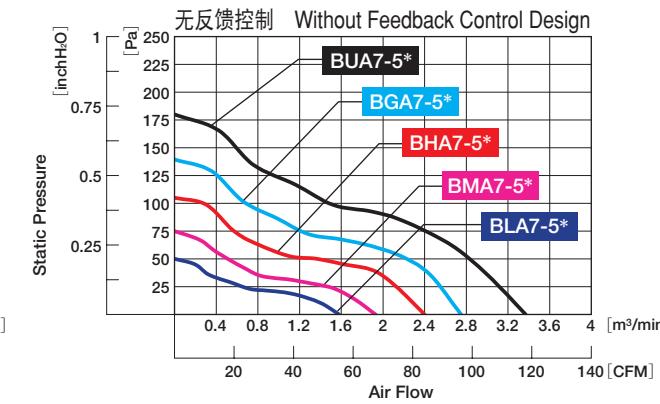
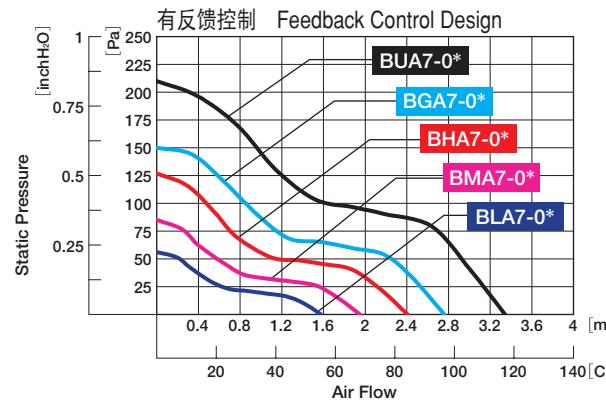
### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
H92C12BLA7-5*	12	7.0~13.8	0.19	1.58	55.8	50	0.20	2.28	36.0	2850
H92C12BMA7-5*	12	7.0~13.8	0.31	1.93	68.1	75	0.30	3.72	42.5	3500
H92C12BHA7-5*	12	7.0~13.8	0.48	2.40	84.7	105	0.42	5.76	48.0	4300
H92C12BGA7-5*	12	7.0~13.8	0.78	2.75	97.1	140	0.56	9.36	52.0	5000
H92C12BUA7-5*	12	7.0~13.8	1.41	3.37	119	180	0.72	16.92	58.0	6000

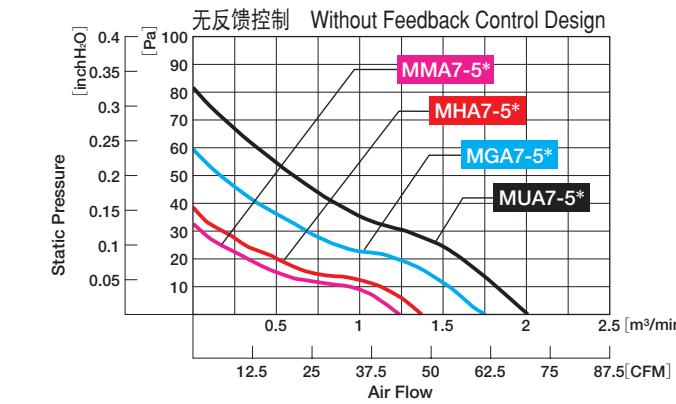
(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸入口1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve



## 特性图 P-Q Curve



# 92×92×38mm Series



使用材料 /  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

轴承构造 / 滚珠轴承

保护方法 / 电流限制

使用温度范围 / -10°C~70°C

质量 / 220g

MATERIAL /  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

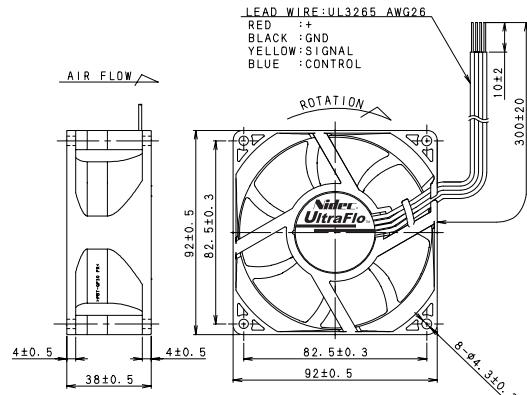
BEARING / Ball Bearings

PROTECTION / Current limit

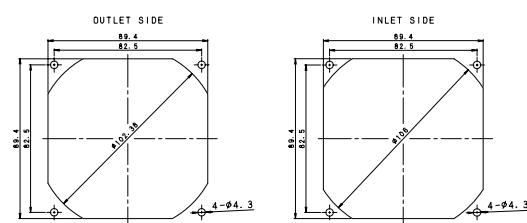
OPERATING TEMP / -10°C~70°C

MASS / 220g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



# 92×92×38mm Series



使用材料 /  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

轴承构造 / 滚珠轴承

保护方法 / 电流限制

使用温度范围 / -10°C~70°C

质量 / 216g

MATERIAL /  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

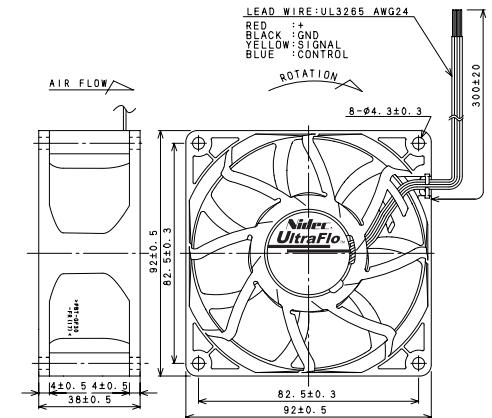
BEARING / Ball Bearings

PROTECTION / Current limit

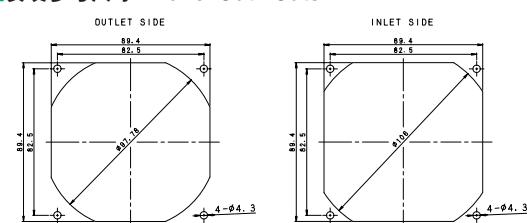
OPERATING TEMP / -10°C~70°C

MASS / 216g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

### ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
T92E12BMA7-0*	12	7.0~13.8	0.39	2.35	83.0	125	0.50	4.68	43.5	4000
T92E12BHA7-0*	12	7.0~13.8	0.61	2.80	98.9	170	0.68	7.32	47.5	4800
T92E12BGA7-0*	12	7.0~13.8	1.34	3.70	131	270	1.09	16.08	57.0	6300
T92E12BUA7-0*	12	7.0~13.8	2.09	4.21	149	325	1.31	25.08	60.0	7200

### ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
T92E12BMA7-5*	12	7.0~13.8	0.39	2.35	83.0	110	0.44	4.68	43.5	4000
T92E12BHA7-5*	12	7.0~13.8	0.61	2.80	98.9	145	0.58	7.32	47.5	4800
T92E12BGA7-5*	12	7.0~13.8	1.34	3.70	131	250	1.01	16.08	57.0	6300
T92E12BUA7-5*	12	7.0~13.8	2.09	4.21	149	300	1.21	25.08	60.0	7200

(注) 数据均为额定电压时的代表特性。

Sound Level 为距离吸入侧表面1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

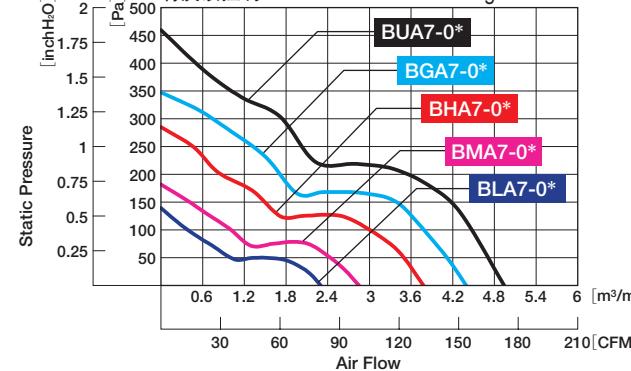
Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

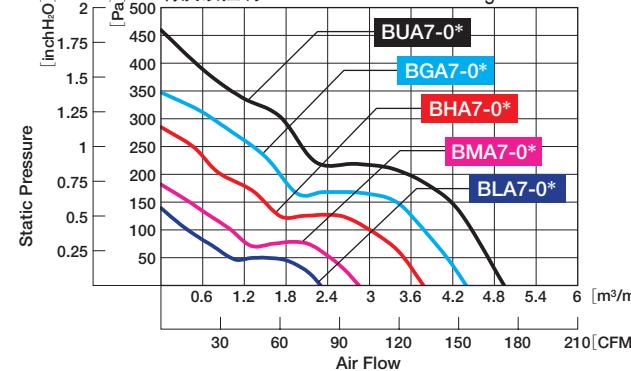
## 特性图 P-Q Curve

### 有反馈控制 Feedback Control Design



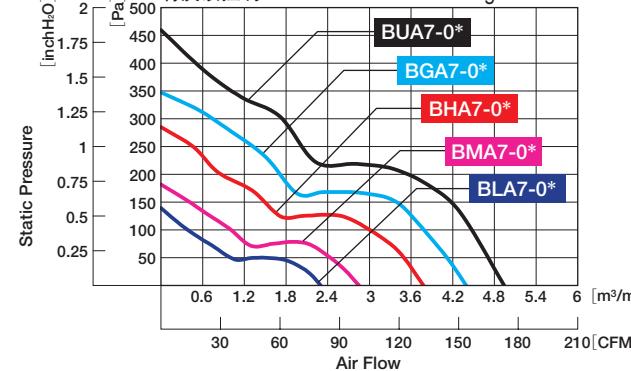
## 特性图 P-Q Curve

### 无反馈控制 Without Feedback Control Design



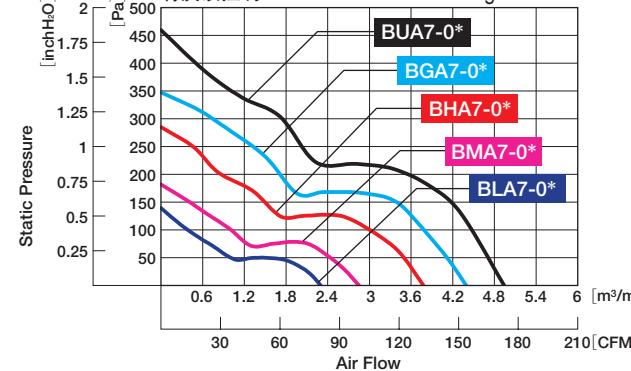
## 特性图 P-Q Curve

### 有反馈控制 Feedback Control Design



## 特性图 P-Q Curve

### 无反馈控制 Without Feedback Control Design



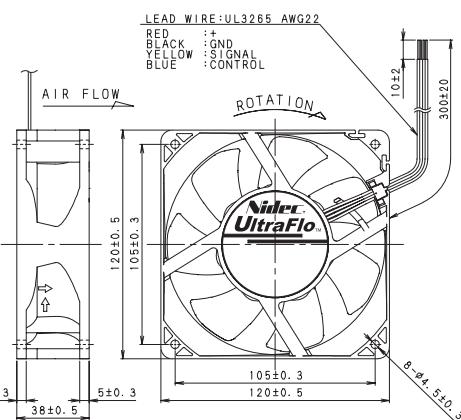
## 120×120×38mm Series

cUL<sup>®</sup> us CE TÜV

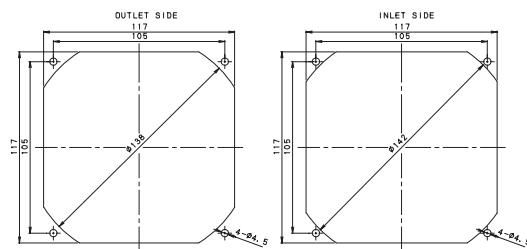
**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)  
**轴承构造** 滚珠轴承  
**保护方法** 电流限制  
**使用温度范围** -10°C~70°C  
**质量** 370g

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING** Ball Bearings  
**PROTECTION** Current limit  
**OPERATING TEMP** -10°C~70°C  
**MASS** 370g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



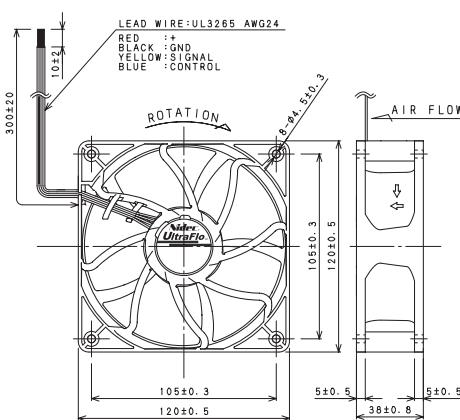
## 120×120×38mm Series

cUL<sup>®</sup> us CE TÜV

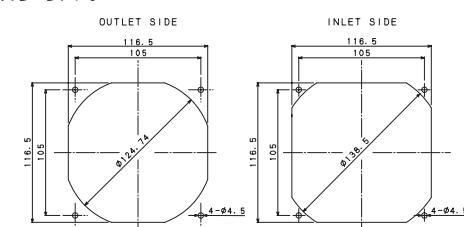
**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)  
**轴承构造** 滚珠轴承  
**保护方法** 电流限制  
**使用温度范围** -10°C~70°C  
**质量** 265g

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
**BEARING** Ball Bearings  
**PROTECTION** Current limit  
**OPERATING TEMP** -10°C~70°C  
**MASS** 265g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## ■ 特性 Major Characteristic Parameters

## ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
T12E48BHM7-0*	48	30.0~60.0	0.59	5.97	211	250	1.00	28.32	60.3	4800
T12E48BGM7-0*	48	30.0~60.0	0.82	6.64	234	305	1.22	39.36	63.0	5400

## ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
T12E48BHM7-5*	48	30.0~60.0	0.59	5.97	211	224	0.90	28.32	60.3	4800
T12E48BGM7-5*	48	30.0~60.0	0.82	6.64	234	280	1.12	39.36	63.0	5400

(注)数据均为额定电压时的代表特性。

Sound Level为距离吸入口1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(注) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V12E12BHB5-5*	12	10.2~13.8	1.12	5.20	184	270	1.09	13.44	60.0	5700
V12E12BGB5-5*	12	10.2~13.8	2.29	6.37	225	340	1.37	27.48	66.5	7000

(注) 数据均为额定电压时的代表特性。

Sound Level为距离吸入口1m处的测定值。

电源PWM非保证对象。

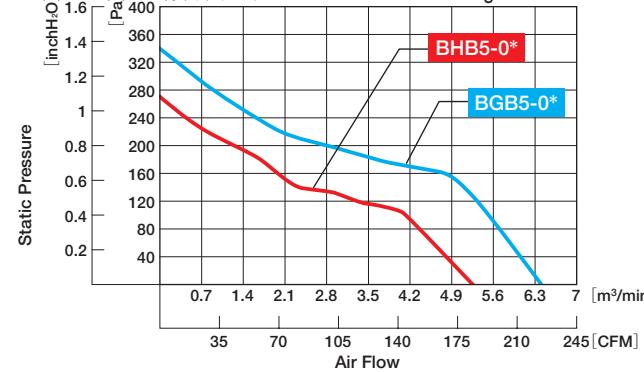
电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

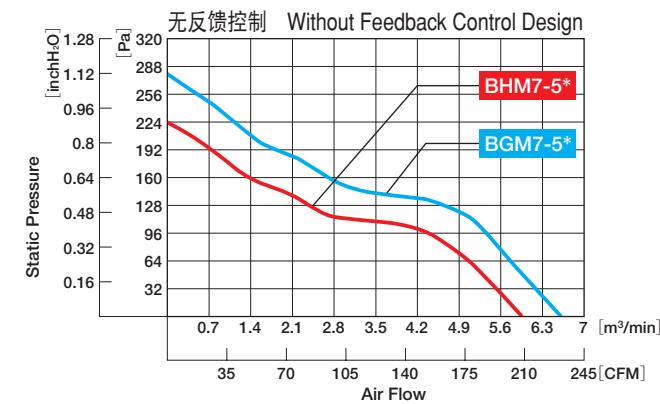
(注) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## ■ 特性图 P-Q Curve

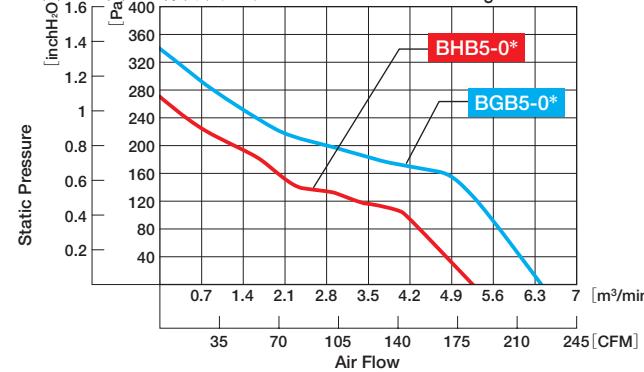
## 有反馈控制 Feedback Control Design



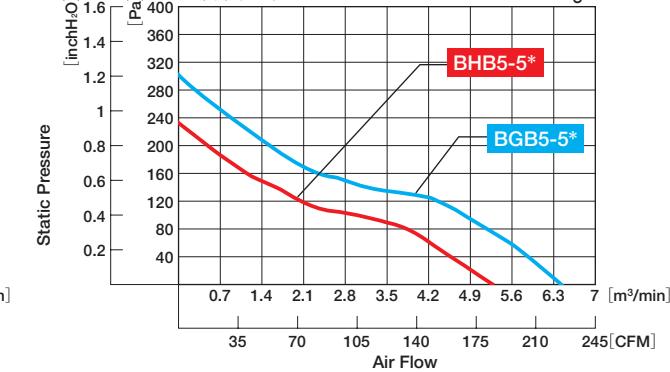
## 无反馈控制 Without Feedback Control Design



## 有反馈控制 Feedback Control Design



## 无反馈控制 Without Feedback Control Design



## 120×120×38mm Series



**使用材料**  
外壳: 塑料 (UL:V-0)  
叶轮: 塑料 (UL:V-0)

**轴承构造** 滚珠轴承

**保护方法** 电流限制

**使用温度范围** -10°C~70°C

**质量** 380g

**MATERIAL**  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)

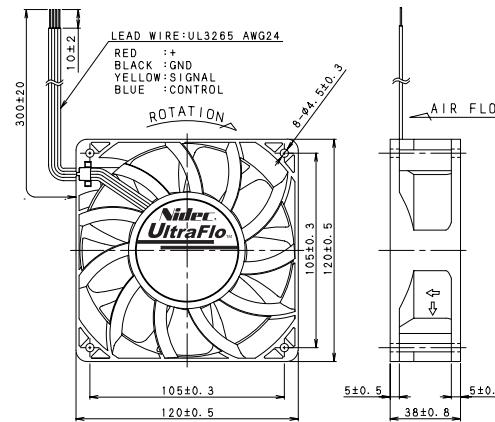
**BEARING** Ball Bearings

**PROTECTION** Current limit

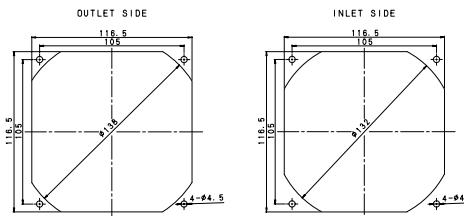
**OPERATING TEMP** -10°C~70°C

**MASS** 380g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## φ172×150×51mm Series



**使用材料**  
外壳: 铝压铸  
叶轮: 塑料 (UL:V-0)

**轴承构造** 滚珠轴承

**保护方法** 电流限制

**使用温度范围** -10°C~70°C

**质量** 830g

**MATERIAL**  
HOUSING: Die-cast Aluminum  
IMPELLER: Plastic (UL:V-0)

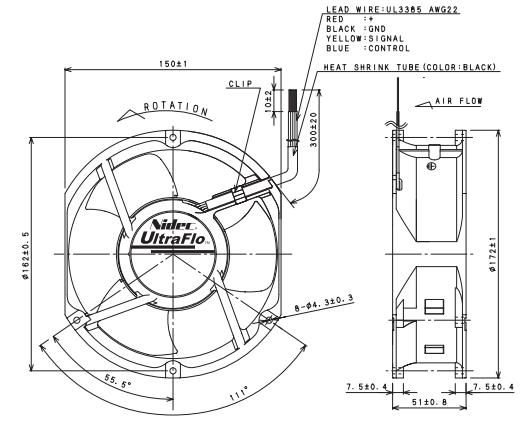
**BEARING** Ball Bearings

**PROTECTION** Current limit

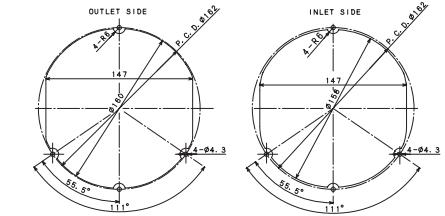
**OPERATING TEMP** -10°C~70°C

**MASS** 830g

## ■ 外形图 External Dimensions



## ■ 安装参考尺寸 Panel Out - Cuts



## 特性 Major Characteristic Parameters

## ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V12E12BBLM9-0*	12	10.2~13.8	0.80	3.85	136	140	0.56	9.60	50.0	3200
V12E12BMM9-0*	12	10.2~13.8	1.20	4.40	155	190	0.76	14.40	54.5	3700
V12E12BHM9-0*	12	10.2~13.8	1.60	5.00	177	240	0.97	19.20	58.0	4200
V12E12BGM9-0*	12	10.2~13.8	2.10	5.60	198	275	1.11	25.20	63.0	4600
V12E12BUM9-0*	12	10.2~13.8	3.30	6.35	224	335	1.35	39.60	66.0	5300

## ● 无反馈控制 Without Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure	Rated Input Power	Sound Level	Rated Speed	
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
V12E12BBLM9-5*	12	10.2~13.8	0.80	3.85	136	130	0.52	9.60	50.0	3200
V12E12BMM9-5*	12	10.2~13.8	1.20	4.40	155	180	0.72	14.40	54.5	3700
V12E12BHM9-5*	12	10.2~13.8	1.60	5.00	177	230	0.93	19.20	58.0	4200
V12E12BGM9-5*	12	10.2~13.8	2.10	5.60	198	265	1.07	25.20	63.0	4600
V12E12BUM9-5*	12	10.2~13.8	3.30	6.35	224	335	1.35	39.60	66.0	5300

(注)数据均为额定电压时的代表特性。

Sound Level为距离吸入口侧表面1m处的测定值。

电源PWM非保证对象。

电源的电压波纹在额定电压±5%以下。

需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.

Sound Level is measured at the distance of one(1)meter from the axis of fan intake.

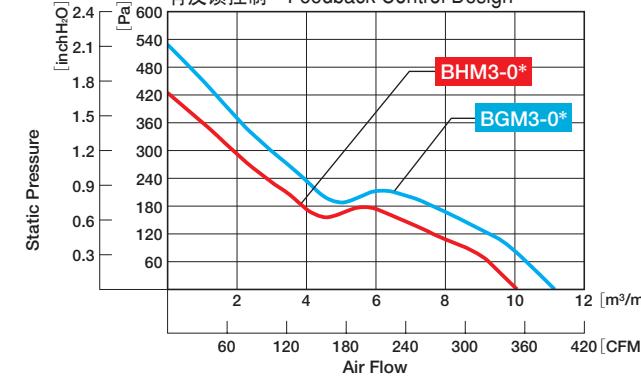
Insurance does not apply to power supply PWM.

The range of voltage ripples for power supply is ±5%.

Contact us on any rated voltage not listed above.

## 特性图 P-Q Curve

## 有反馈控制 Feedback Control Design

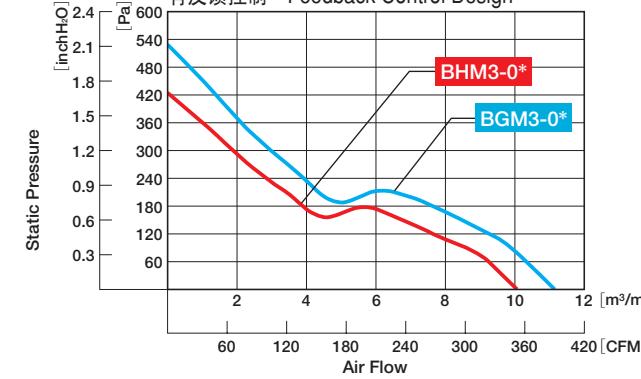


## 无反馈控制 Without Feedback Control Design

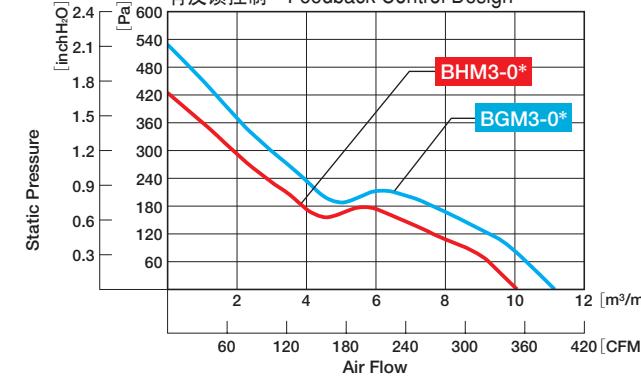


## 特性图 P-Q Curve

## 有反馈控制 Feedback Control Design

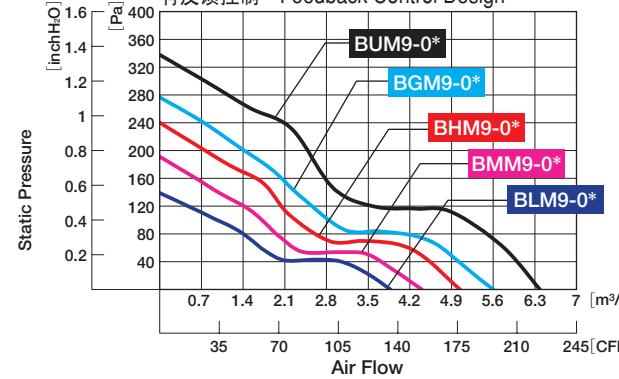


## 无反馈控制 Without Feedback Control Design

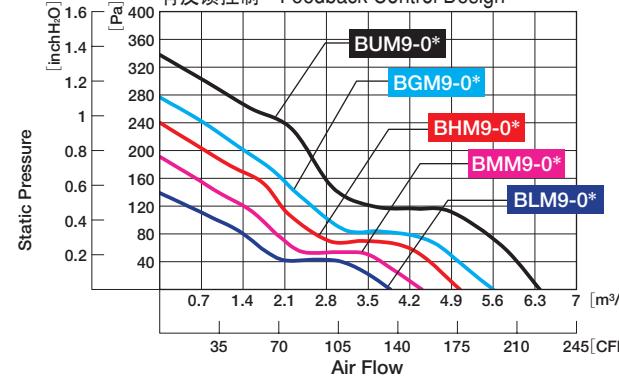


## 特性图 P-Q Curve

## 有反馈控制 Feedback Control Design



## 无反馈控制 Without Feedback Control Design



## φ172×150×51mm Series



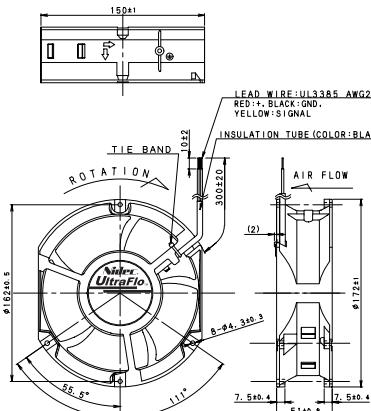
## φ172×150×51mm Series



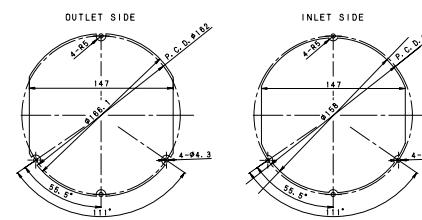
**使用材料**  
外壳: 铝压铸  
叶轮: 塑料(UL:V-0)  
**轴承构造**  
滚珠轴承  
**保护方法**  
电流限制  
**使用温度范围**  
-10°C~70°C  
**质量**  
830g

**MATERIAL**  
HOUSING: Die-cast Aluminum  
IMPELLER: Plastic (UL:V-0)  
**BEARING**  
Ball Bearings  
**PROTECTION**  
Current limit  
**OPERATING TEMP**  
-10°C~70°C  
**MASS**  
830g

■ 外形图 External Dimensions



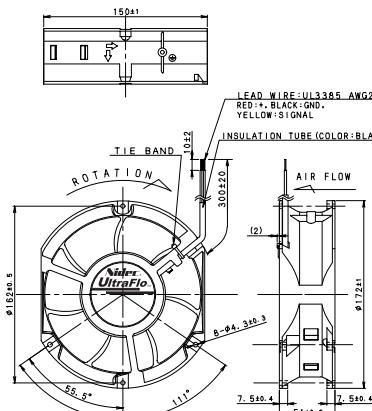
■ 安装参考尺寸 Panel Out - Cuts



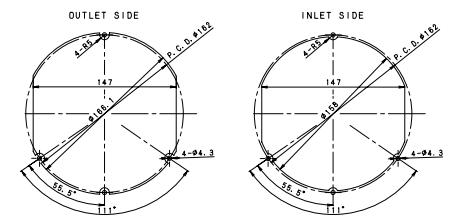
**使用材料**  
外壳: 铝压铸  
叶轮: 塑料(UL:V-0)  
**轴承构造**  
滚珠轴承  
**保护方法**  
电流限制  
**使用温度范围**  
-10°C~70°C  
**质量**  
830g

**MATERIAL**  
HOUSING: Die-cast Aluminum  
IMPELLER: Plastic (UL:V-0)  
**BEARING**  
Ball Bearings  
**PROTECTION**  
Current limit  
**OPERATING TEMP**  
-10°C~70°C  
**MASS**  
830g

■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



## ■ 特性 Major Characteristic Parameters

## ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
X17L24BHM5-0*	24	12.0~27.6	0.95	7.15	252	330	1.33	22.80	57.5	3900
X17L24BGM5-0*	24	12.0~27.6	2.20	9.85	348	455	1.83	52.80	66.0	5300
X17L24BS1M5-0*	24	12.0~27.6	3.80	11.78	416	522	2.10	91.20	72.5	6400

(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸入口表面1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

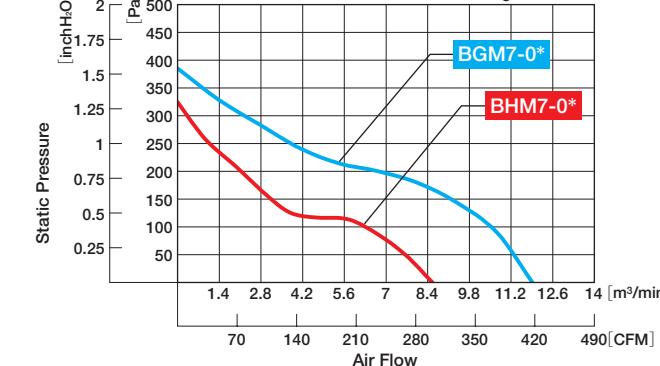
(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸入口表面1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

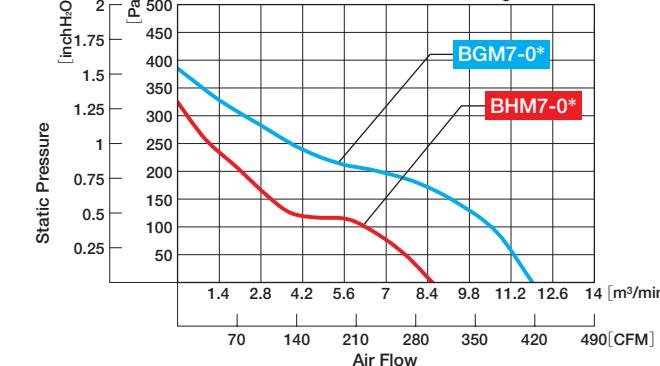
(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

## ■ 特性图 P-Q Curve

## 有反馈控制 Feedback Control Design

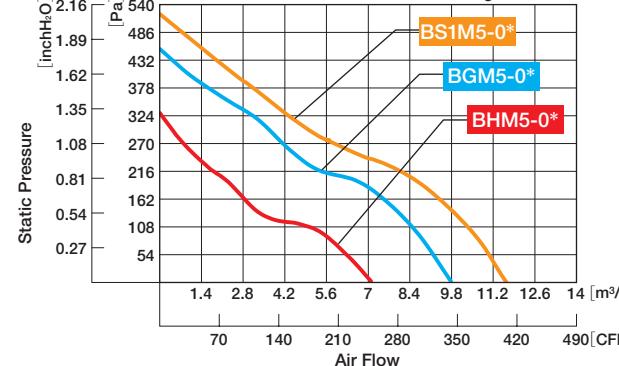


## 有反馈控制 Feedback Control Design



## ■ 特性图 P-Q Curve

## 有反馈控制 Feedback Control Design



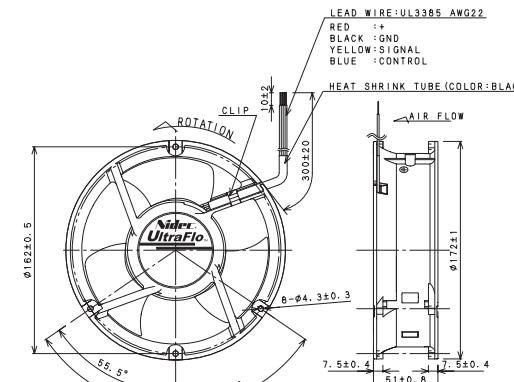
# UltraFlo $\phi 172 \times 51\text{mm}$ Series



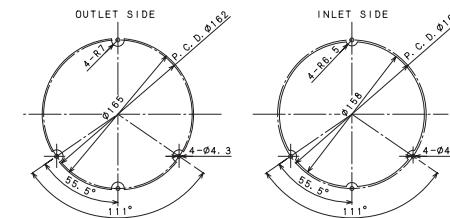
使用材料/  
外壳: 铝压铸  
叶轮: 塑料(UL:V-0)  
轴承构造/滚珠轴承  
保护方法/电流限制  
使用温度范围/-10°C~70°C  
质量/850g

MATERIAL/  
HOUSING: Die-cast Aluminum  
IMPELLER: Plastic (UL:V-0)  
BEARING/ Ball Bearings  
PROTECTION/ Current limit  
OPERATING TEMP/ -10°C~70°C  
MASS/ 850g

■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts



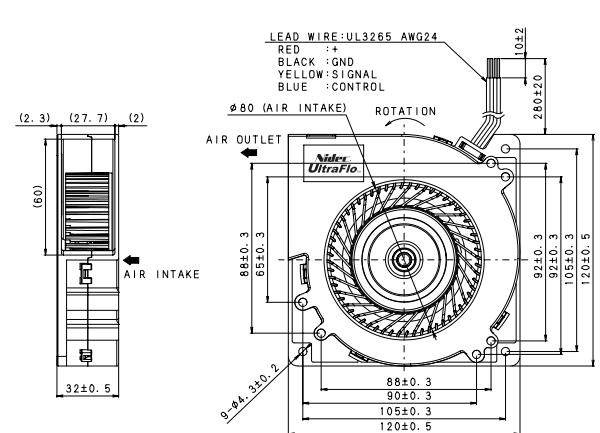
# 120x120x32mm Series



使用材料/  
外壳: 塑料(UL:V-0)  
叶轮: 塑料(UL:V-0)  
轴承构造/滚珠轴承  
保护方法/电流限制  
使用温度范围/-10°C~70°C  
质量/340g

MATERIAL/  
HOUSING: Plastic (UL:V-0)  
IMPELLER: Plastic (UL:V-0)  
BEARING/ Ball Bearings  
PROTECTION/ Current limit  
OPERATING TEMP/ -10°C~70°C  
MASS/ 340g

■ 外形图 External Dimensions



■ 安装参考尺寸 Panel Out - Cuts

参见上述外形图  
Refer to the External Dimensions above.

## 特性 Major Characteristic Parameters

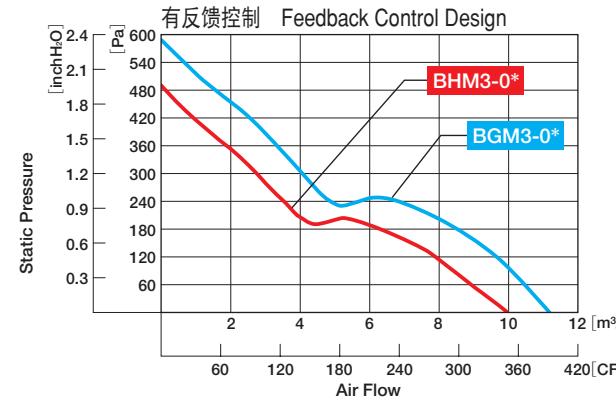
### ● 有反馈控制 Feedback Control Design

Model	Rated Voltage	Operating Voltage range	Rated Current	Maximum Air Flow		Maximum Static Pressure		Rated Input Power	Sound Level	Rated Speed
	V	V	A	m³/min	CFM	Pa	inchH <sub>2</sub> O	W	dB (A)	min⁻¹
Y17L48BHM3-0*	48	30.0~60.0	0.87	9.94	351	490	1.97	41.76	64.0	5000
Y17L48BGM3-0*	48	30.0~60.0	1.18	11.16	394	590	2.37	56.64	66.0	5600

(注) 数据均为额定电压时的代表特性。  
Sound Level为距离吸气侧表面1m处的测定值。  
电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。  
需使用上述以外的额定电压时请个别咨询。

(Note) The data shows typical value at rated voltage.  
Sound Level is measured at the distance of one(1)meter from the axis of fan intake.  
Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.  
Contact us on any rated voltage not listed above.

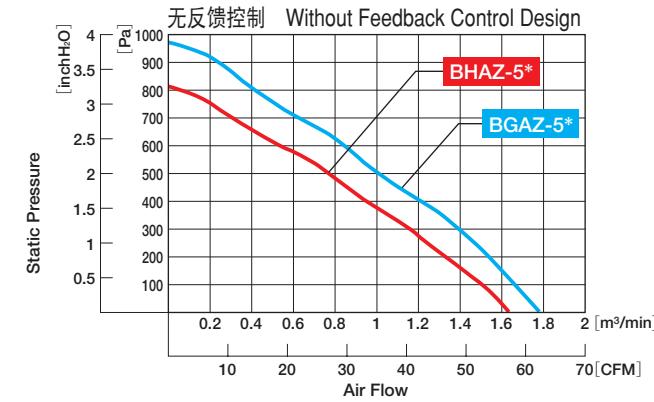
## 特性图 P-Q Curve



本产品规格可能因改良等需要,不经事先通知而改变。  
Specification is subject to change for improvement without notice.

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Specification is subject to change for improvement without notice.

## 特性图 P-Q Curve



本产品规格可能因改良等需要,不经事先通知而改变。  
Specification is subject to change for improvement without notice.

机种功能分类一览表 *UltraFlo™ Fans Matrix*

- ①电源PWM非保证对象。  
电源的电压波纹在额定电压±5%以下。
- ②需使用上述以外的凸缘式时请个别咨询。
- ③警告信号、速度控制可进行选择。

- ①Insurance does not apply to power supply PWM.  
The range of voltage ripples for power supply is ±5%.
- ②Please ask us separately on any other flange types not listed above.
- ③Alarm signal, Speed Control ; Different alarms are available upon request.