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# 風扇型錄

Fan Catalog

Fan Div. /TEM/TEMG/CCPBG





## **Foxconn Group Profile :**

Guided by a belief that the electronics products would be an integral part of everyday life in every office and in every home, Terry Gou founded Hon Hai Precision Industry Company Ltd, the anchor company of Foxconn Technology Group in 1974 with US\$7,500, a devotion in integrating expertise for mechanical and electrical parts and an uncommon concept to provide the lowest "total cost" solution to increase the affordability of electronics products for all mankind.

Today, Foxconn Technology Group is the most dependable partner for joint-design, joint-development, manufacturing, assembly and after-sales services to global Computer, Communication and Consumer-electronics ("3C") leaders. Aided by its legendary green manufacturing execution, uncompromising customer devotion and its award-winning proprietary business model, eCMMS, Foxconn has been the most trusted name in contract manufacturing services (including CEM, EMS, ODM and CMMS) in the world.

Focusing on fields of nanotechnology, heat transfer, wireless connectivity, material sciences, and green manufacturing process, besides from cooperating with the establishment of the research institution for nanotech, new material, and optical electric, Foxconn also sets up several research centers and testing laboratories for mechanism, material, electronics to conduct the services of science research and technology development worldwide.

Furthermore, Foxconn's devotion to develop nanotech, thermal treatment, nano measure, wireless network, environmental protection, CAD/CAE, optical plating technique, precision/nano processing, SMT, and network CMOS chips, in terms, allows Foxconn to accumulate over 25,000 patents granted worldwide by 2010. This made Foxconn a recognized leader of innovation and technical know-how in rankings such as MIT's or IPIQ's patent scorecard.

Aside from hardware related technology research and development investment, Foxconn also relentlessly seeks to provide customers ever fuller menu of end-to-end services to choose from. Logistic planning and e-supplying system adopted for the global supply chain management, computer software development and computer programming, sales channel solutions are just some of the latest investment and involvement that have continued to gain appreciation from the worldwide customers.

Foxconn's commitment to continual education, investing in its people long term and localization globally not only leads to the deep collaborating relationships with leading institutions of higher learning, but also helps to make this Fortune Global 500 group's global operations including the largest exporter in Greater China and the second largest exporter in Czech Republic.



## Foxconn Technology Company Profile

- An affiliate of Hon-Hai Precision Industry Co., Ltd
- Established in 1997, Taipei, Taiwan
- Listed in Taiwan stock market since 2004
- Manufacturing sites: ShenZhen, FoShan (HQ), TaiYuan, Nanning, Yantai
- Total Employees : Over 10,000 World Wide
- Quality Certified:
  - ISO 9000, 9001, 14001
  - OHSAS 18001
  - RoHS 2002/95/EC (In-house Testing Capability)
- Product Lines:
  - Heatsink, Thermal Module, Heatpipe, Vapor Chamber, Extrusion, Fan,
  - MIM Parts, Mg/Al Enclosure, Die-cut Material, Mechanical Accessories

## Strong capacity and green products

Foxconn has manufactured millions of fans a month providing to worldwide tier-1 customer for many years. Apart from supplying fans with the highest performance and quality, Foxconn is also a keen participant in the “Green” initiative, striving for products that have the minimum impact to the environment. All the fan products conform to the European directive on the restriction of the use of hazardous substances in electrical and electronic equipment (ROHS). Halogen free products are also available at request.



Assembly Lines



Plastic Molding Plant



SMT Line



Stator Assembly



Fan Assembly Line



Bobbin Installation

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# **Chapter 1. Capability Introduction**

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## *1.1 Design Capability*

### *1.1.1 Aerodynamics Analysis*

### *1.1.2 Fan Motor Analysis*

## *1.2 Validation Capability*

### *1.2.1 Air Flow and Pressure*

### *1.2.2 Acoustics*

### *1.2.3 Flux Density Analysis*

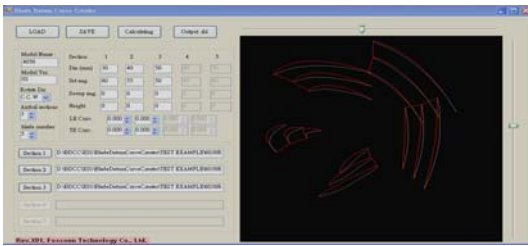
### *1.2.4 Bearing Performance*

### *1.2.5 Life and Reliability Validation*

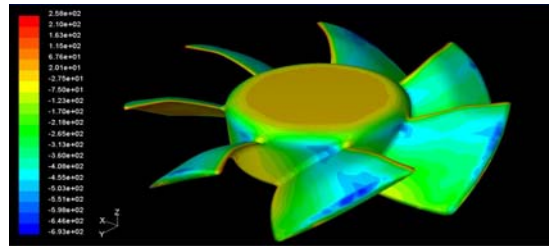
# 1.1 Design Capability

## 1.1.1 Aerodynamics Analysis

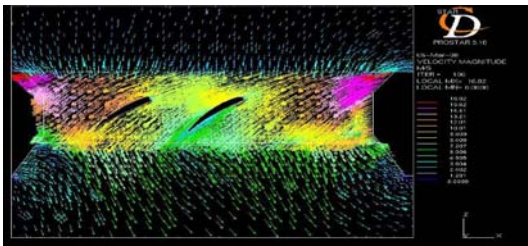
Fan is a air-moving device by encompassing fluid aerodynamics theory. We perform an initial design with parameters by utilizing turbo machinery principle which applies to the in-house developed software (FoxAero). The simulation analyzes fan characteristics such as operating air flow, pressure, power consumption. The design optimizations are conducted by Computational Fluid Dynamics (CFD) simulation and empirical verification. The simulation shows the flow field inside the fan with air velocity distribution, pressure pattern, laminar / turbulent transition behavior, which are essential to enhance fan blade efficiency and cascade parameters.



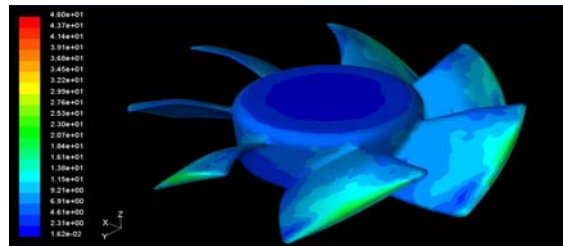
FoxAero



Pressure Pattern



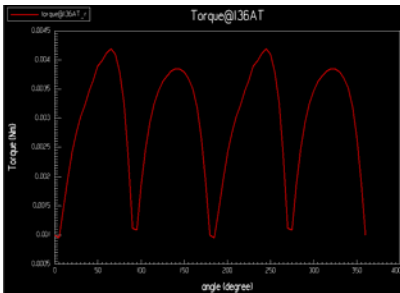
Velocity Distribution



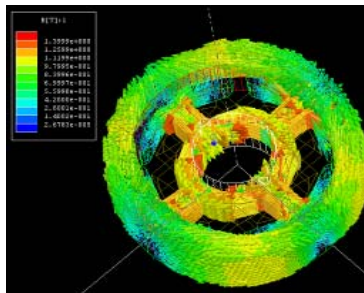
Turbulent Kinetic Energy

## 1.1.2 Fan Motor Analysis

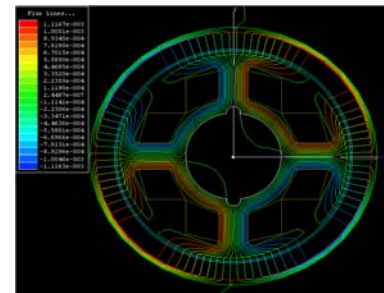
Foxconn investigates motor and magnet field of DC motor which drives impeller. Based on excited torque, magnetic vector, and flux line in a CAE tool, the engineers can design more efficient motor with lower power consumption.



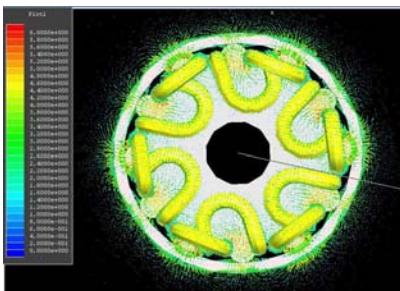
Excited Torque



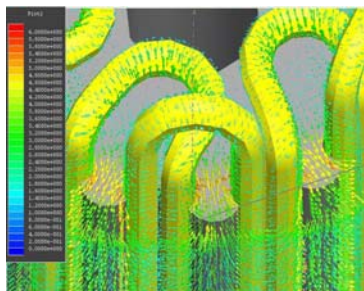
B Vector



Flux Line



3D Simulation for Magnetizing Yoke



Magnetic Circuit Simulation



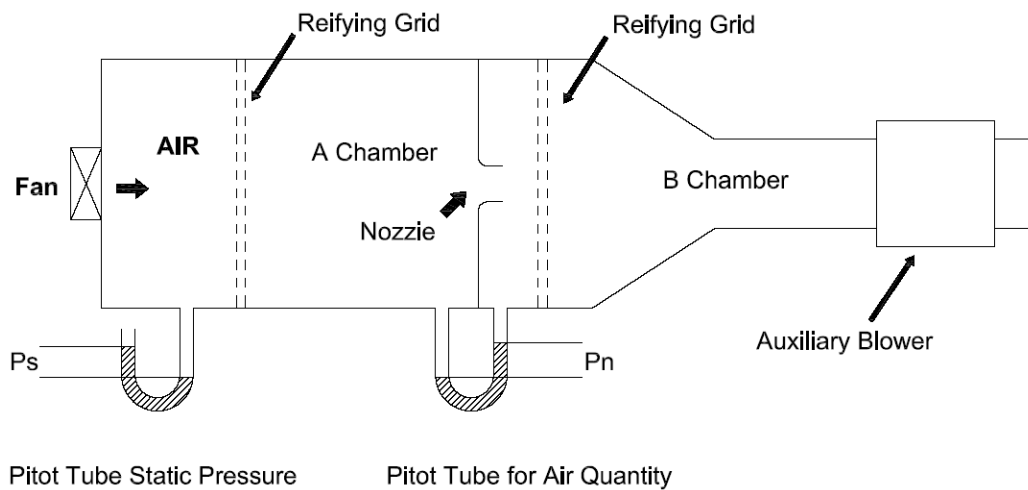
## 1.2 Validation

### 1.2.1 Air Flow and Pressure

There are many applications from the small air-flow fan for notebook to a large air-flow usage as fan tray. We offers a series measurement ranges as 20CFM / 250CFM / 500CFM to meet various performance design specification. All the wind tunnels are meeting AMCA 210 standard. The P-Q curves shown in this catalog are measured at nominal input voltage.



The performance including air flow and air pressure measured at rated voltage in double chamber which is measured according to AMCA 210 standard as shown below:

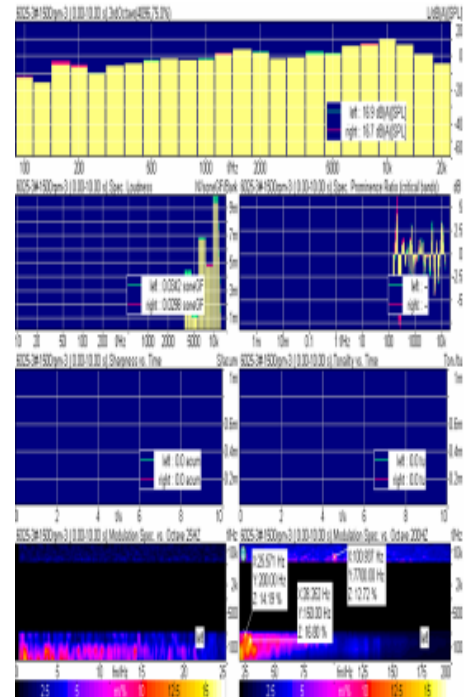
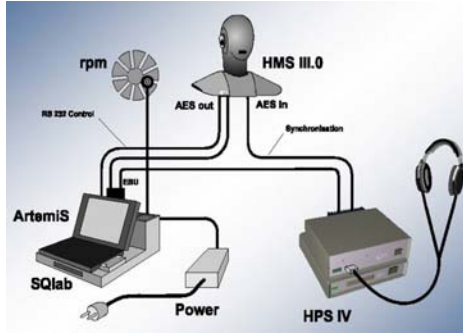


### 1.2.2 Acoustics

Acoustic measurements are taken in an anechoic chamber according to ISO 10302 international standards. For the sound pressure level presented in this catalog, microphone is positioned one meter from fan inlet at free-air condition. Foxconn team integrated the basic knowledge of aerodynamics, magnetism, electricity and tribology to achieve a quieter fan. All acoustics test results are iterated back to further improvements using technology field stated above.

Anechoic Chamber:

- Residual background noise: [15.0 dB\(A\)](#)
- Lowest cutoff frequency: [100 Hz](#)
- Instrument: [HEAD acoustics](#)
- System impedance noise measurement: [ISO 10302](#) International standard

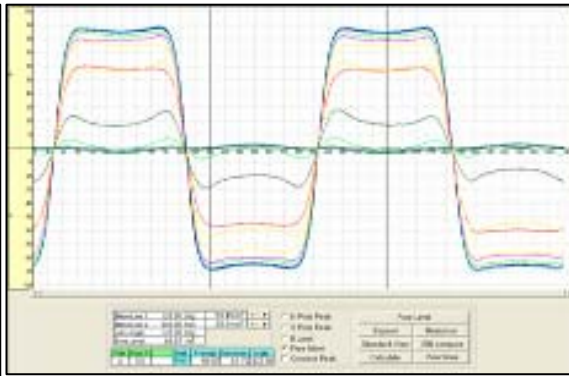
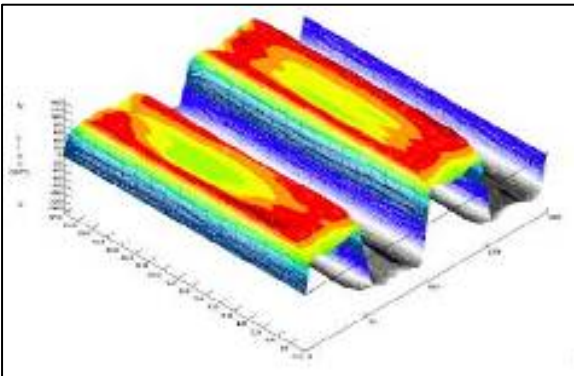
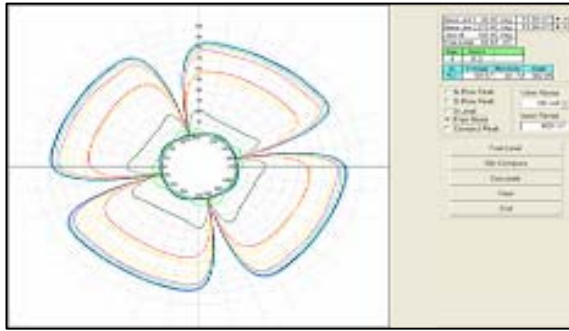


**Tonality, Modulation & Loudness**

### 1.2.3 Flux Density Analysis

To provide an excellent quality of fan motor, We perform validation of magnetic field and its critical parameters.

- Measure Magnetic flux density with a hall probe of Gauss meter
- Get the 2D and 3D Gauss graph



## 1.2.4 Bearing Performance

Foxconn performs bearing life cycle verification for ball bearing and slider bearing, Sleeve, FDB, etc. Combine with theoretical tribology knowledge and practical bearing design experience. We offer the DC fan with robust reliability.

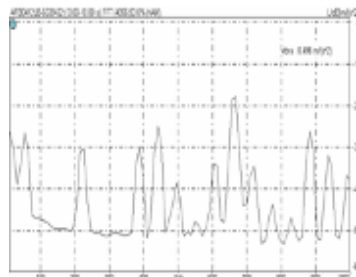
### ◆ Anderson Meter

- Ball bearing inspection
- Analyze ball bearing defects



### ◆ Dynamic Signal Analyzer

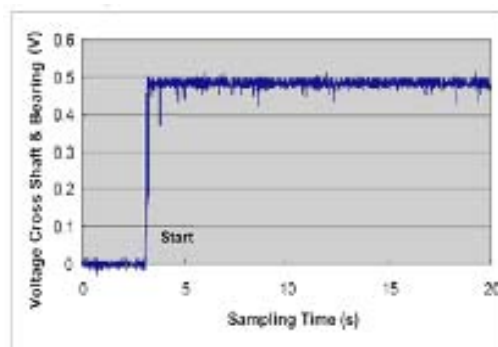
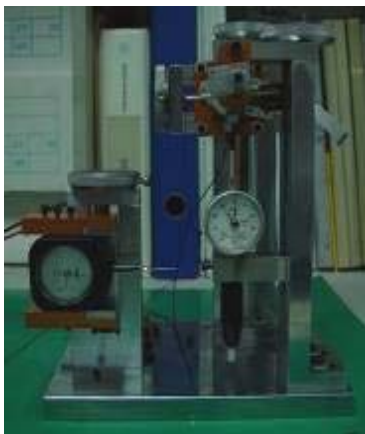
- Indicate the specific defects of ball bearing parts (inner/outer race, ball...etc)
- Analyze the rotational stability
- Analyze the fan vibration characteristics



Vibration spectrum of a fault ball bearing

### ◆ Oil Film & Stribeck Curve Records

- Identify oil film formation of sleeve bearing
- Measure the small friction torque of bearing
- Record bearing characteristics curve



Good Oil film formation

## 1.2.5 Life and Reliability Validation

It's critical to ensure the quality of fan by running long-term reliability, such as high / low temperature durability, thermal shock, mechanical shock, thermal cycle and vibration test, and so on. We are confident Foxconn fans meet the customer requirement with proven data.

### 1. Temperature Stress Acceleration Test

Temperature Chamber

Temperature/Humidity Chamber

### 2. Salt Spray Test

### 3. Waterproof Tester

### 4. Dustproof Tester

### 5. Mechanical Shock

### 6. Mechanical Vibration

### 7. HALT



## **Chapter 2.FAN Important Notes**

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*2.1 Fan Selection & Installation*

*2.2 Frame type and suggest screw torque*

*2.2.1 Mounting position*

*2.2.2 Prohibitive behavior*

*2.3 Option for Fan Control Scheme*

*2.3.1 Fan Speed Control*

*2.3.2 Fan Signal Output*

*2.4 The DC fan assembly*

*2.5 Product numbering definition*

## 2.1 Fan Selection & Installation

There are many factors need to be considered to select the suitable fan, such as:

- Proper dimensions and space limitation
- Required air density for cooling
- Pressure loss inside of system
- Power consumption
- Noise level and acoustic spectrum
- Service life and reliability

To solve thermal requirement, the following steps are incorporated into fan design.

### <Step1> Find required fan air volume to cooling

The method to calculate the required air flow based on fundamental theory of energy conservation described as:

$$Q = \frac{W}{\rho \times C \times \Delta T} \approx \frac{W}{1200 \times \Delta T}$$

Where      Q : Required fan air flow (m3/s)  
              W : Heat produced inside system (W)  
  
              ρ: Specific weight of air (kg/m3)  
              C: Specific heat of air(J/kg°C)  
              ΔT : Temperature rise between inlet and outlet (°C)

Formula shows that smaller air flow results higher air temperature risen which is same in components and system. It needs to be carefully chosen the suitable condition of operating system to determine permissible rising temperature of air.

### <Step 2>Pressure loss estimation

Pressure loss in system was caused by airflow obstruction like filters, ducts and components configuration. To force required air volume across the system, fan needs to offer enough static pressure to overcome this pressure loss. A plot of pressure versus airflow across the system often reveals a quadratic curve and shown in figure 1. This curve is called “system impedance curve” or “ventilating resistance curve”. A designer can obtain this curve by simulation or experiment.

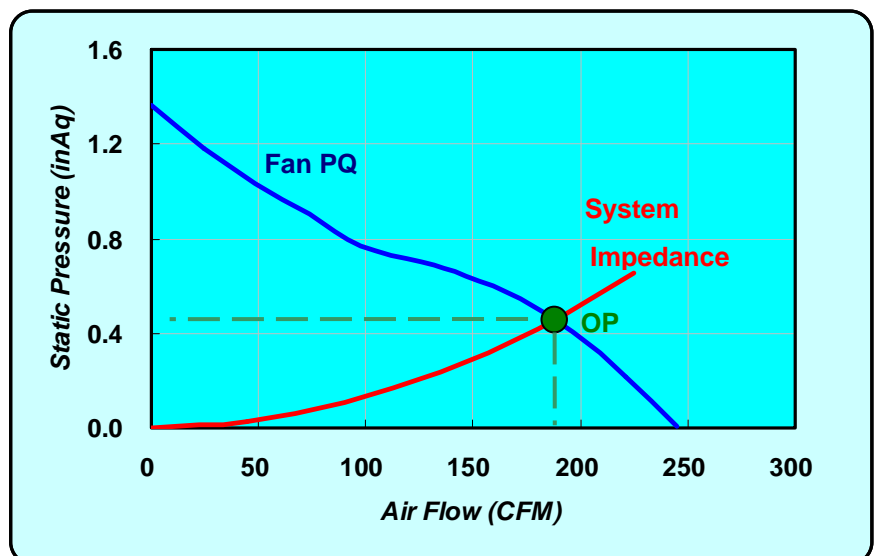


Figure 1, System impedance curve and Fan PQ curve

### <Step 3>Fan selection

Select a fan PQ curve from catalog with proper size, plot the fan PQ and impedance curve in the same graph as below. The intersectional point will illustrate and predict how the fan operates in the system, also known as operational point (OP). This indicates the fan offers just enough static pressure to compensate pressure loss in the system at the given air volume. If the air flow at OP isn't satisfied the required air flow, then it may cause overheat and damage in the system with a smaller fan, conversely, the larger fan may result an over design scheme and noisy. Thus, designer needs to choice another PQ curve for trial and error.

To minimize the iteration, an effective way is to find matched designed OP by using the fan law to estimate further change in performance.

The fan law is stated as:

$$\frac{Q_1}{Q_2} = \frac{RPM_1}{RPM_2} \text{ for air flow estimation, and}$$

$$\frac{P_{S1}}{P_{S2}} = \left( \frac{RPM_1}{RPM_2} \right)^2 \text{ for static pressure estimation}$$

The suffix (1) means known data of a fan PQ curve and can be obtained from the catalog, and suffix (2) means the estimated P-Q property that change with speed. Below is an example to demo this calculation with increase of 15% speed from 7000 rpm to 8050 rpm, and easily calculated with work sheet software.

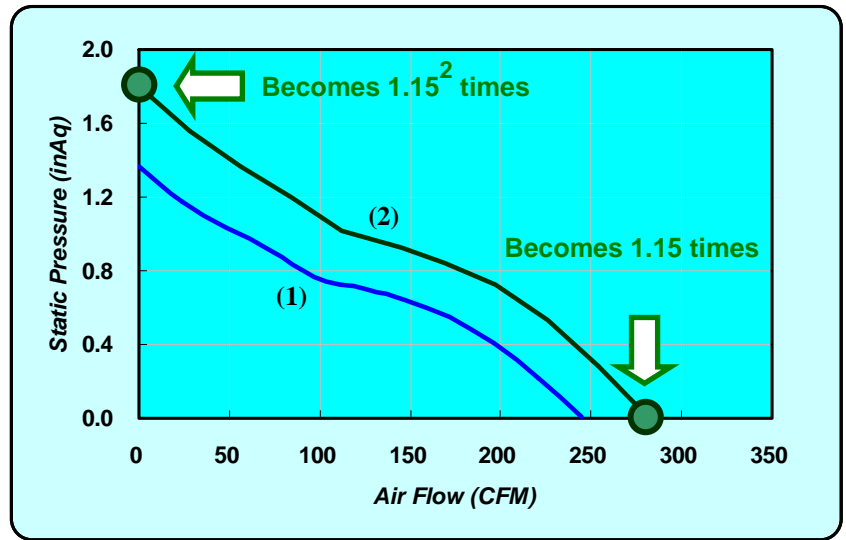
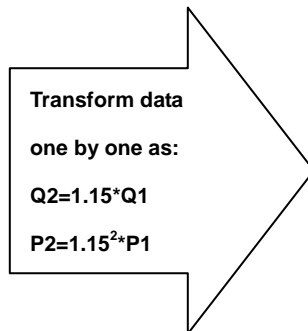


Figure 2 Fan law demo drawing

Original Data	
Air Flow (CFM)	Static Pressure (inAq)
0.0	1.363
24.2	1.178
48.8	1.034
73.4	0.905
97.2	0.768
126.2	0.700
146.7	0.639
171.7	0.547
196.5	0.406
220.9	0.217
245.0	0.000



Transformed Data	
Air Flow (CFM)	Static Pressure (inAq)
0.0	1.803
27.8	1.558
56.1	1.367
84.4	1.197
111.8	1.016
145.1	0.925
168.7	0.846
197.5	0.723
226.0	0.537
254.1	0.287
281.7	0.000

Table 1, work sheet to transform data by fan law

## 2.2 Frame type and suggest screw torque

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

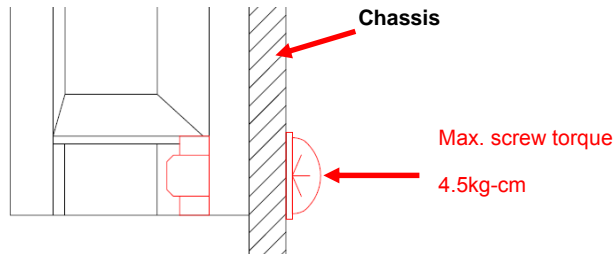
Flange type is useful to screw down the flange or to fit it into the chassis designed by the customer.

Rib type is useful for screwing down using the close type bolt.

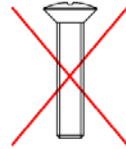
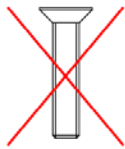
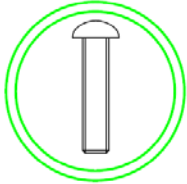
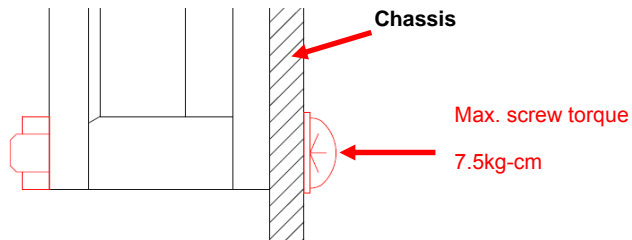
Note the flange or Rib type according to the mounting method below.



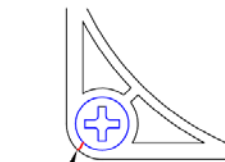
Flange type



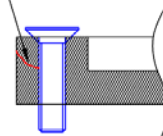
Rib type



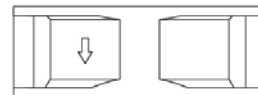
Do not recommend to use taper screw above because it might cause a crack on the frame.



Crack



Shaft Vertical

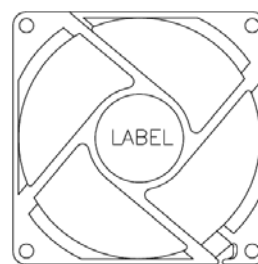
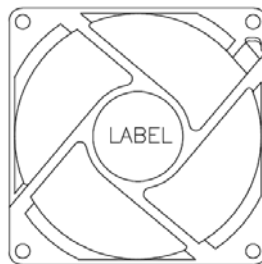
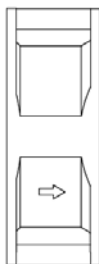


Label Side

### 2.2.1 Mounting position

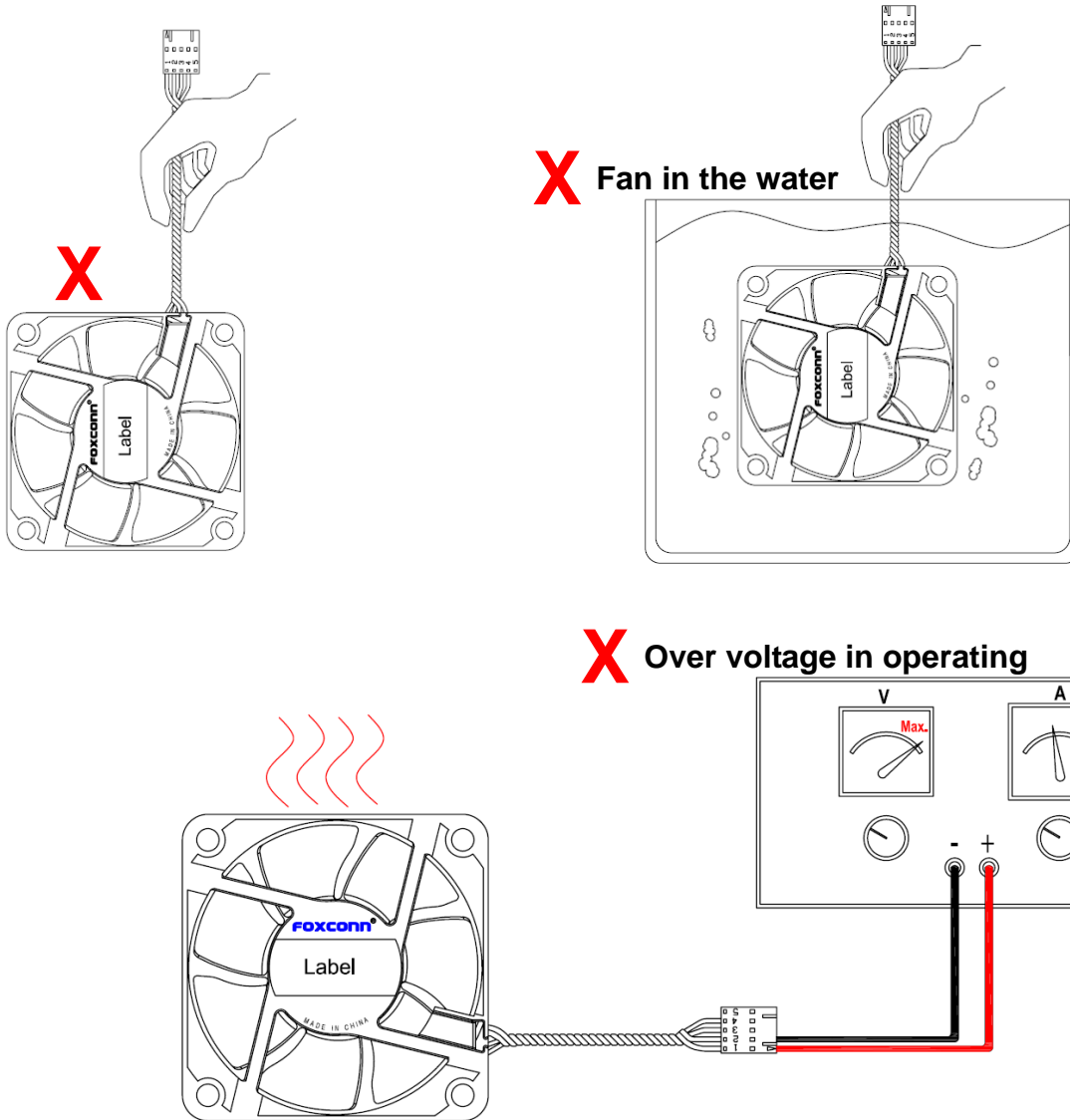
DC fan mounting holes and location below, Foxconn can design different holes and mounting locations per customer requirements.

Shaft Horizontal





## 2.2.2 Prohibitive behavior



## 2.3 Option for Fan Control Scheme

### 2.3.1 Fan Speed Control

#### ◆ Voltage control

This is the basic form of fan speed control. Fan speed is controlled by varying input voltage within the recommended input voltage range. Please note that there is a minimum input voltage requirement as the start-up voltage.

#### ◆ PWM control

Voltage and PWM signals are the most common type of connection to control fan speed. PWM signal control circuit can be implemented easily in system and this form of control signal has become the main choice of control interface in the industry.

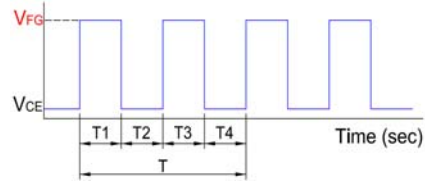
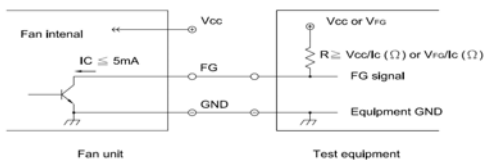
#### ◆ Temperature control

The fan drives air with auto-adjusting speed according to environment temperature to achieve quietest application by a on-board thermistor. The fans perform the lowest running speed according to the local environment temperature with lower noise level and power consumption.

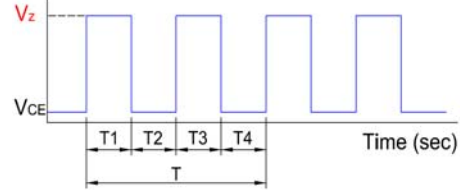
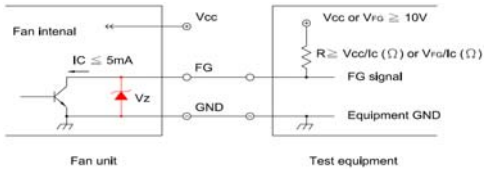
## 2.3.2 Fan Signal Output

### ◆ FG signal circuit types description:

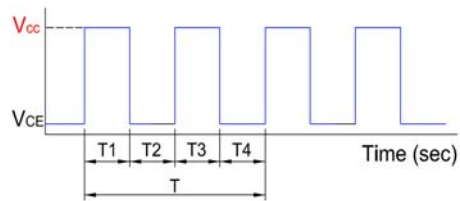
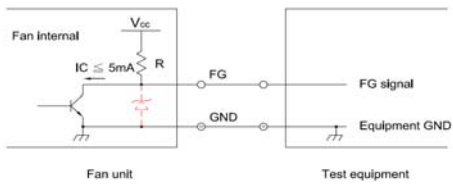
Typical circuit 1:



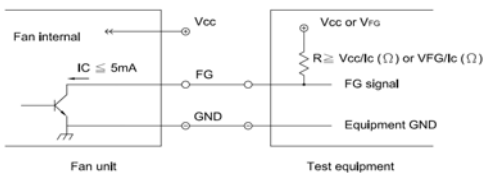
Typical circuit 2 :



Typical circuit 3 :

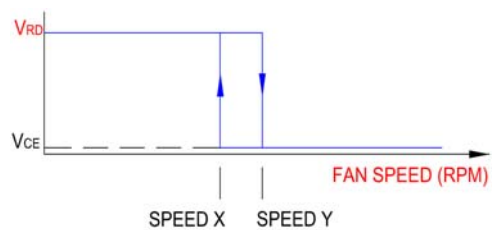
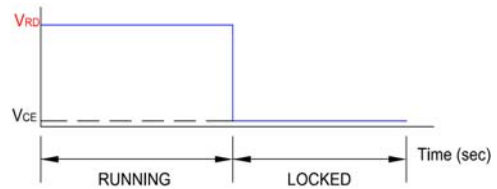
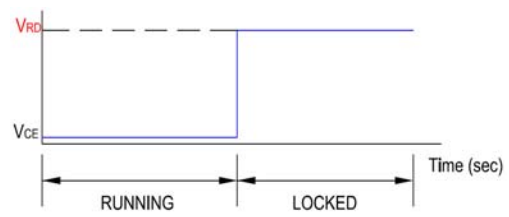
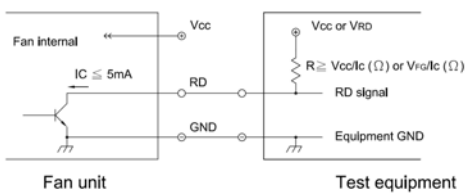


Typical circuit 4 :

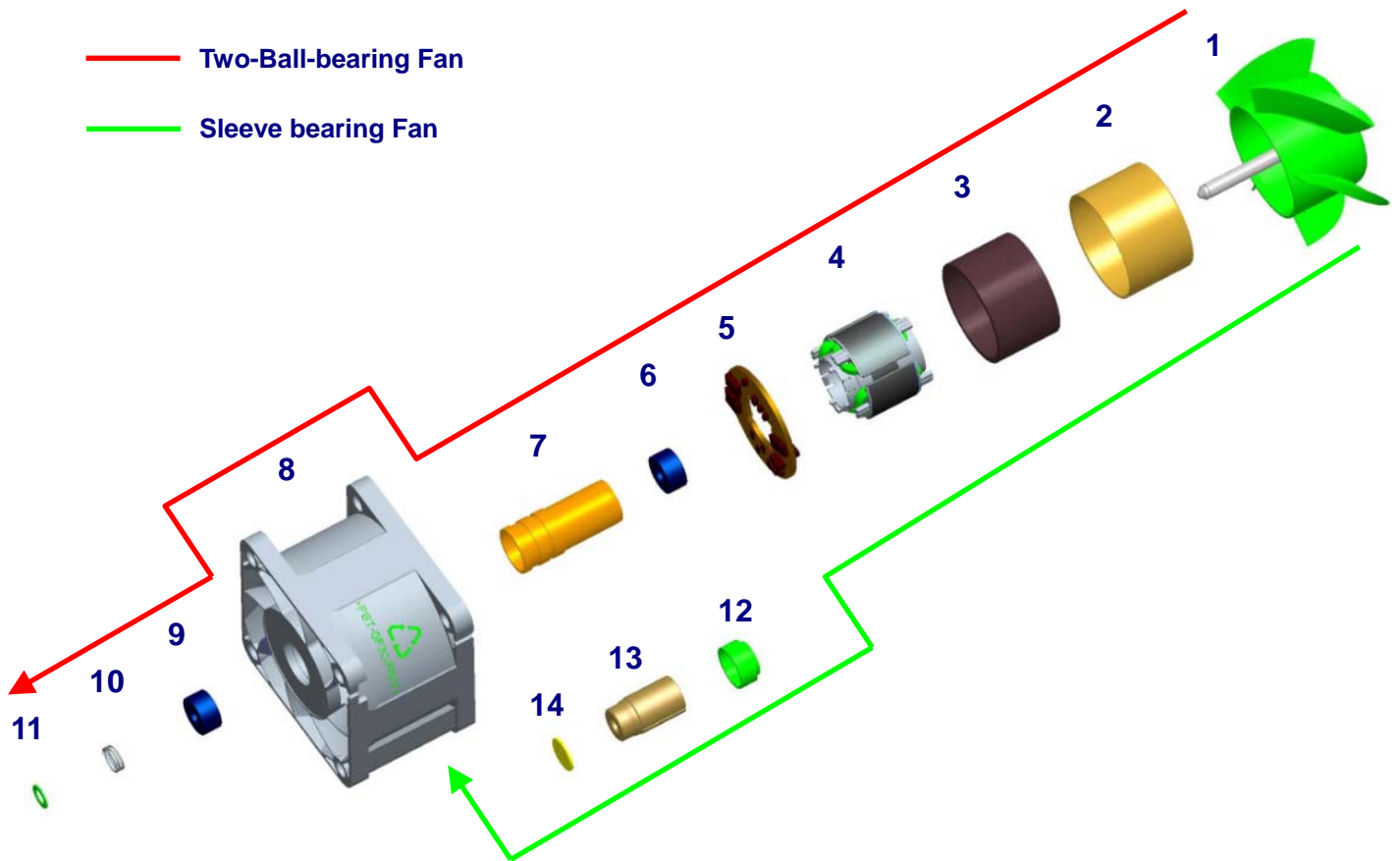


### ◆ RD signal circuit types description

Typical circuit:



## 2.4 The DC fan assembly



Two-ball-bearing axial fan, parts list :

1. Impeller and shaft
2. Shell
3. Magnet plate
4. Winding part  
(Including Laminators, Bobbin and Enameled wire)
5. PCBA
6. Ball bearing
7. Bearing socket
8. Frame
9. Ball bearing
10. Spring
11. Lock washer

Sleeve-bearing axial fan, parts list :

1. Impeller and shaft
2. Shell
3. Magnet plate
4. Winding part
5. PCBA
8. Frame
12. Oil seal
13. Sleeve bearing
14. Wear pad

## 2.5 Product numbering definition

**PV A 080 G 12 H - F 00 - A E**

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

### (1) Products code name of the fan

PV: DC fan for general  
 PI : DC fan for high performance

### (2) Series type code

A: DC axial fan  
 B: DC blower fan  
 H: Two motor DC axial fan

### (3) Dimension code

030: 30mm  
 040: 40mm  
 060: 60mm  
 080: 80mm  
 092: 92mm  
 120: 120mm etc...

### (4) Thickness code

A: 05mm	J: 32mm
B: 08mm	K:38mm
C: 10mm	L: 44.5mm
D: 13mm	M: 56mm
E: 15mm	P: 76mm
F: 20mm	Q: 80mm
G: 25mm	R: 90mm
H: 28mm	etc...

### (5) Input voltage code

03: 3.3V  
 05: 05V  
 12: 12V  
 24: 24V  
 48: 48V

### (6) Rotation speed code

A,B,C,...X,Y,Z (except I,O)  
 Letters description different rotation speeds

### (7) Electronic type code

A: No signal output  
 F: FG signal output  
 R: RD signal output

### (8) Flow number

00: for standard fan  
 01...99, A...Z( except I,O **Letter**)

### (9) Frame/Impeller assembly for PQ type

A: A type Frame/Impeller assembly  
 B: B type Frame/Impeller assembly  
 etc...

### (10) Bearing type

A: FFB(Foxconn Fluid Bearing)  
 B: Two Ball bearing  
 C: Ceramic bearing  
 D: One ball one sleeve bearing  
 E: FTB(Foxconn Technology Bearing)  
 S: Sleeve bearing

### Safety Approvals

international organizations such as UL, CE, TUV.



## **Chapter 3. FAN Series**

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*3.1 PVA Series*

*3.2 PVB Series*

*3.3 PIA Series*

*3.4 PIH Series*

*3.5 Table of contents*

# PVA 30 x 30 x 10mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

### Lead wires :

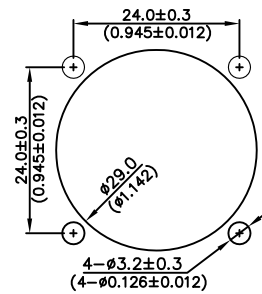
UL1061 AWG#30~#32 or Equivalent

### Weight :

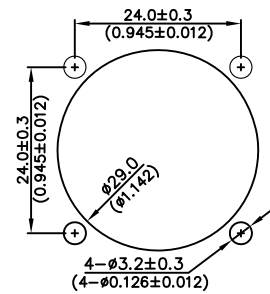
28 Gram (Ref.)

### MOUNTING PANEL CUTOUT

INLET SIDE

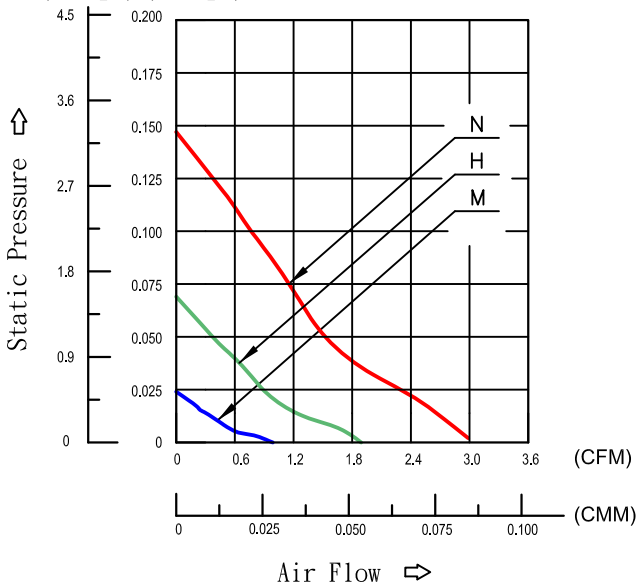


OUTLET SIDE

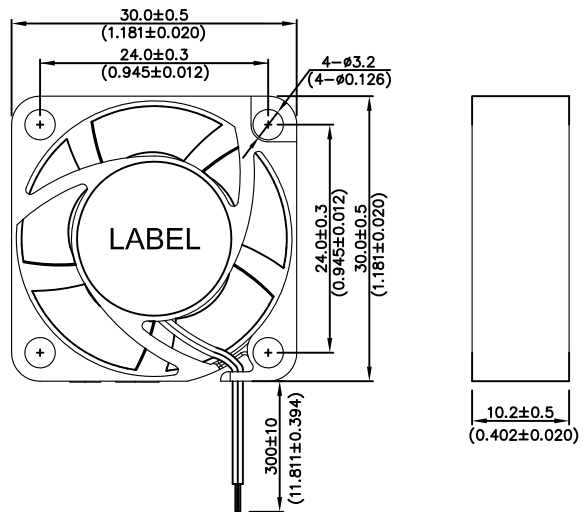


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA030C05M	-FG			●			5	4.1-5.0	0.03	0.15	3200	0.028	0.98	0.61	0.024	16.0
PVA030C05H	-FG			●			5	4.1-5.0	0.06	0.30	6000	0.055	1.93	1.83	0.072	25.0
PVA030C05N	-FG			●			5	4.1-5.0	0.13	0.65	9000	0.085	2.99	3.73	0.147	34.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 30 x 30 x 15mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

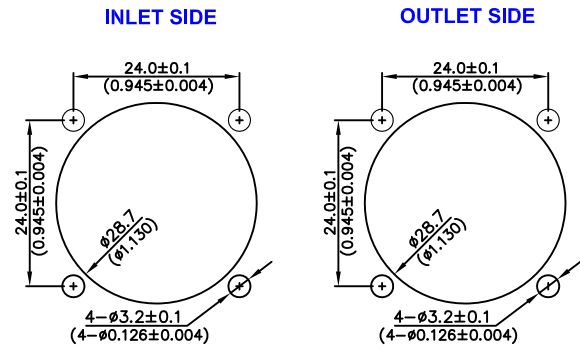
### Lead wires :

UL1061 AWG#30~#32 or Equivalent

### Weight :

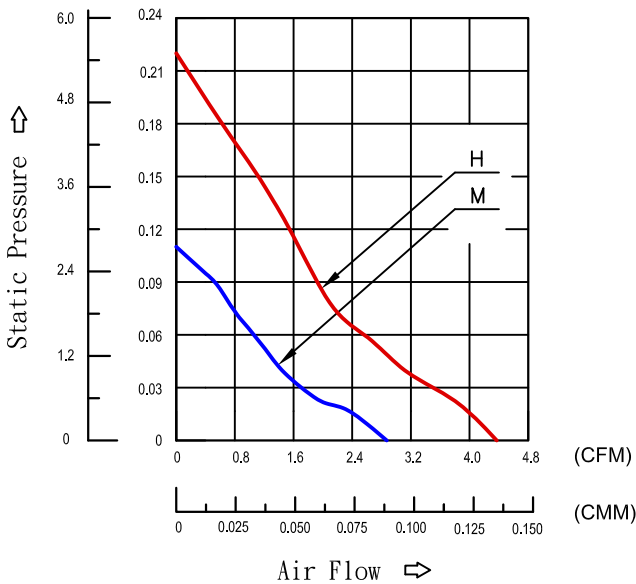
12.5 Gram (Ref.)

### MOUNTING PANEL CUTOUT

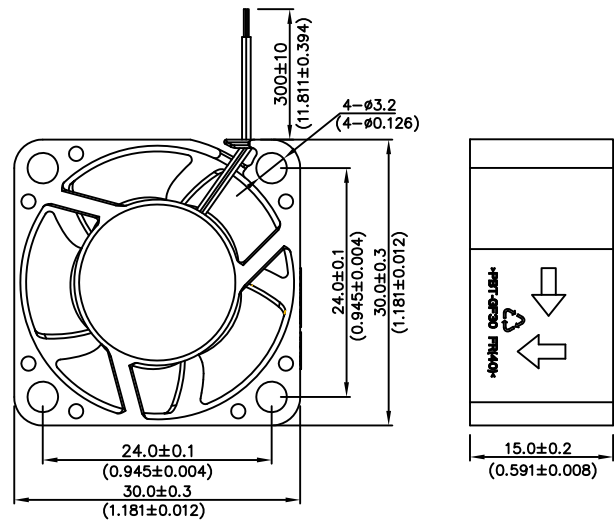


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA030E12M	-FG			●			12	7.0-13.2	0.07	0.84	7000	0.081	2.85	2.54	0.100	18.0
PVA030E12H	-FG			●			12	7.0-13.2	0.09	1.08	10000	0.123	4.35	5.08	0.200	27.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 40 x 40 x 20mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

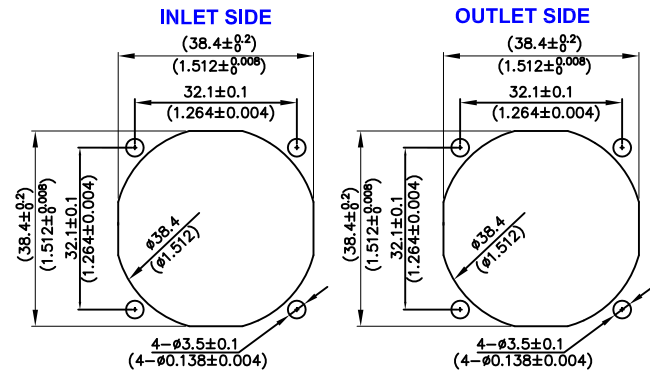
### Lead wires :

UL1061 AWG#30~#32 or Equivalent

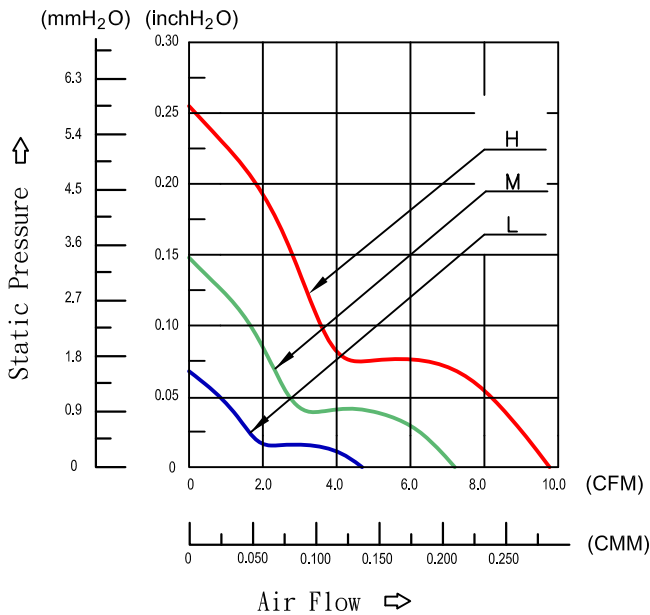
### Weight :

30 Gram (Ref.)

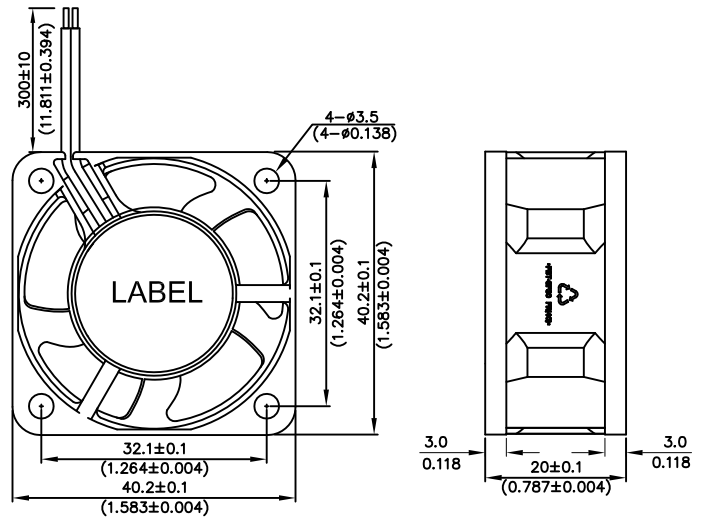
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA040F12L	-FG/-RD	●					12	7.0-13.2	0.06	0.72	4000	0.132	4.65	1.78	0.07	15.0
PVA040F12M	-FG/-RD	●					12	7.0-13.2	0.10	1.20	6000	0.204	7.20	3.81	0.15	23.2
PVA040F12H	-FG/-RD	●					12	7.0-13.2	0.15	1.80	8000	0.277	9.77	6.35	0.25	33.4
PVA040F24L	-FG/-RD	●					24	12.0-26.4	0.03	0.72	4000	0.132	4.65	1.78	0.07	15.0
PVA040F24M	-FG/-RD	●					24	12.0-26.4	0.05	1.20	6000	0.204	7.20	3.81	0.15	23.2
PVA040F24H	-FG/-RD	●					24	12.0-26.4	0.09	2.16	8000	0.277	9.77	6.35	0.25	33.4

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.



# PVA 45 x 45 x 15mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

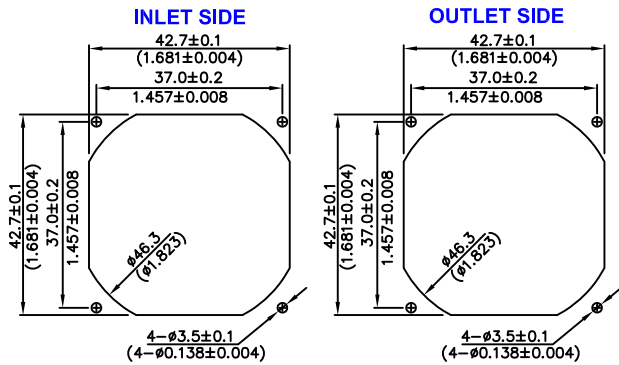
### Lead wires :

UL1061 AWG#30~#32 or Equivalent

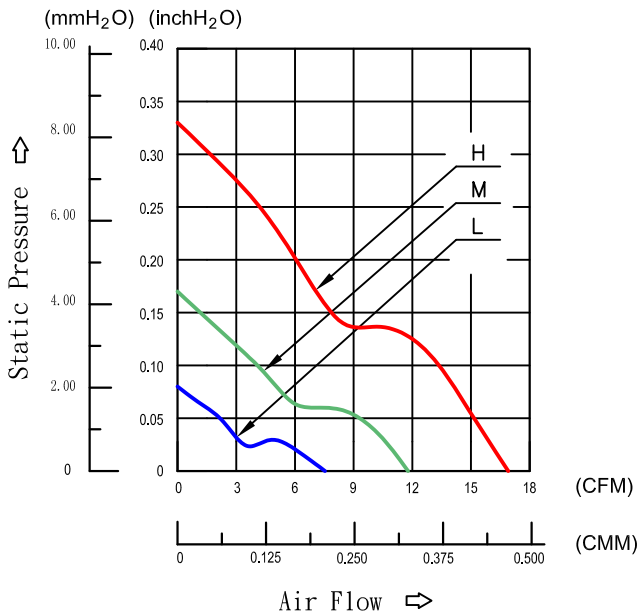
### Weight :

24.3 Gram (Ref.)

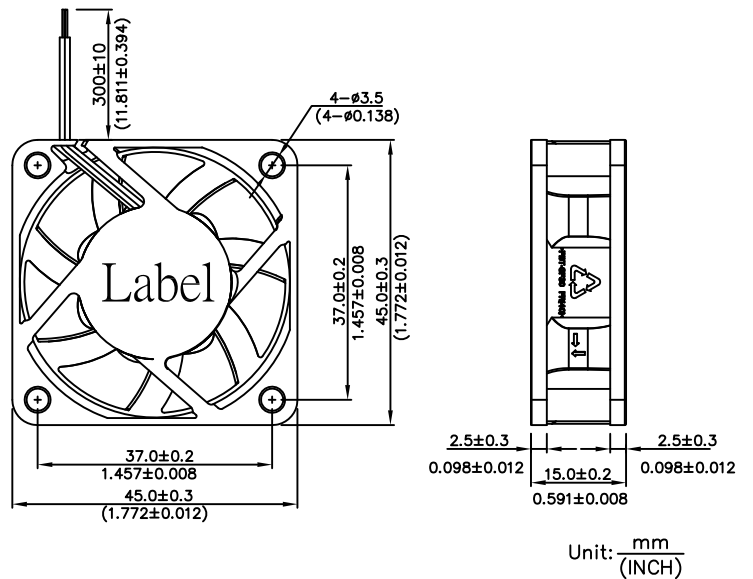
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA045E12L	-FG			●			12	7.0-13.2	0.06	0.72	4000	0.214	7.54	2.03	0.080	20.7
PVA045E12M	-FG			●			12	7.0-13.2	0.10	1.20	6000	0.334	11.81	4.57	0.180	31.5
PVA045E12H	-FG			●			12	7.0-13.2	0.20	2.40	8500	0.479	16.92	8.38	0.330	39.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 50 x 50 x 15mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

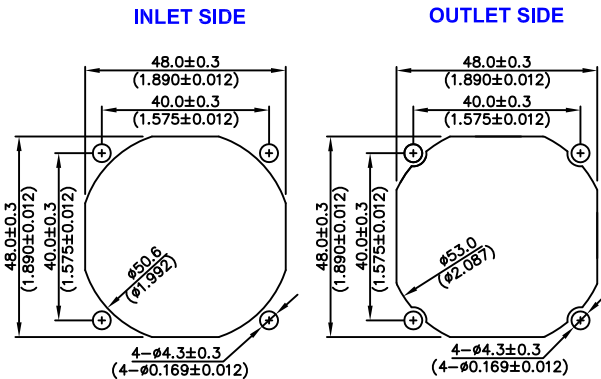
### Lead wires :

UL1061 AWG#30~#32 or Equivalent

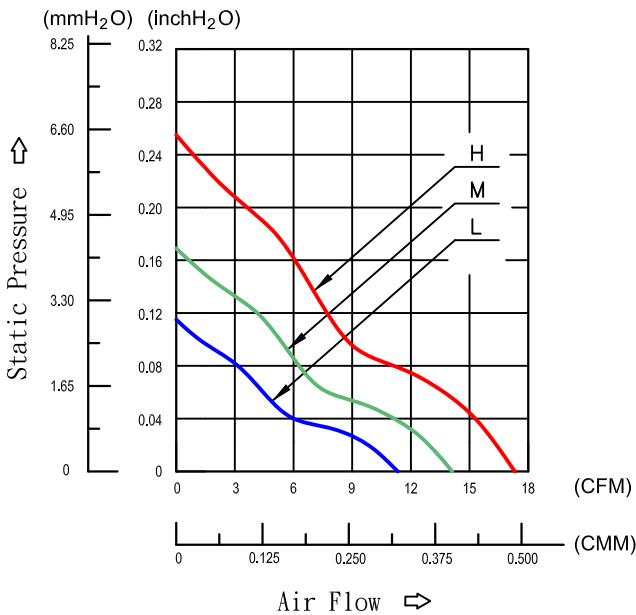
### Weight :

31 Gram (Ref.)

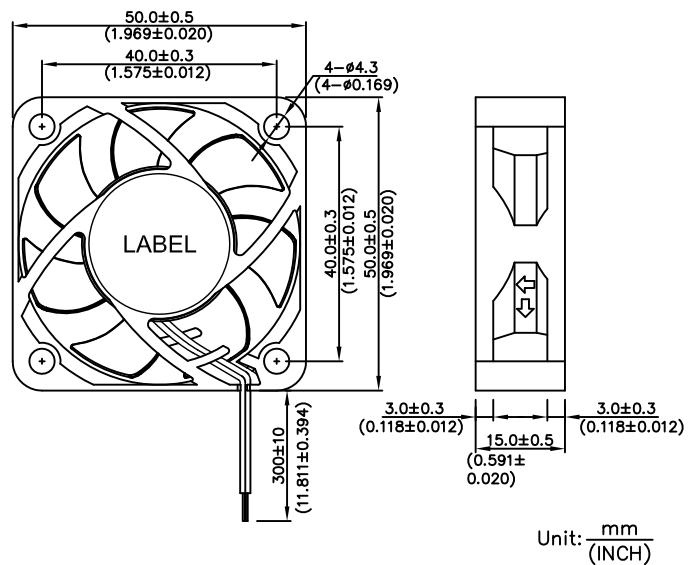
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA050E12L	-FG			●			12	7.0-13.2	0.08	0.96	4300	0.321	11.34	2.87	0.113	24.2
PVA050E12M	-FG			●			12	7.0-13.2	0.11	1.32	5300	0.398	14.07	4.24	0.167	29.8
PVA050E12H	-FG			●			12	7.0-13.2	0.21	2.52	6500	0.489	17.28	6.22	0.245	35.8

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 60 x 60 x 20mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

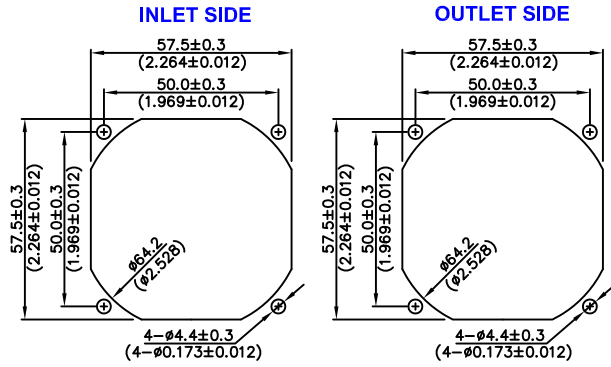
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

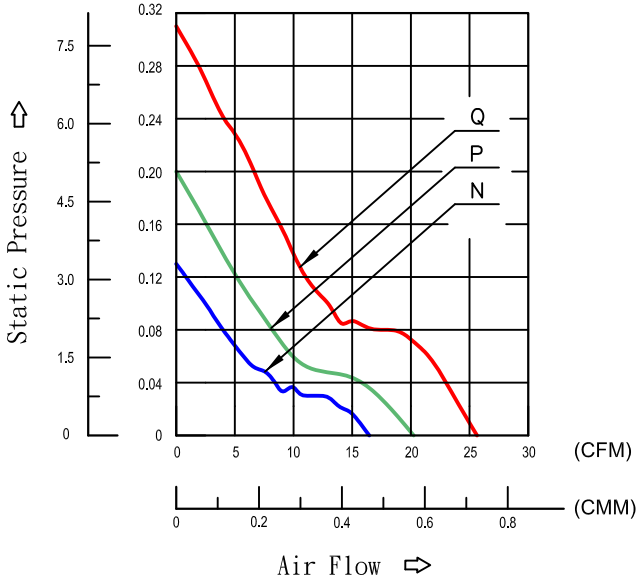
62 Gram (Ref.)

### MOUNTING PANEL CUTOUT

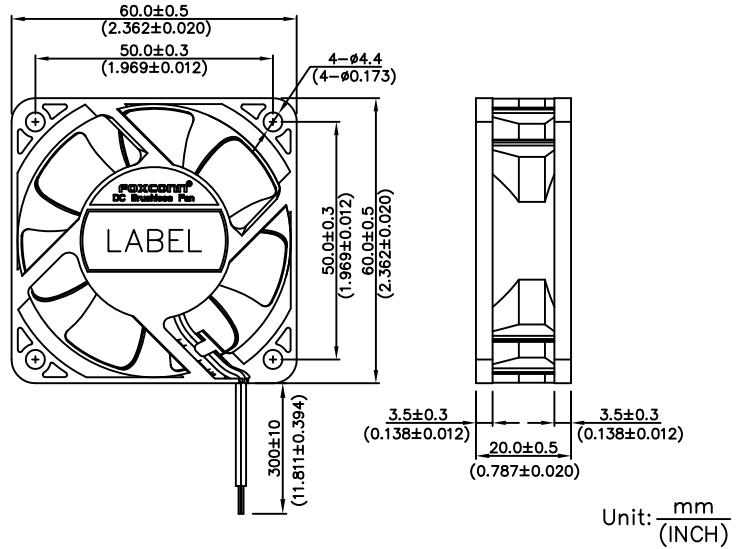


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA060F12N	-FG			●			12	7.0-13.2	0.08	0.96	3200	0.441	15.58	3.05	0.120	23.2
PVA060F12P	-FG			●			12	7.0-13.2	0.10	1.20	4000	0.573	20.23	5.08	0.200	29.4
PVA060F12Q	-FG			●			12	7.0-13.2	0.16	1.92	5000	0.733	25.89	7.92	0.312	36.6

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 60 x 60 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

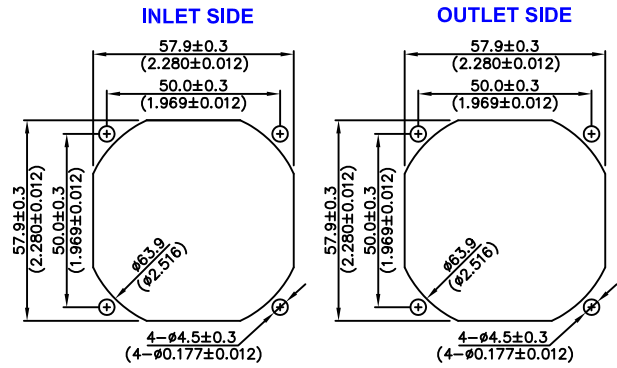
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

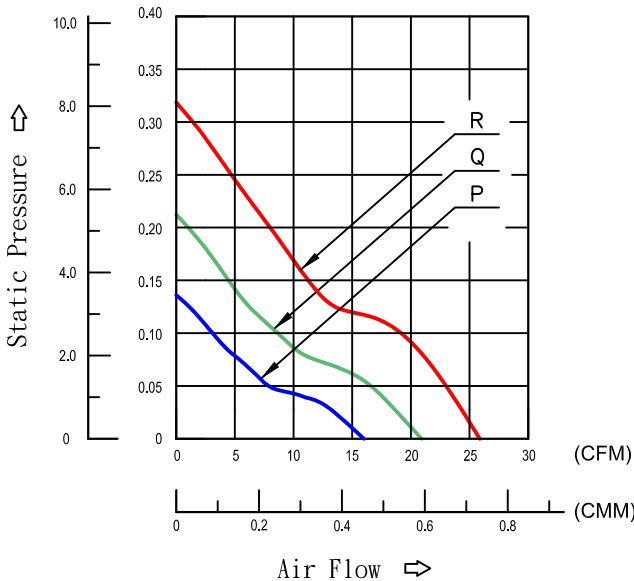
55 Gram (Ref.)

### MOUNTING PANEL CUTOUT

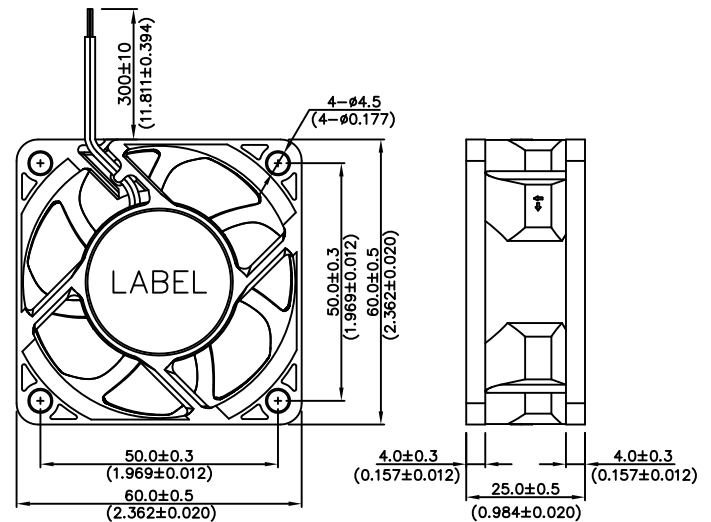


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA060G12P	-FG	●		●			12	7.0-13.2	0.08	0.96	3600	0.466	16.45	3.56	0.140	25.1
PVA060G12Q	-FG	●		●			12	7.0-13.2	0.09	1.08	4500	0.592	20.90	5.38	0.212	31.7
PVA060G12R	-FG	●		●			12	7.0-13.2	0.23	2.76	5600	0.733	25.87	8.08	0.318	37.9
PVA060G24P	-FG/-RD	●					24	12.0-26.4	0.04	0.96	3600	0.466	16.45	3.56	0.140	25.1
PVA060G24Q	-FG/-RD	●					24	12.0-26.4	0.06	1.44	4500	0.592	20.90	5.38	0.212	31.7
PVA060G24R	-FG/-RD	●					24	12.0-26.4	0.08	1.92	5600	0.733	25.87	8.08	0.318	37.9

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 70 x 70 x 15mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

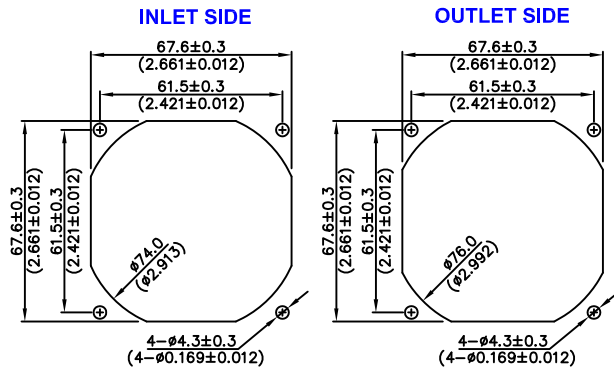
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

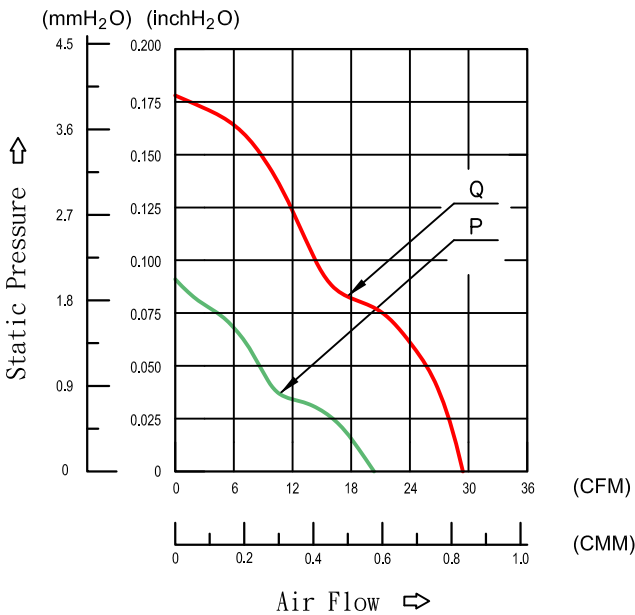
### Weight :

50 Gram (Ref.)

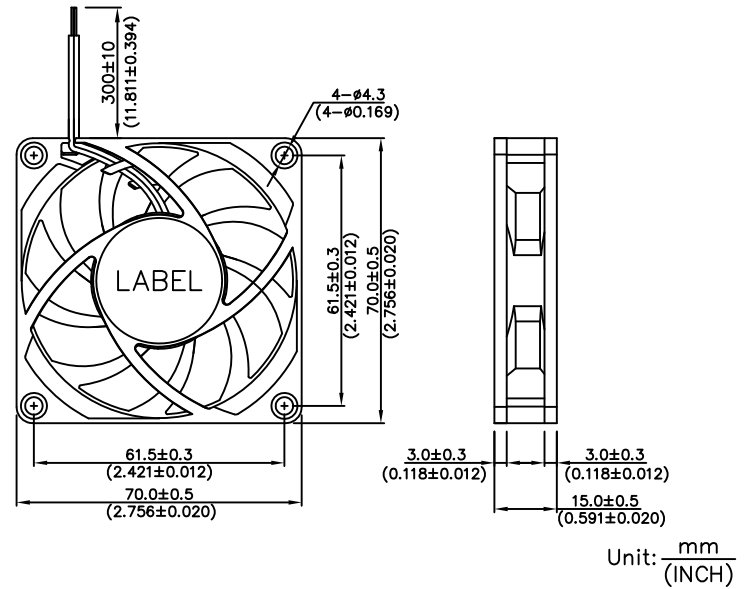
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA070E12P	-FG	●	●				12	7.0-13.2	0.07	0.84	3000	0.576	20.33	2.31	0.091	25.7
PVA070E12Q	-FG	●	●				12	7.0-13.2	0.17	2.04	4200	0.833	29.42	4.52	0.178	36.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 70 x 70 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

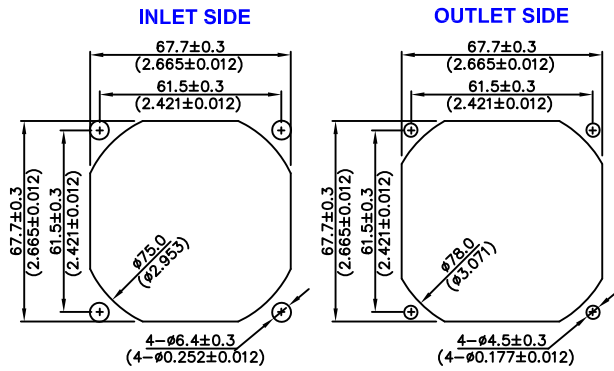
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

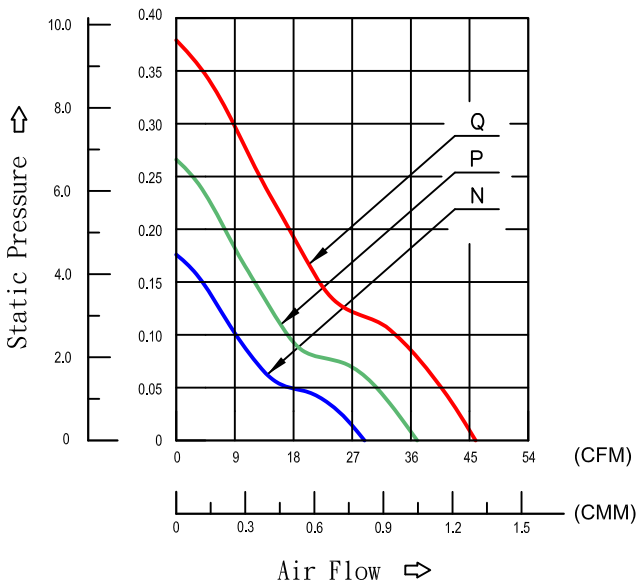
77 Gram (Ref.)

### MOUNTING PANEL CUTOUT

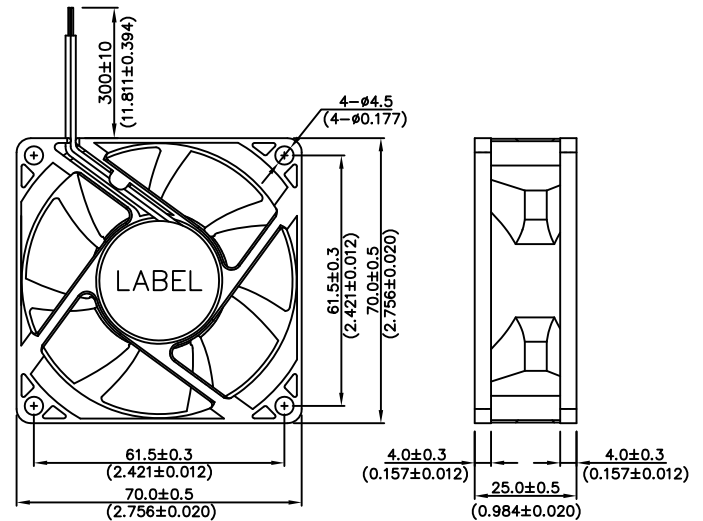


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA070G12N	-FG	●		●			12	7.0-13.2	0.11	1.32	3500	0.820	28.96	4.49	0.177	31.7
PVA070G12P	-FG	●	●	●			12	7.0-13.2	0.18	2.16	4400	1.035	36.54	6.73	0.265	38.5
PVA070G12Q	-FG	●		●			12	7.0-13.2	0.34	4.08	5400	1.293	45.66	9.50	0.374	44.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 80 x 80 x 15mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

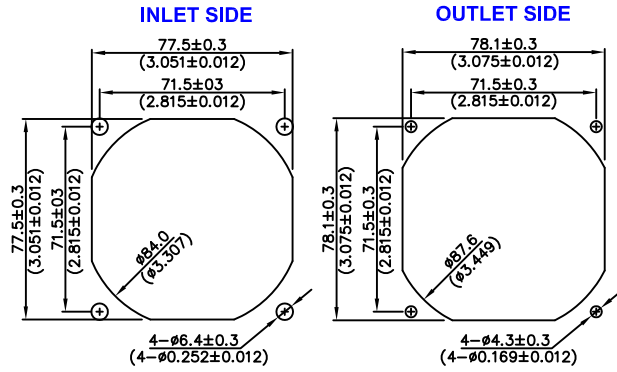
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

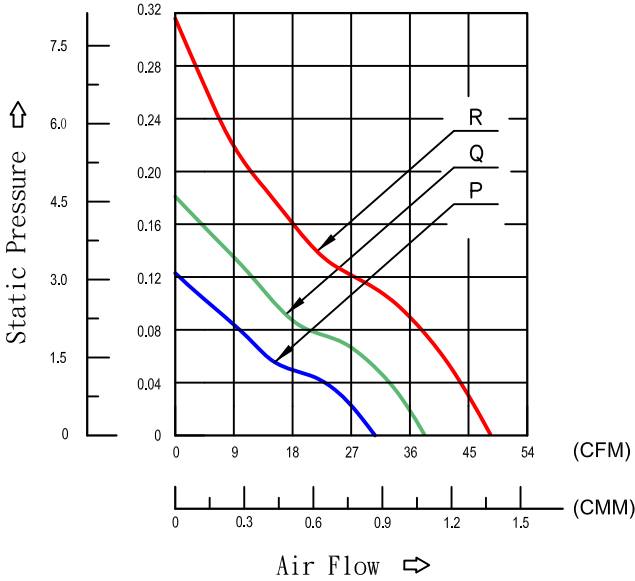
53 Gram (Ref.)

### MOUNTING PANEL CUTOUT

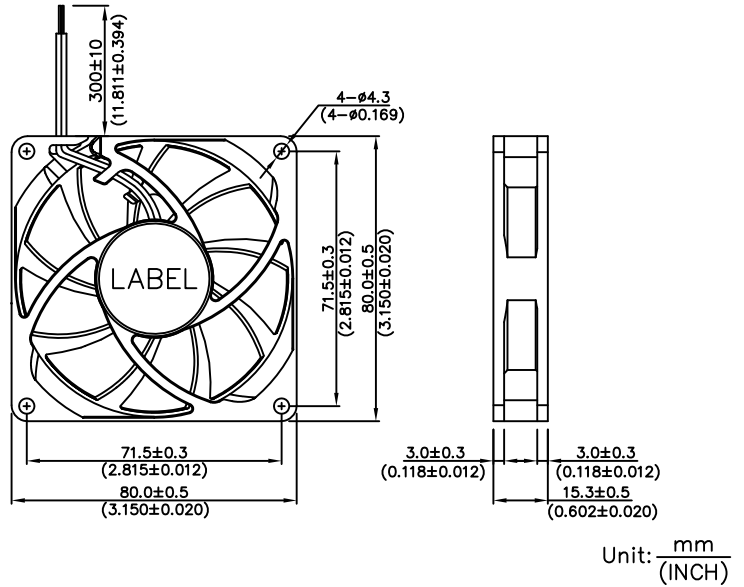


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA080E12P	-FG/-RD	●			●		12	7.0-13.2	0.10	1.20	3200	0.868	30.64	3.12	0.123	33.4
PVA080E12Q	-FG/-RD	●			●		12	7.0-13.2	0.17	2.04	4000	1.082	38.20	4.60	0.181	39.2
PVA080E12R	-FG/-RD	●			●		12	7.0-13.2	0.36	4.32	5000	1.369	48.34	8.20	0.323	45.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 80 x 80 x 20mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

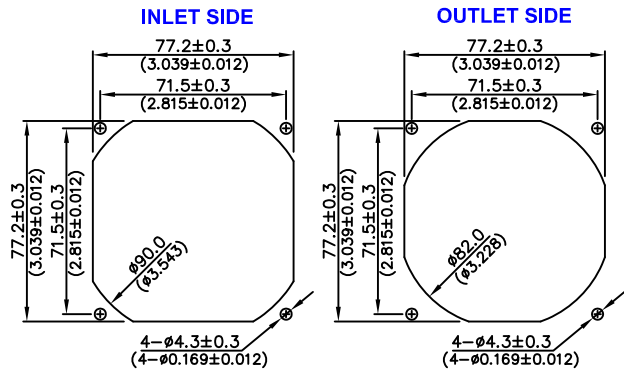
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

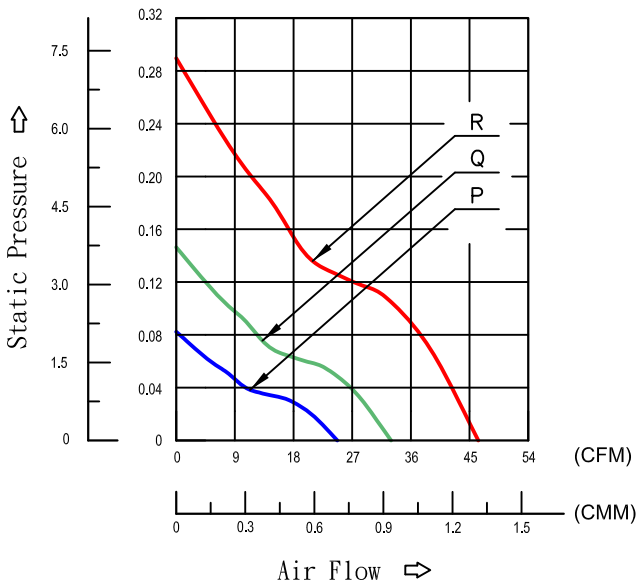
61 Gram (Ref.)

### MOUNTING PANEL CUTOUT

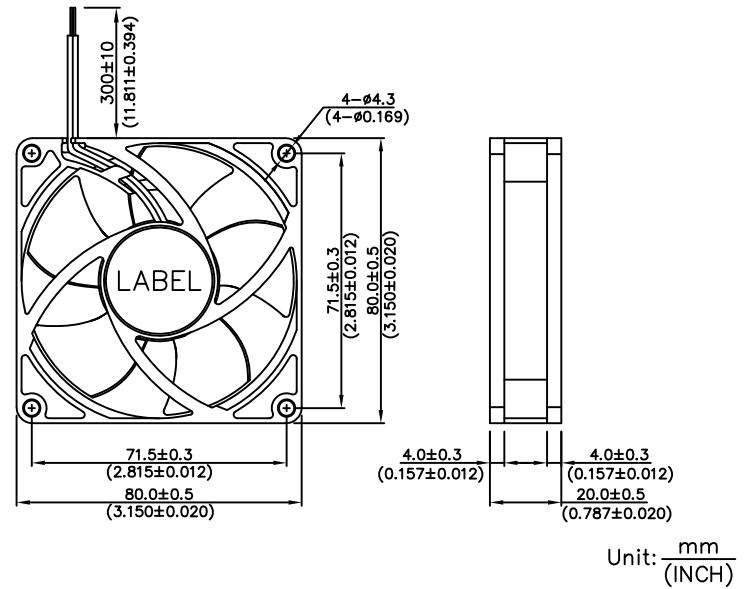


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA080F12P	-FG	●		●			12	7.0-13.2	0.07	0.84	2400	0.677	23.91	2.03	0.080	23.2
PVA080F12Q	-FG	●		●			12	7.0-13.2	0.11	1.32	3200	0.917	32.39	3.84	0.151	31.6
PVA080F12R	-FG	●		●			12	7.0-13.2	0.24	2.88	4500	1.317	46.50	6.63	0.261	41.4

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.



# PVA 80 x 80 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

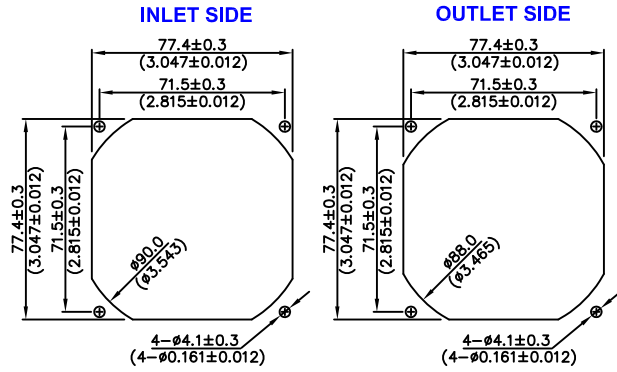
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

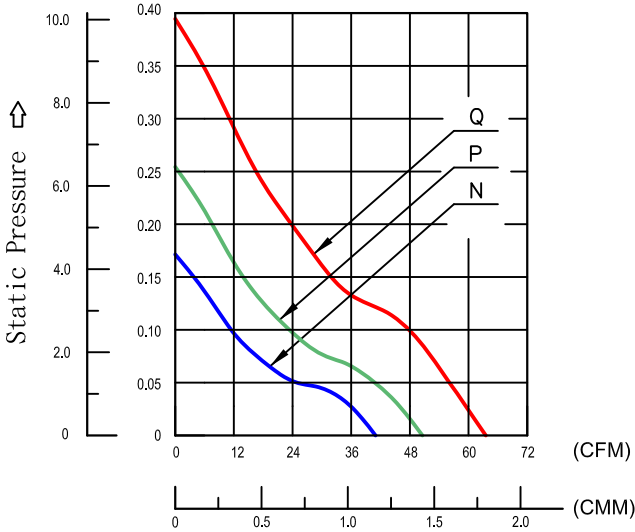
76 Gram (Ref.)

### MOUNTING PANEL CUTOUT

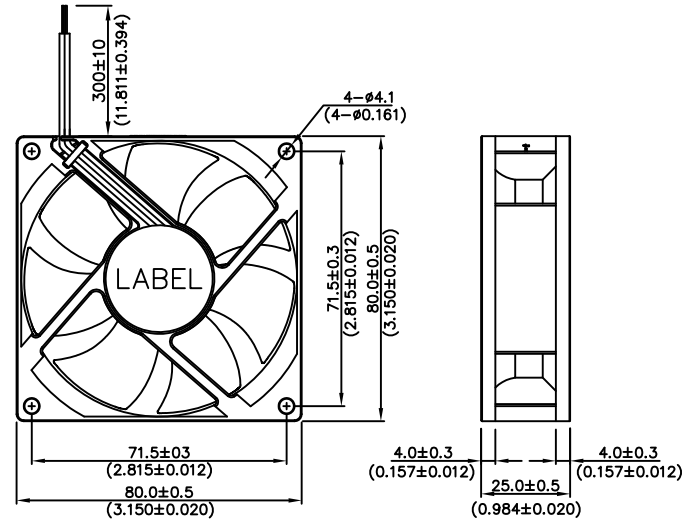


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA080G12N	-FG/-RD	●		●	●		12	7.0-13.2	0.12	1.44	3000	1.160	40.98	4.34	0.171	32.4
PVA080G12P	-FG/-RD	●		●	●		12	7.0-13.2	0.20	2.40	3700	1.431	50.55	6.45	0.254	38.9
PVA080G12Q	-FG/-RD	●		●	●		12	7.0-13.2	0.34	4.08	4600	1.798	63.51	10.02	0.395	44.2
PVA080G24N	-FG/-RD	●					24	12.0-26.4	0.06	1.44	3000	1.160	40.98	4.34	0.171	32.4
PVA080G24P	-FG/-RD	●					24	12.0-26.4	0.10	2.40	3700	1.431	50.55	6.45	0.254	38.9
PVA080G24Q	-FG/-RD	●					24	12.0-26.4	0.16	3.84	4600	1.798	63.51	10.02	0.395	44.2

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 80 x 80 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

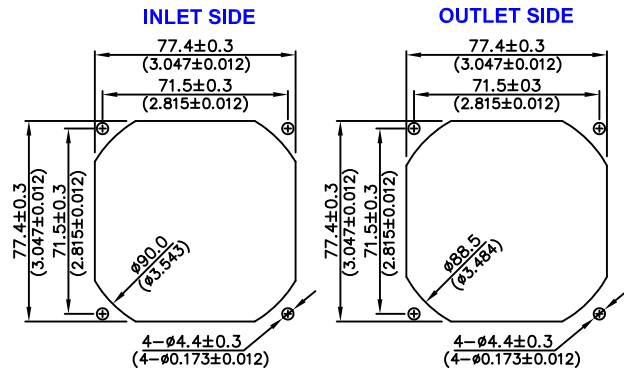
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

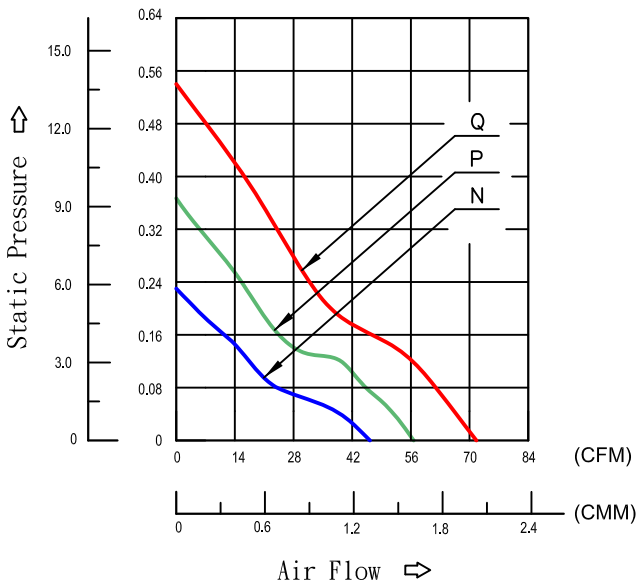
142 Gram (Ref.)

### MOUNTING PANEL CUTOUT

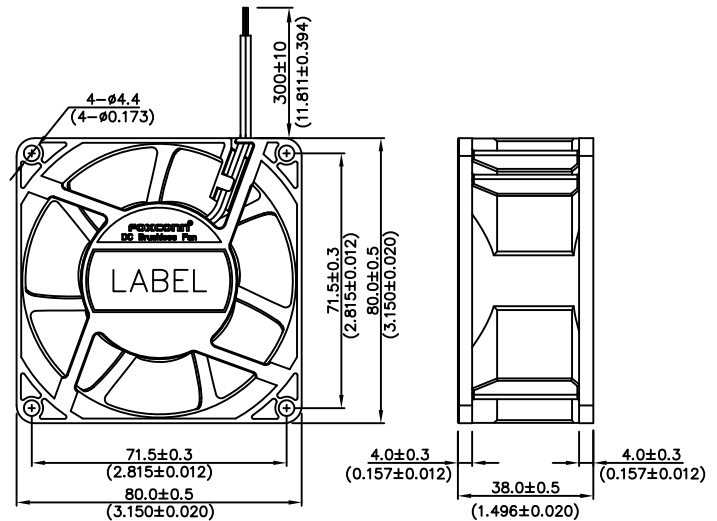


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA080K12N	-FG/-RD			●			12	7.0-13.2	0.16	1.92	3200	1.258	44.43	5.99	0.236	35.2
PVA080K12P	-FG/-RD			●			12	7.0-13.2	0.28	3.36	4000	1.604	56.65	9.32	0.367	41.7
PVA080K12Q	-FG/-RD			●			12	7.0-13.2	0.53	6.36	5000	2.024	71.47	13.72	0.540	47.3

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 92 x 92 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

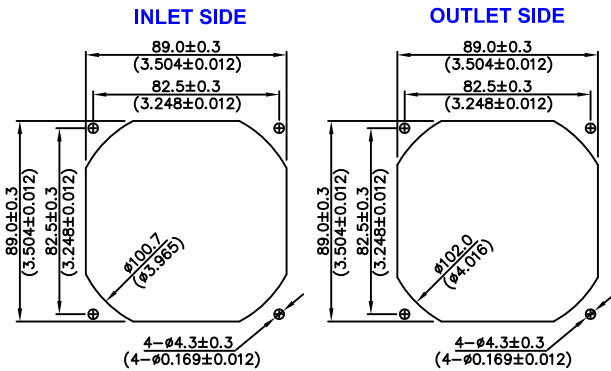
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

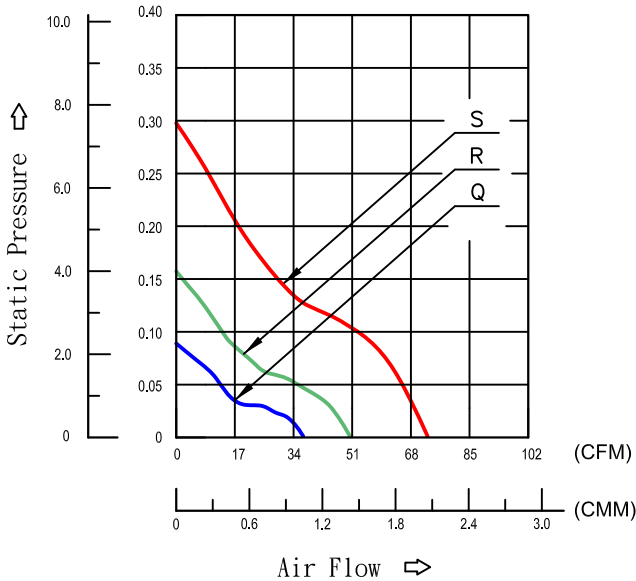
93 Gram (Ref.)

### MOUNTING PANEL CUTOUT

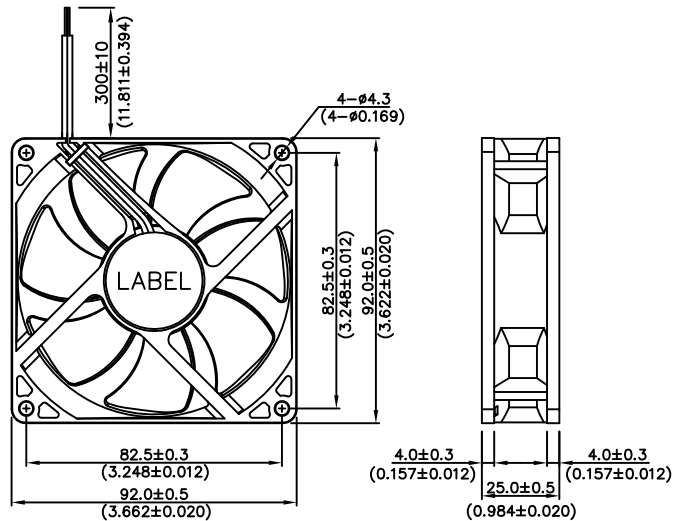


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA092G12Q	-FG/-RD	●		●	●		12	7.0-13.2	0.05	0.60	2100	1.042	36.79	2.29	0.090	25.6
PVA092G12R	-FG/-RD	●		●	●		12	7.0-13.2	0.10	1.20	2800	1.425	50.32	4.06	0.160	33.8
PVA092G12S	-FG/-RD	●		●	●		12	7.0-13.2	0.25	3.00	4000	2.062	72.83	7.72	0.304	43.5
PVA092G24Q	-FG/-RD	●					24	12.0-26.4	0.03	0.72	2100	1.042	36.79	2.29	0.090	25.6
PVA092G24R	-FG/-RD	●					24	12.0-26.4	0.06	1.44	2800	1.425	50.32	4.06	0.160	33.8
PVA092G24S	-FG/-RD	●					24	12.0-26.4	0.14	3.36	4000	2.062	72.83	7.72	0.304	43.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 92 x 92 x 32mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

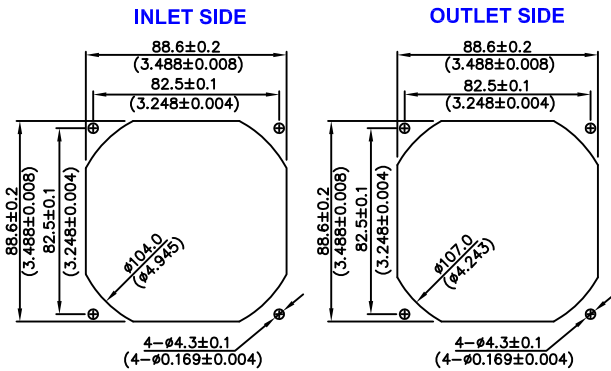
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

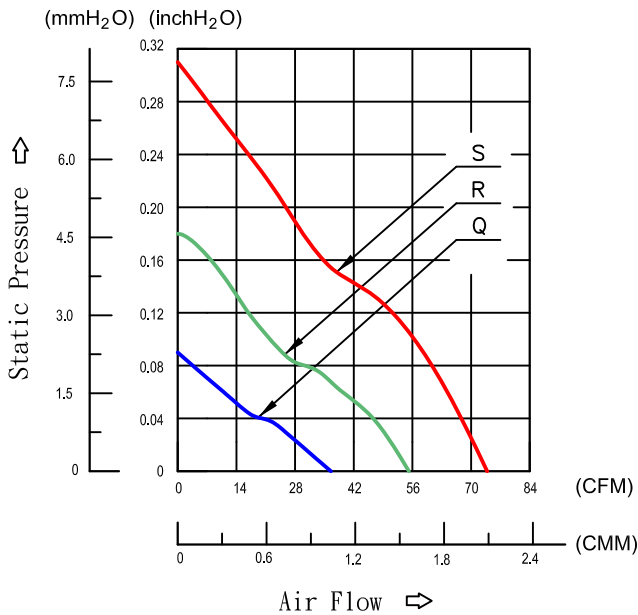
### Weight :

135 Gram (Ref.)

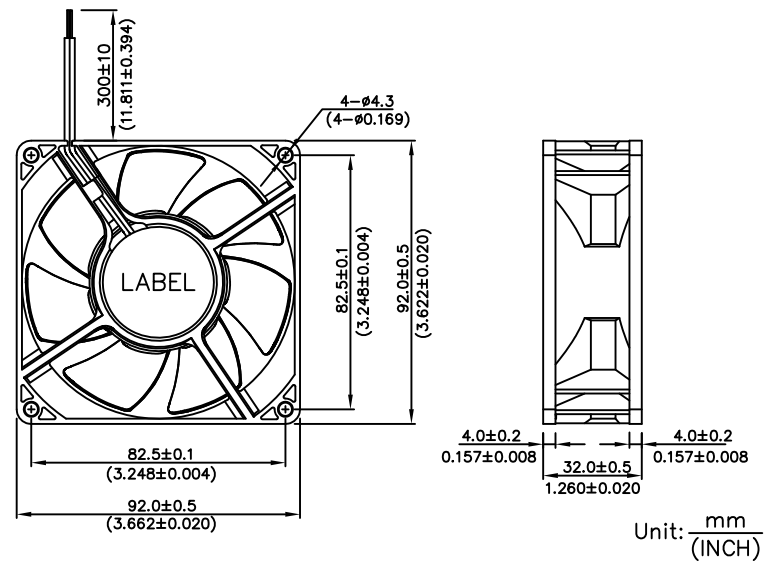
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA092J12Q	-FG	●		●			12	7.0-13.2	0.09	1.08	2000	1.004	35.46	2.11	0.083	25.6
PVA092J12R	-FG	●		●			12	7.0-13.2	0.19	2.28	3000	1.538	54.32	4.52	0.178	37.1
PVA092J12S	-FG	●		●			12	7.0-13.2	0.35	4.20	4000	2.072	73.17	7.62	0.300	45.4

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 92 x 92 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

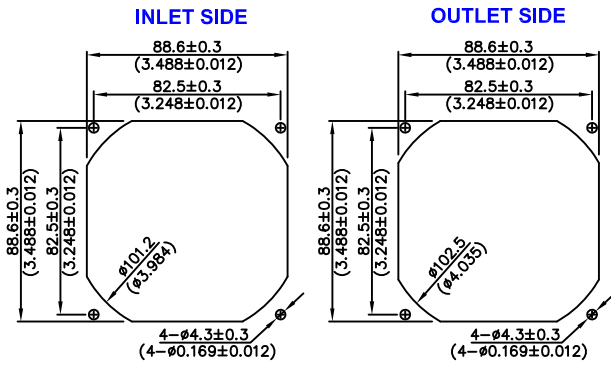
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

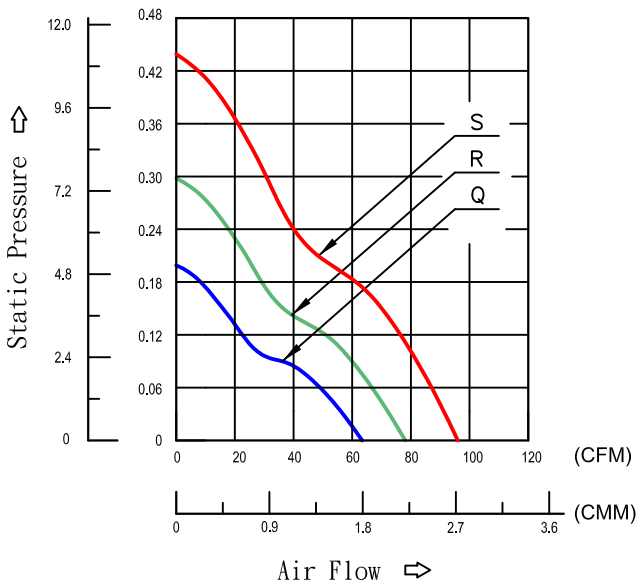
149 Gram (Ref.)

### MOUNTING PANEL CUTOUT

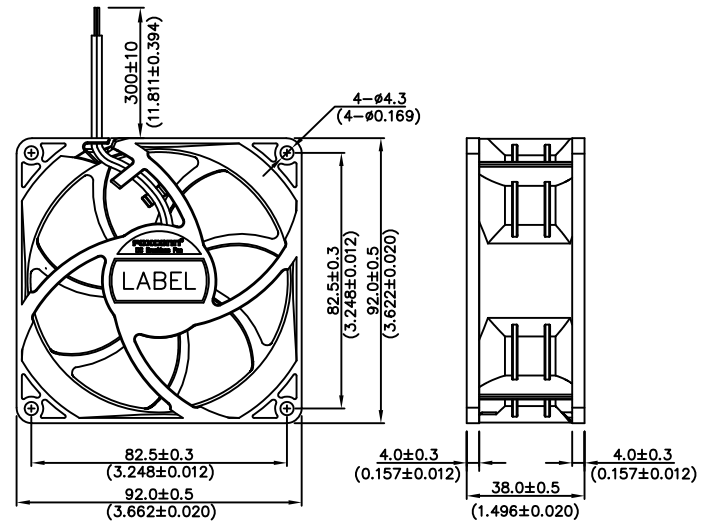


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA092K12Q	-FG	●		●			12	7.0-13.2	0.22	2.64	3000	1.795	63.39	5.05	0.199	34.2
PVA092K12R	-FG	●		●			12	7.0-13.2	0.38	4.56	3700	2.211	78.08	7.57	0.298	40.1
PVA092K12S	-FG	●		●			12	7.0-13.2	0.65	7.80	4500	2.727	96.30	11.15	0.439	47.6

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 120 x 120 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

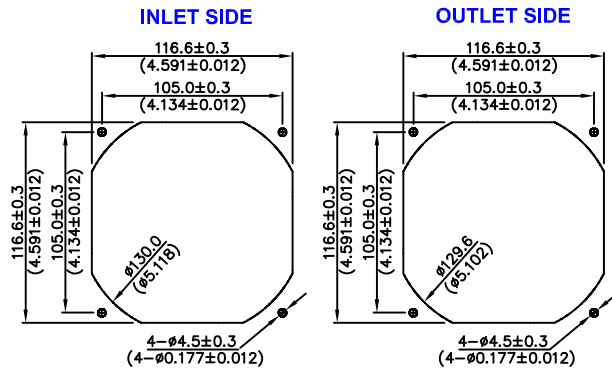
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

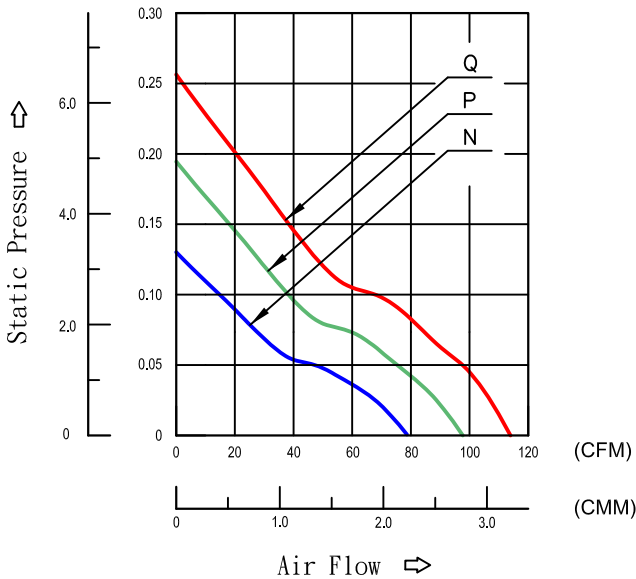
145 Gram (Ref.)

### MOUNTING PANEL CUTOUT

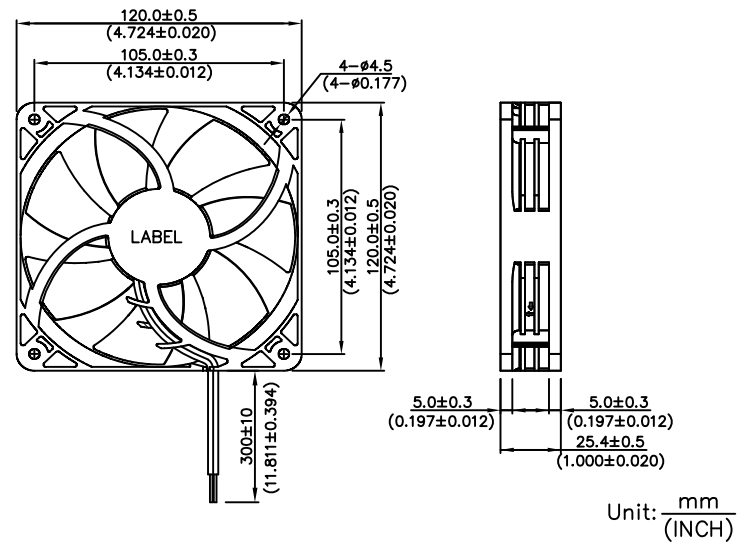


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA120G12N	-FG	●					12	7.0-13.2	0.19	2.28	2100	2.23	78.63	3.30	0.13	35.0
PVA120G12P	-FG	●					12	7.0-13.2	0.31	3.72	2600	2.77	97.68	4.83	0.19	41.3
PVA120G12Q	-FG	●					12	7.0-13.2	0.42	5.04	3000	3.25	114.64	6.60	0.26	45.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PVA 120 x 120 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

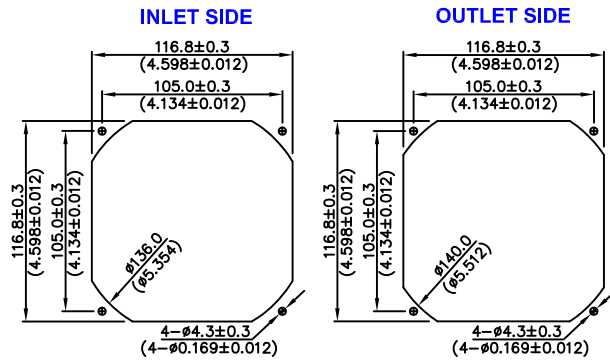
### Lead wires :

UL1007 AWG#24~#26 or Equivalent

### Weight :

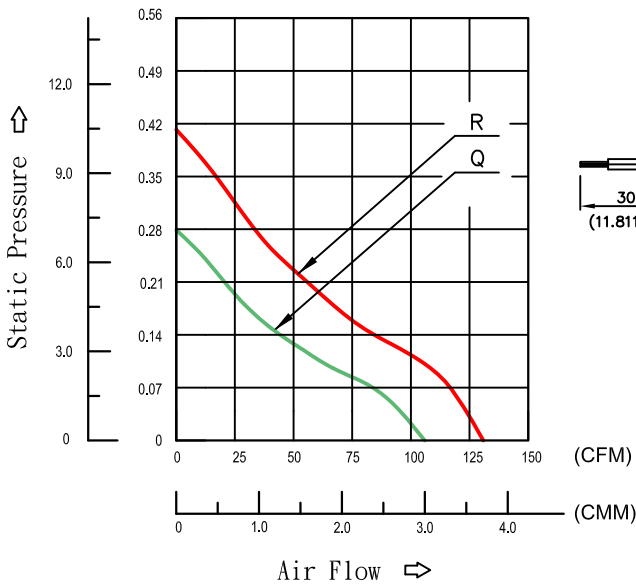
228 Gram (Ref.)

### MOUNTING PANEL CUTOUT

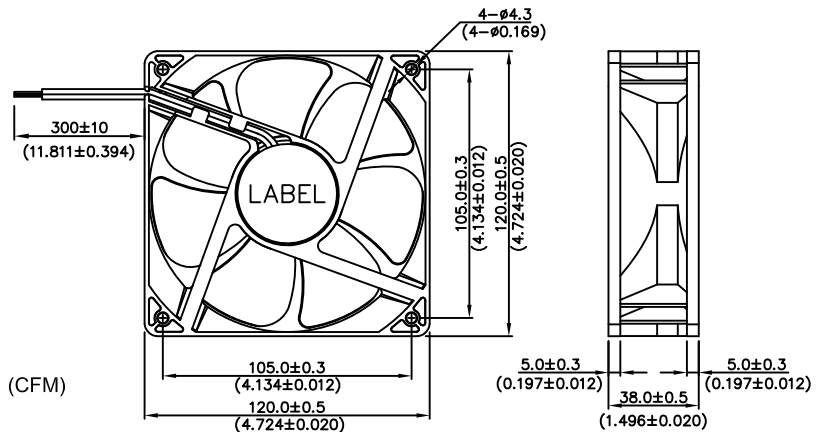


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVA120K12Q	-FG	●					12	7.0-13.2	0.24	2.88	2600	2.998	105.86	7.09	0.279	43.1
PVA120K12R	-FG	●					12	7.0-13.2	0.49	5.88	3200	3.704	130.82	10.46	0.412	49.5
PVA120K24Q	-FG/-RD	●					24	12.0-26.4	0.16	3.84	2600	2.998	105.86	7.09	0.279	43.1
PVA120K24R	-FG/-RD	●					24	12.0-26.4	0.32	7.68	3200	3.704	130.82	10.46	0.412	49.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

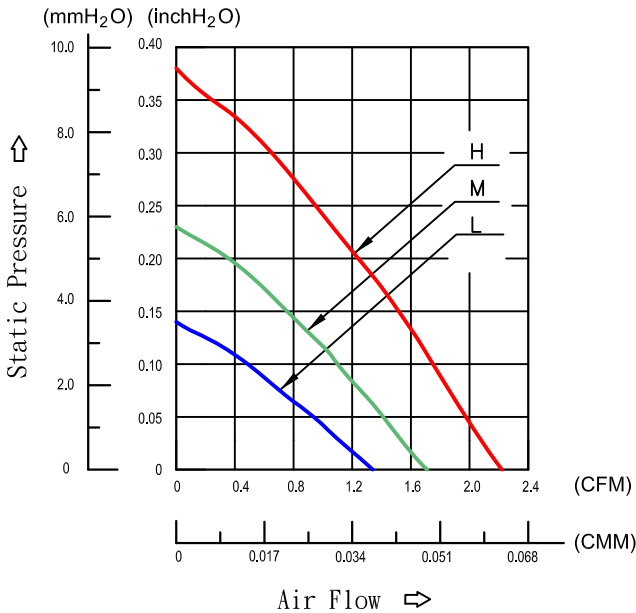
\* Specifications are subject to change without notice.

# PVB $\varnothing$ 50 x 05mm Series

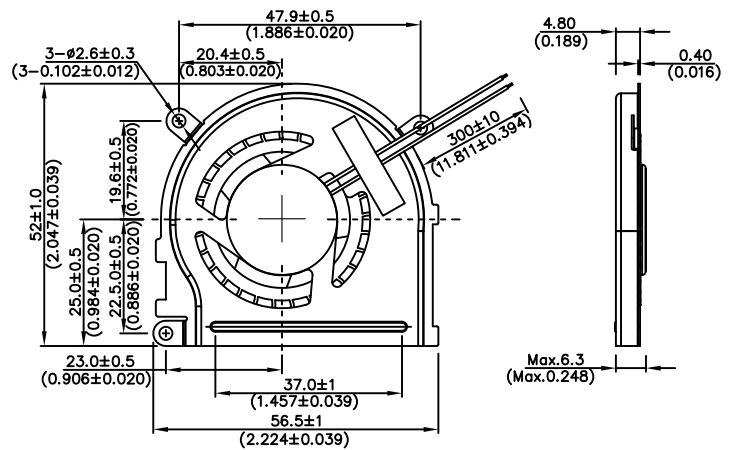


- **Material**  
 Impeller : Plastic, UL 94V-0, Black  
 Frame : Plate, Argentate
- **Lead wires :**  
 UL1061 AWG#30~#32 or Equivalent
- **Weight :**  
 15 Gram (Ref.)

### ■ P & Q CURVE (AT RATED VOLTAGE)



### ■ DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVB050A05L	-FG/-RD			●	BS	1S	5	4.1-5.0	0.07	0.35	3100	0.04	1.34	3.56	0.140	26.2
PVB050A05M	-FG/-RD			●			5	4.1-5.0	0.12	0.60	3800	0.05	1.71	5.84	0.230	33.0
PVB050A05H	-FG/-RD			●			5	4.1-5.0	0.20	1.00	4800	0.06	2.22	9.65	0.380	40.3

Bearing Type :  
**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

- \* Function type is optional.
- \* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.
- \* Noise is measured in anechoic chamber in free air, one meter from intake side.
- \* All readings are typical values at rated voltage.
- \* Specifications are subject to change without notice.



# PVB $\varnothing$ 75 x 25mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

### Lead wires :

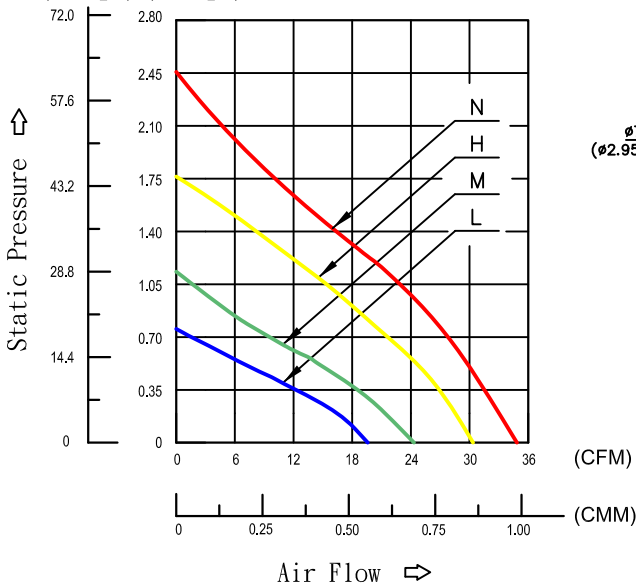
UL1061 AWG#24~#26 or Equivalent

### Weight :

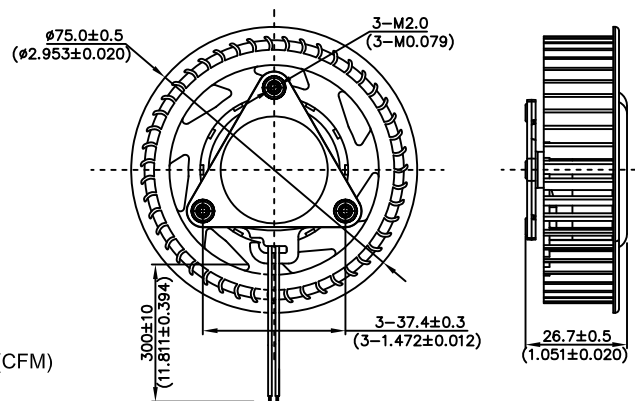
95 Gram (Ref.)

### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PVB070G12L	-FG/-RD	●					12	7.0-13.2	0.31	3.72	3100	0.558	19.70	19.56	0.77	38.0
PVB070G12M	-FG/-RD	●					12	7.0-13.2	0.52	6.24	3800	0.691	24.40	29.46	1.16	44.5
PVB070G12H	-FG/-RD	●					12	7.0-13.2	0.85	10.2	4700	0.861	30.40	45.47	1.79	49.0
PVB070G12N	-FG/-RD	●					12	7.0-13.2	1.32	15.84	5500	0.991	35.00	62.23	2.45	53.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIA 40 x 40 x 28mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

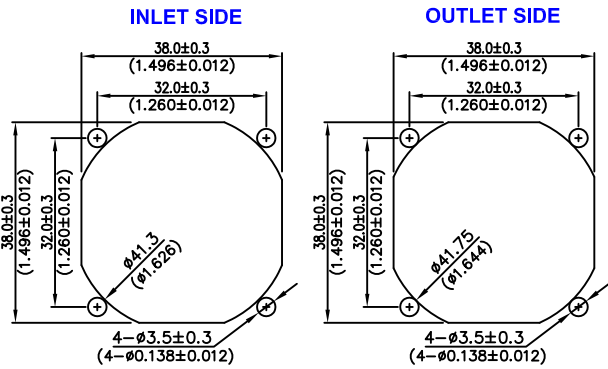
### Lead wires :

UL1061 AWG#26~#28 or Equivalent

### Weight :

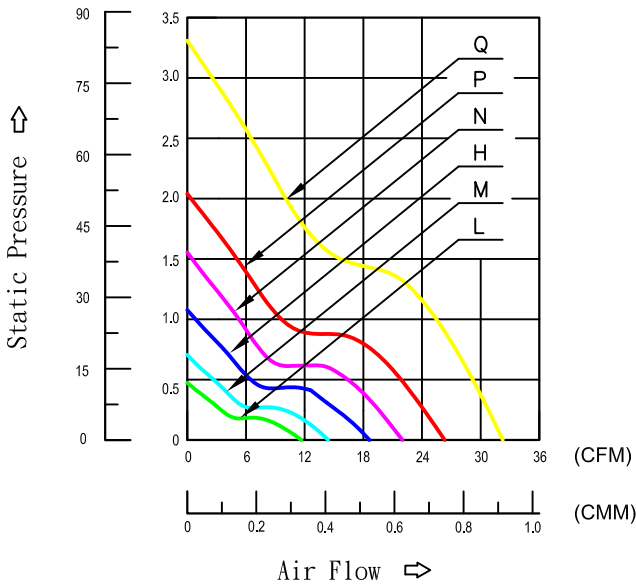
45 Gram (Ref.)

### MOUNTING PANEL CUTOUT

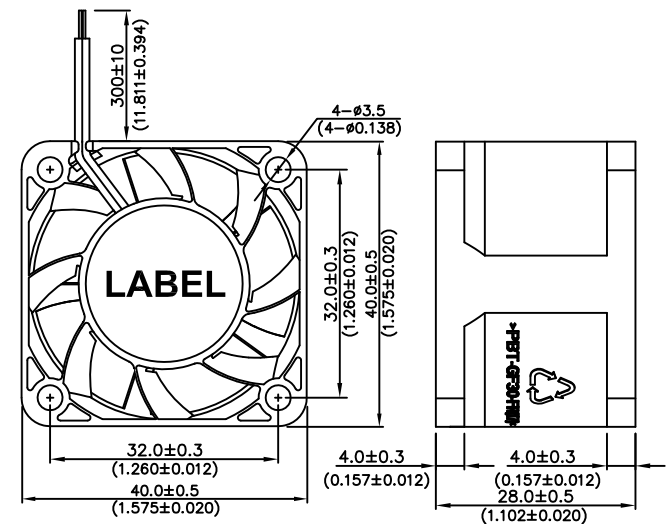


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{(INCH)}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA040H12L	-FG/-RD	●					12	7.0-13.2	0.10	1.20	8500	0.33	11.67	11.94	0.47	35.6
PIA040H12M	-FG/-RD	●					12	7.0-13.2	0.16	1.92	10500	0.41	14.44	18.03	0.71	41.0
PIA040H12H	-FG/-RD	●					12	7.0-13.2	0.26	3.12	13000	0.53	18.63	27.43	1.08	46.0
PIA040H12N	-FG/-RD	●					12	7.0-13.2	0.33	3.96	15500	0.62	22.00	39.37	1.55	50.1
PIA040H12P	-FG/-RD	●					12	7.0-13.2	0.59	7.08	18000	0.75	26.33	51.82	2.04	53.8
PIA040H12Q	-FG/-RD	●					12	7.0-13.2	1.35	16.2	23000	0.91	32.27	84.33	3.32	59.7

Bearing Type :

2B(Two Bearing) ; FFB(Fox-Flow Bearing) ; FTB(Foxconn Technology Bearing) ; BS(One Ball One Sleeve) ; 1S(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIA 60 x 60 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

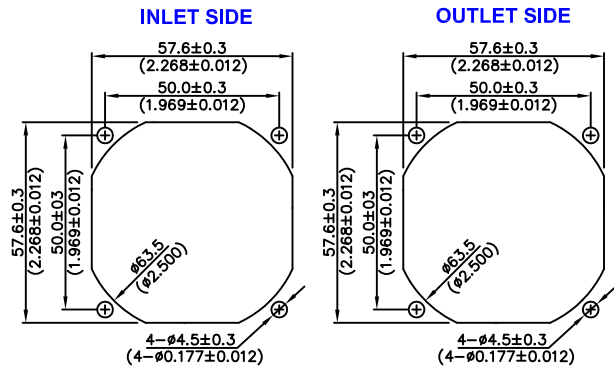
### Lead wires :

UL1061 AWG#24~#26 or Equivalent

### Weight :

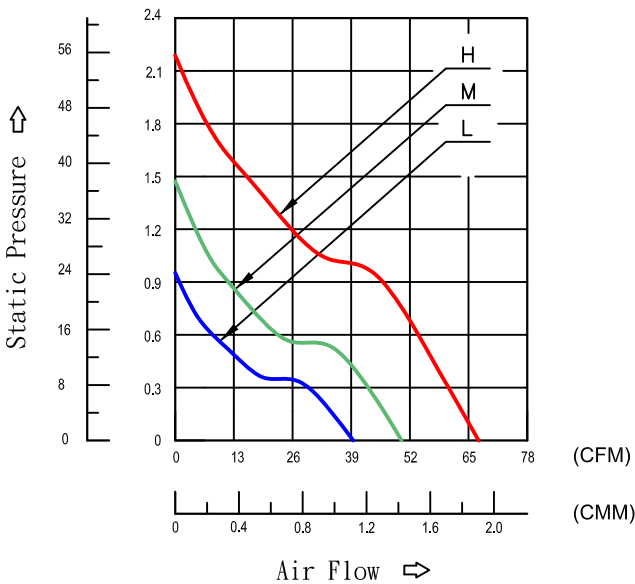
150 Gram (Ref.)

### MOUNTING PANEL CUTOUT

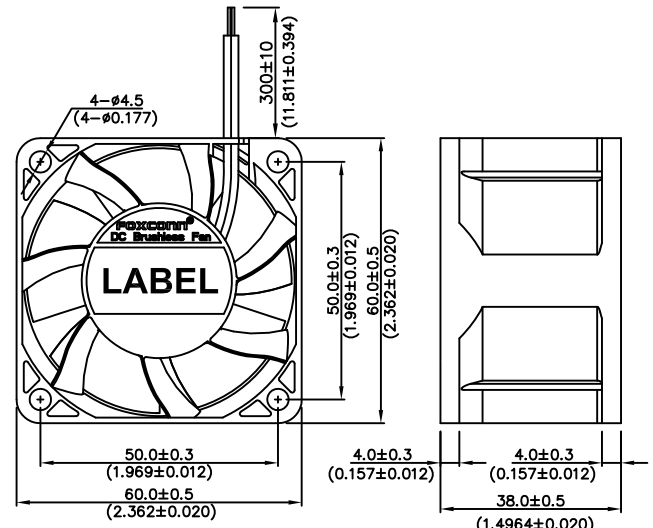


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA060K12L	-FG/-RD	●					12	7.0-13.2	0.34	4.08	8000	1.12	39.46	24.13	0.95	49.9
PIA060K12M	-FG/-RD	●					12	7.0-13.2	0.59	7.08	10000	1.42	50.18	37.34	1.47	55.0
PIA060K12H	-FG/-RD	●					12	7.0-13.2	1.28	15.36	13000	1.90	67.24	55.63	2.19	61.2

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIA 60 x 60 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

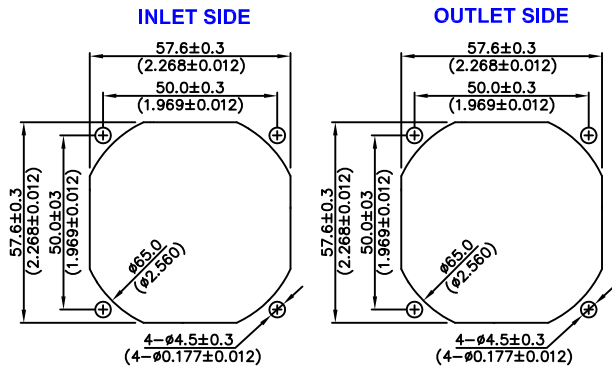
### Lead wires :

UL1061 AWG#24~#26 or Equivalent

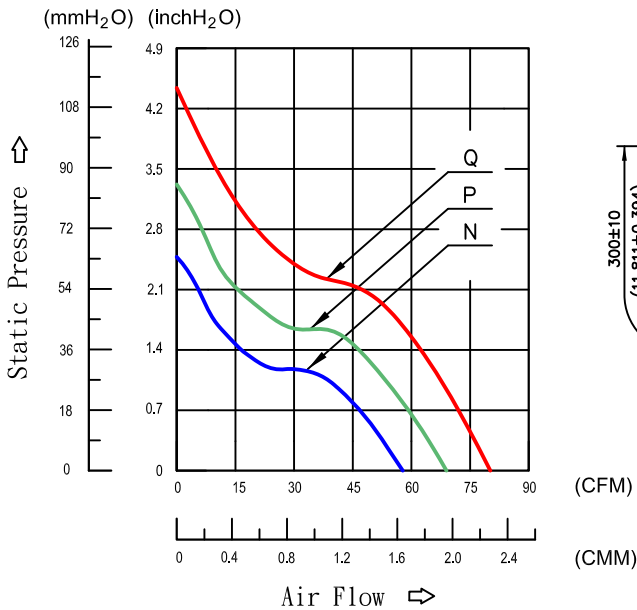
### Weight :

120 Gram (Ref.)

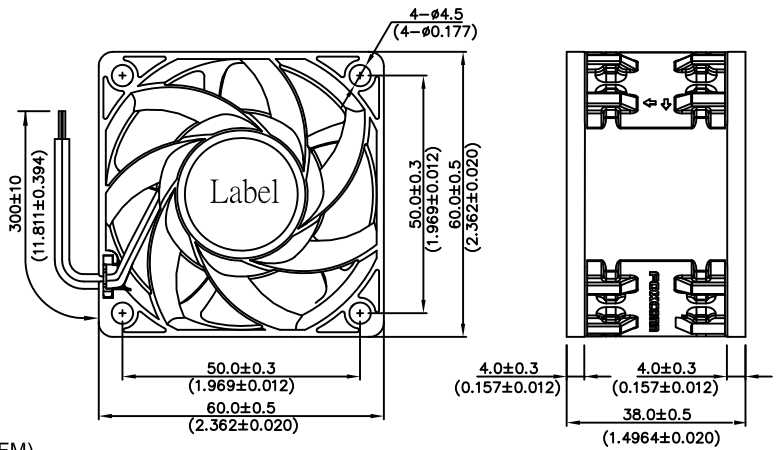
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA060K12N	-FG/-RD	●					12	7.0-13.2	0.96	11.52	12500	1.628	57.50	62.74	2.470	58.5
PIA060K12P	-FG/-RD	●					12	7.0-13.2	1.51	18.12	14500	1.917	67.70	82.79	3.220	62.4
PIA060K12Q	-FG/-RD	●					12	7.0-13.2	2.43	29.16	17100	2.265	80.00	109.22	4.300	66.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

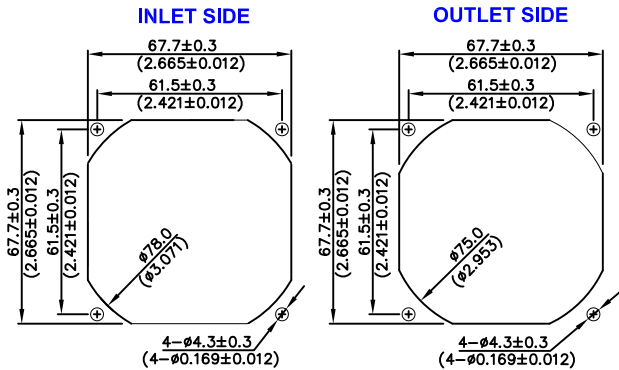
\* Specifications are subject to change without notice.

# PIA 70 x 70 x 25mm Series

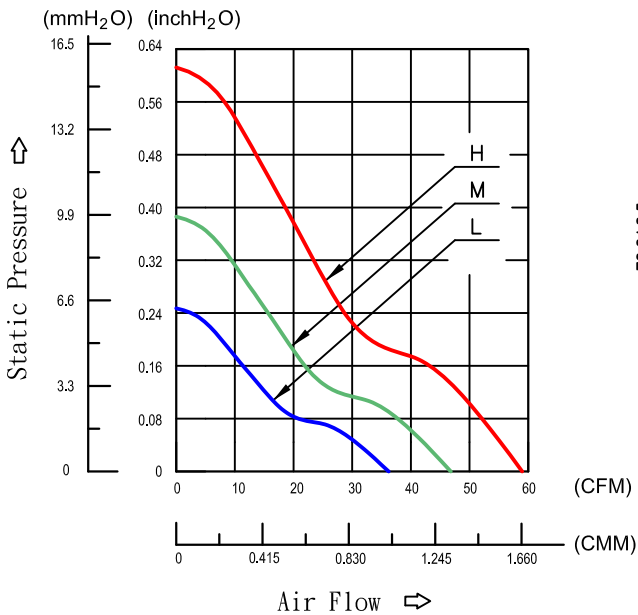


- **Material**  
 Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black
- **Lead wires :**  
 UL1007 AWG#24~#26 or Equivalent
- **Weight :**  
 76 Gram (Ref.)

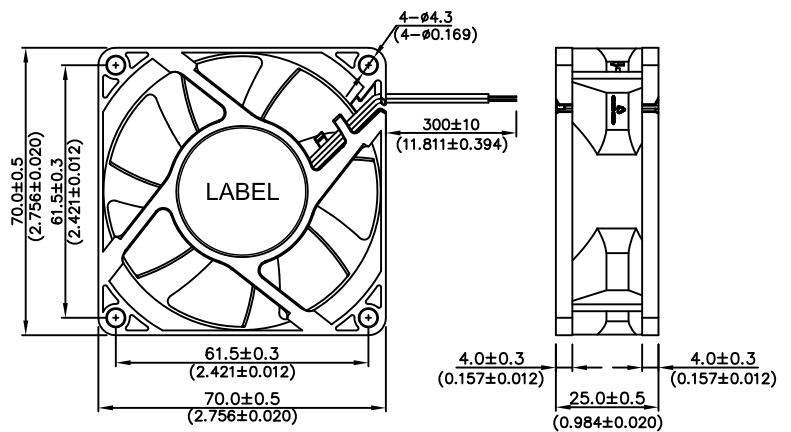
■ **MOUNTING PANEL CUTOUT**



■ **P & Q CURVE (AT RATED VOLTAGE)**



■ **DIMENSIONS DRAWING**



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA070G12L	-FG/-RD	●					12	7.0-13.2	0.19	2.28	4000	1.03	36.26	6.35	0.250	39.7
PIA070G12M	-FG/-RD	●					12	7.0-13.2	0.37	4.44	5000	1.32	46.69	9.65	0.380	45.8
PIA070G12H	-FG/-RD	●					12	7.0-13.2	0.64	7.68	6300	1.67	59.10	15.49	0.610	51.5

Bearing Type :  
**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

- \* Function type is optional.
- \* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.
- \* Noise is measured in anechoic chamber in free air, one meter from intake side.
- \* All readings are typical values at rated voltage.
- \* Specifications are subject to change without notice.

# PIA 80 x 80 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

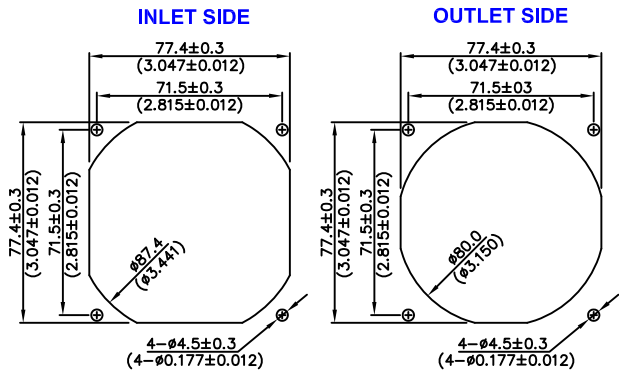
### Lead wires :

UL1061 AWG#22~#26 or Equivalent

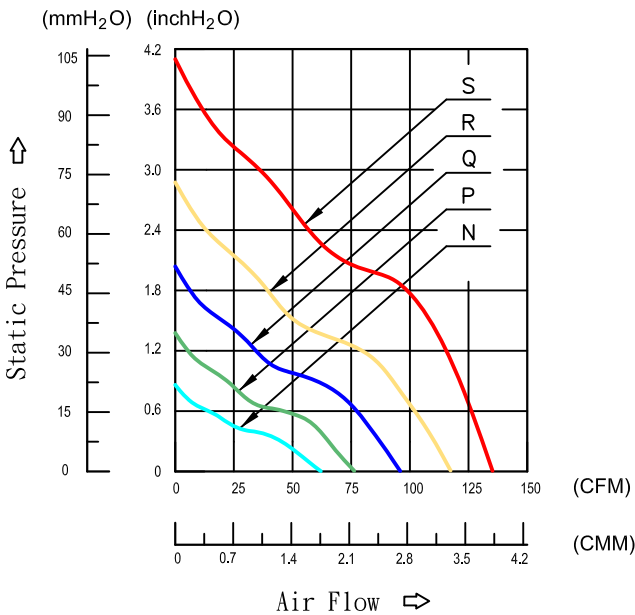
### Weight :

230 Gram (Ref.)

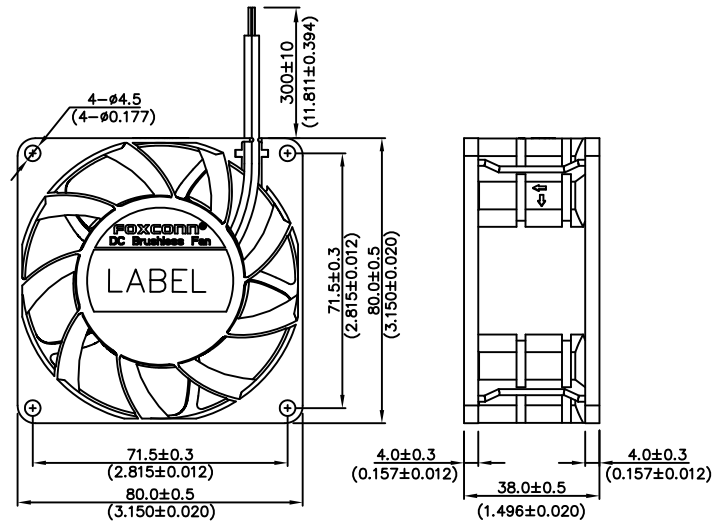
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA080K12N	-FG/-RD	●					12	7.0-13.2	0.43	5.16	6200	1.73	61.15	21.34	0.84	49.0
PIA080K12P	-FG/-RD	●					12	7.0-13.2	0.70	8.40	7700	2.15	75.83	34.54	1.36	56.4
PIA080K12Q	-FG/-RD	●					12	7.0-13.2	1.27	15.24	9500	2.68	94.76	48.77	1.92	60.8
PIA080K12R	-FG/-RD	●					12	7.0-13.2	2.12	25.44	11500	3.31	116.88	72.90	2.87	65.3
PIA080K12S	-FG/-RD	●					12	7.0-13.2	3.60	43.20	13800	3.80	134.03	104.14	4.10	68.9

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIA 92 x 92 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

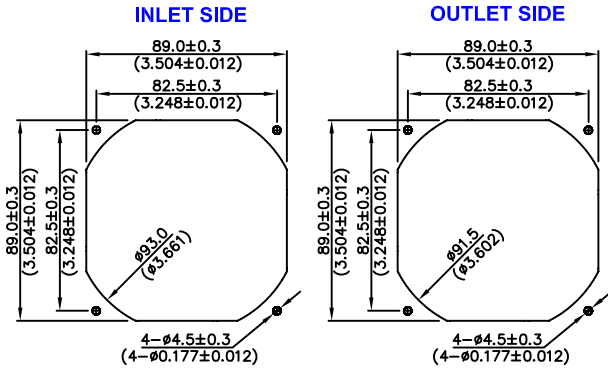
### Lead wires :

UL1061 AWG#22~#26 or Equivalent

### Weight :

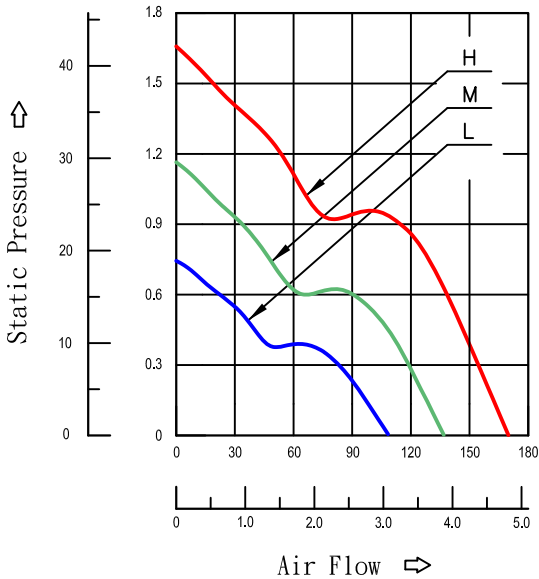
210 Gram (Ref.)

### MOUNTING PANEL CUTOUT

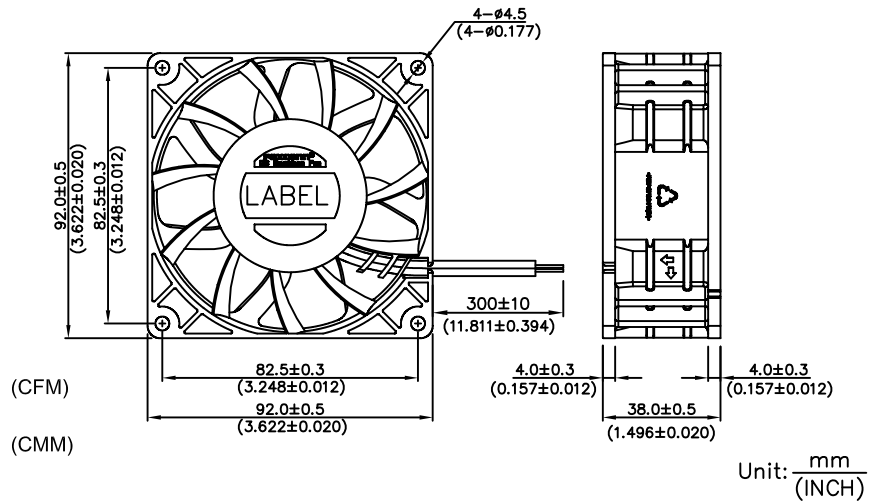


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA092K12L	-FG/-RD	●					12	7.0-13.2	0.89	10.68	6000	3.07	108.34	19.05	0.75	55.0
PIA092K12M	-FG/-RD	●					12	7.0-13.2	1.63	19.56	7500	3.87	136.77	29.46	1.16	61.0
PIA092K12H	-FG/-RD	●					12	7.0-13.2	3.08	36.96	9200	4.81	169.85	42.16	1.66	65.5

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

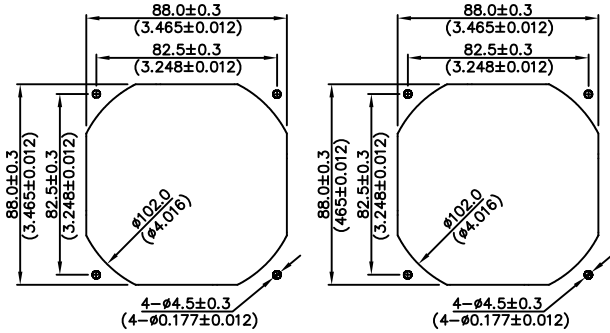
\* Specifications are subject to change without notice.

# PIA 92 x 92 x 38mm Series

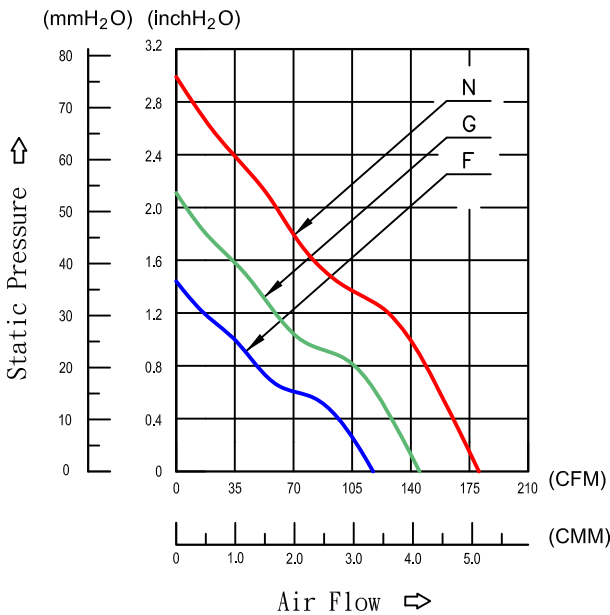


- **Material**  
 Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black
- **Lead wires :**  
 UL1061 AWG#22~#26 or Equivalent
- **Weight :**  
 210 Gram (Ref.)

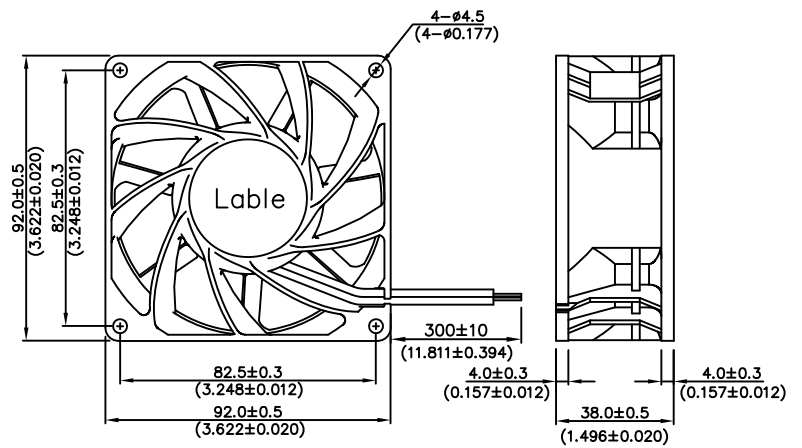
■ **MOUNTING PANEL CUTOUT**



■ **P & Q CURVE (AT RATED VOLTAGE)**



■ **DIMENSIONS DRAWING**



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA092K12F	-FG/-RD	●					12	7.0-13.2	1.10	13.2	7600	3.33	117.52	36.58	1.44	59.8
PIA092K12G	-FG/-RD	●					12	7.0-13.2	2.04	24.48	9400	4.11	145.20	53.59	2.11	64.1
PIA092K12N	-FG/-RD	●					12	7.0-13.2	4.13	49.56	11600	5.11	180.57	75.95	2.99	70.0

Bearing Type :  
**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

- \* Function type is optional.
- \* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.
- \* Noise is measured in anechoic chamber in free air, one meter from intake side.
- \* All readings are typical values at rated voltage.
- \* Specifications are subject to change without notice.



# PIA 120 x 120 x 38mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

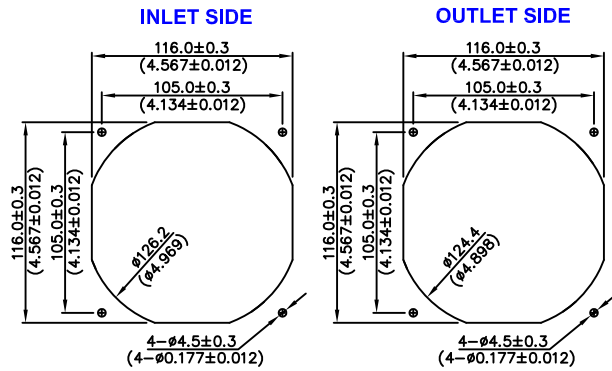
### Lead wires :

UL1007 AWG#22~#26 or Equivalent

### Weight :

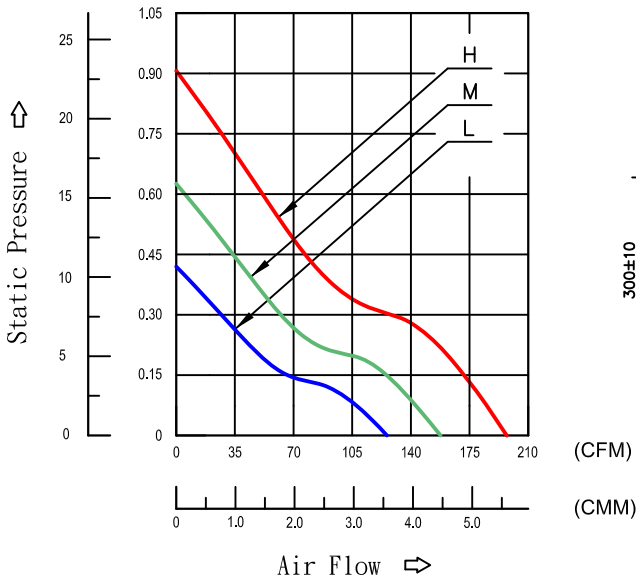
290 Gram (Ref.)

### MOUNTING PANEL CUTOUT

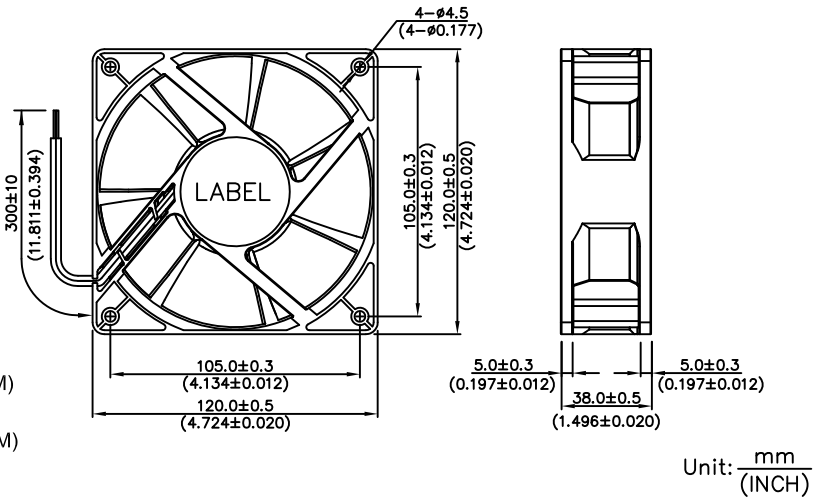


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIA120K12L	-FG/-RD	●					12	7.0-13.2	0.42	5.88	3600	3.56	125.67	10.67	0.42	52.0
PIA120K12M	-FG/-RD	●					12	7.0-13.2	0.78	10.68	4500	4.47	157.71	16.00	0.63	57.0
PIA120K12H	-FG/-RD	●					12	7.0-13.2	1.69	23.16	5600	5.59	197.38	23.11	0.91	63.0

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

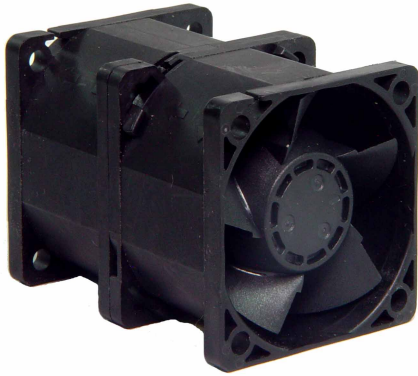
\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

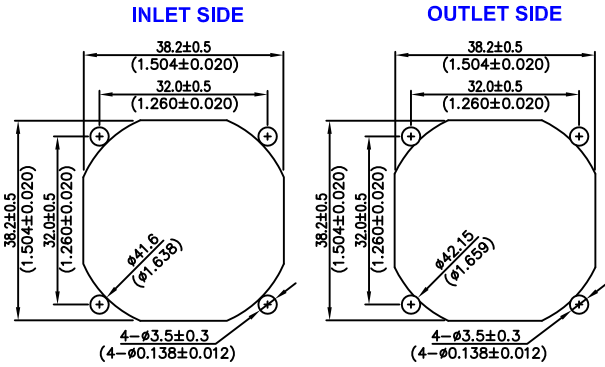
\* Specifications are subject to change without notice.

# 40 x 40 x 56mm Series



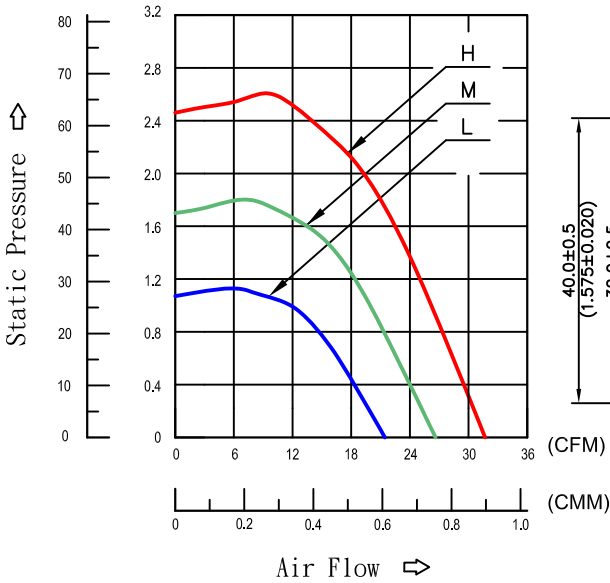
- **Material**  
Impeller : Plastic, UL 94V-0, Black  
Frame : Plastic, UL 94V-0, Black
- **Lead wires :**  
UL1061 AWG#28 or Equivalent
- **Weight :**  
82 Gram (Ref.)

### ■ MOUNTING PANEL CUTOUT

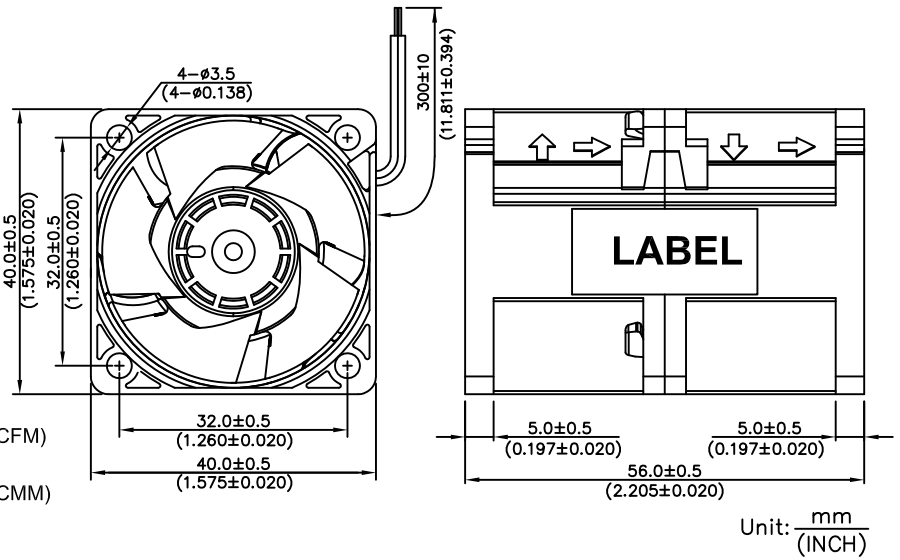


### ■ P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### ■ DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIH040M12L	-FG/-RD	●					12	7.0-13.2	0.48	5.76	11000	0.61	21.38	26.92	1.06	54.1
		●									9300					
PIH040M12M	-FG/-RD	●					12	7.0-13.2	0.84	10.08	13500	0.75	26.55	43.18	1.70	59.6
		●									11400					
PIH040M12H	-FG/-RD	●					12	7.0-13.2	1.32	15.84	16000	0.90	31.64	62.23	2.45	63.9
		●									13500					

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# 40 x 40 x 56mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

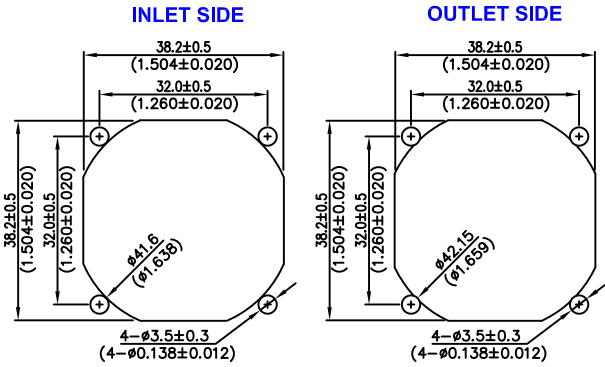
### Lead wires :

UL1061 AWG#28 or Equivalent

### Weight :

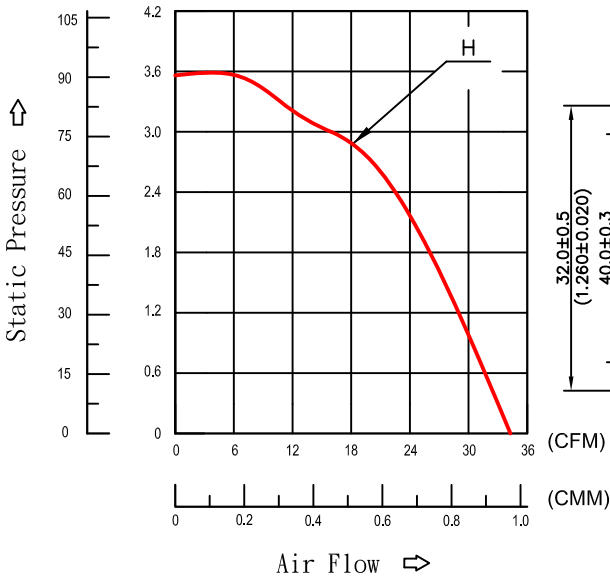
82 Gram (Ref.)

### MOUNTING PANEL CUTOUT

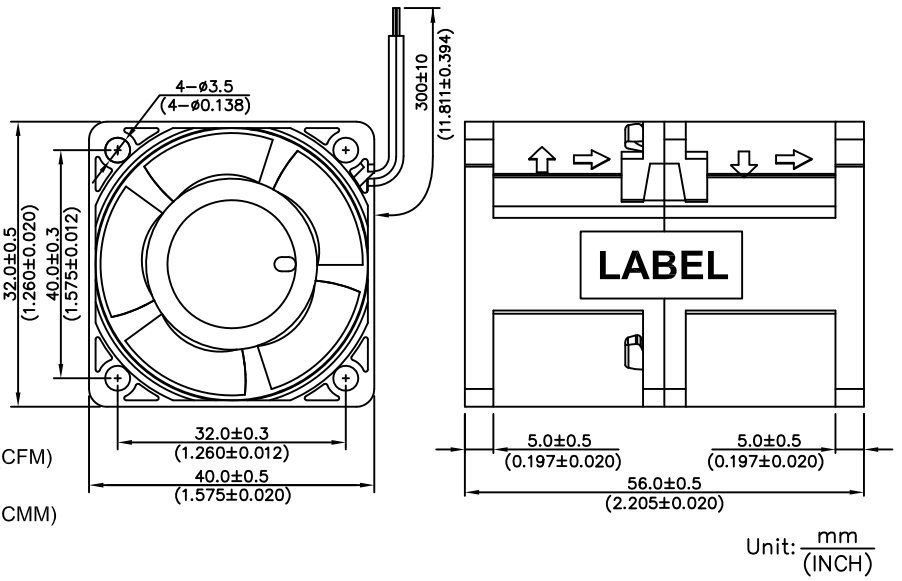


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIH040M12H	-FG/-RD	●					12	10.8-13.2	1.55	18.60	22000	0.98	34.71	95.50	3.76	69.2
		●									18700					

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIH 80 x 80 x 76mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

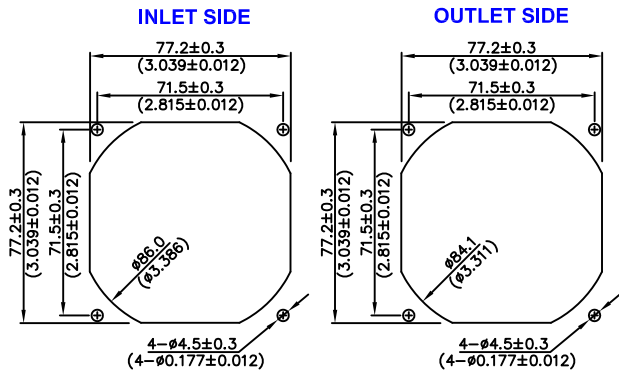
### Lead wires :

UL1061 AWG#22~#26 or Equivalent

### Weight :

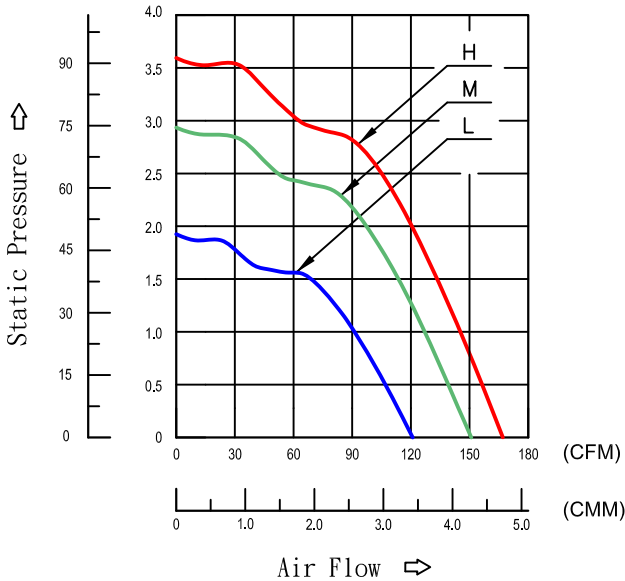
365 Gram (Ref.)

### MOUNTING PANEL CUTOUT

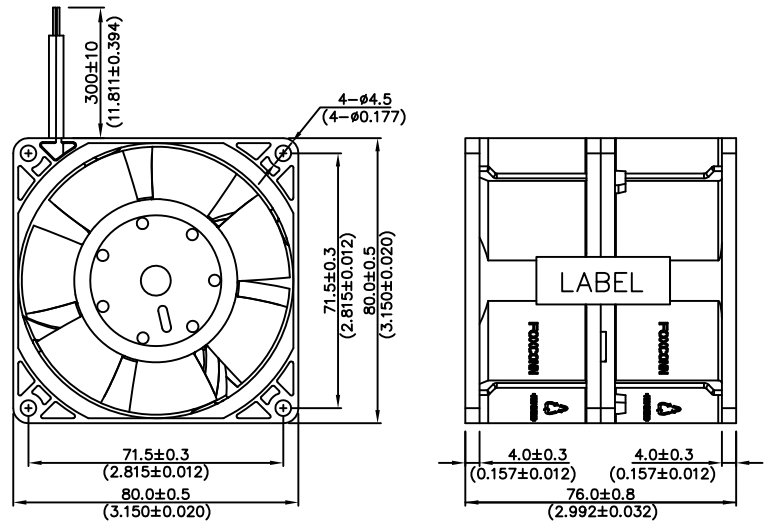


### P & Q CURVE (AT RATED VOLTAGE)

(mmH<sub>2</sub>O) (inchH<sub>2</sub>O)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIH080P12L	-FG/-RD	●					12	7.0-13.2	2.34	28.08	7500 6700	3.42	120.88	49.02	1.93	68.4
PIH080P12M	-FG/-RD	●	●				12	7.0-13.2	4.62	55.44	9200 8200	4.27	150.90	74.42	2.93	72.6
PIH080P12H	-FG/-RD	●					12	7.0-13.2	6.40	76.80	10200 9100	4.73	167.03	91.19	3.59	74.8

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

# PIH 80 x 80 x 80mm Series



### Material

Impeller : Plastic, UL 94V-0, Black  
 Frame : Plastic, UL 94V-0, Black

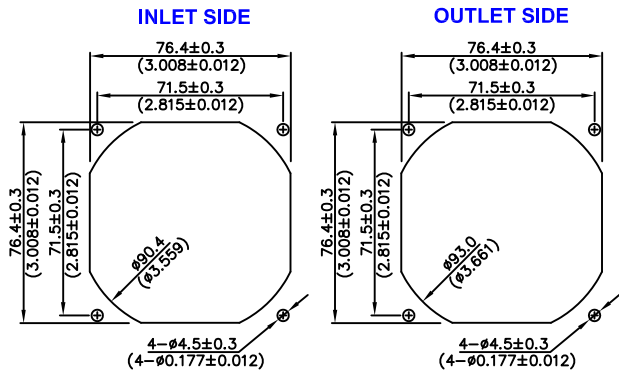
### Lead wires :

UL1061 AWG#22~#24 or Equivalent

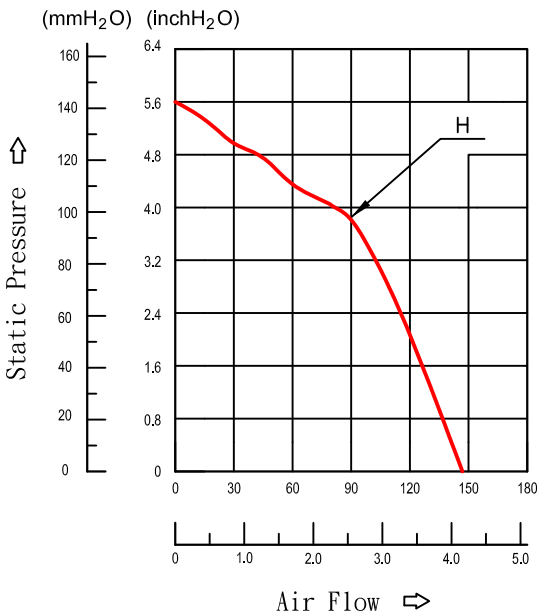
### Weight :

489 Gram (Ref.)

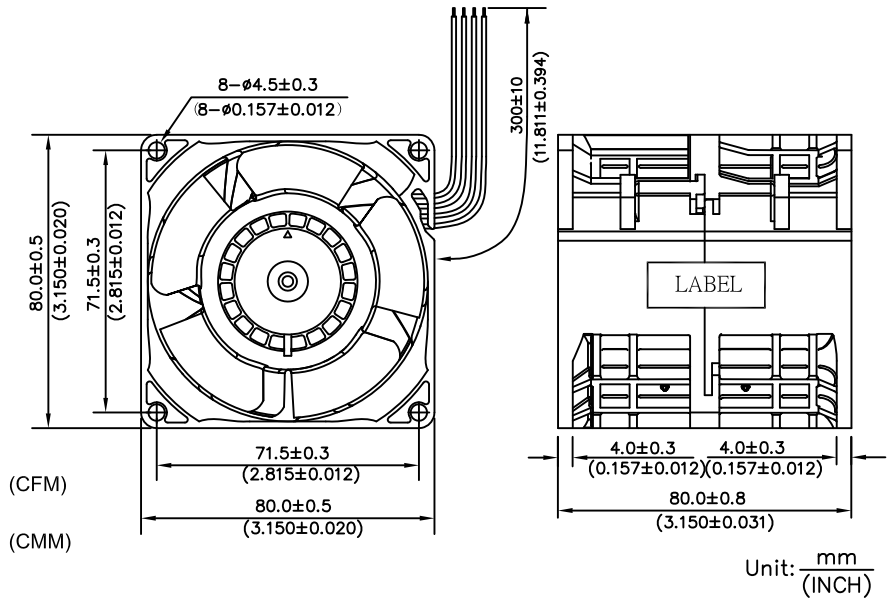
### MOUNTING PANEL CUTOUT



### P & Q CURVE (AT RATED VOLTAGE)



### DIMENSIONS DRAWING



Unit:  $\frac{\text{mm}}{\text{INCH}}$

MODEL		Bearing Type					Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	2B	FFB	FTB	BS	1S	VDC	VDC	Amp	Watt	R.P.M.	m <sup>3</sup> /min	CFM	mmH <sub>2</sub> O	IN H <sub>2</sub> O	dB-A
PIH080Q12H	-FG/-RD	●					12	10.8-13.2	6.20	74.4	12800	4.19	148.00	142.24	5.60	79.0
		●									11200					

Bearing Type :

**2B**(Two Bearing) ; **FFB**(Fox-Flow Bearing) ; **FTB**(Foxconn Technology Bearing) ; **BS**(One Ball One Sleeve) ; **1S**(Sleeve)

\* Function type is optional.

\* The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.

\* Noise is measured in anechoic chamber in free air, one meter from intake side.

\* All readings are typical values at rated voltage.

\* Specifications are subject to change without notice.

BRUSHLESS DC AXIAL FAN

Material: Plastic Impeller and Frame with UL 94V-0

Lead Wires: UL1007 / UL1061 AWG #22-28 or Equivalent; Red Wire Positive(+), Black Wire Negative(-)

Rotation Direction: CCW view from inlet face

Serial	SIZE (mm)	FAN Type	MODEL NO.	Output Signal			Bearing Type					Free Air Current A	Speed RPM	Voltage V	Air flow		Static Pressure		Noise dB-A	Page No.	
				FG	N/A	RD	2B	BS	FFB	FTB	1S				m3/min	CFM	mm H2O	IN H2O			
PVA	30x10	Axial	PVA030C05M	⊙	⊙							0.03	3200	5	0.028	0.98	0.61	0.024	16.0	20	
			PVA030C05H	⊙	⊙							0.06	6000	5	0.055	1.93	1.83	0.072	25.0		
			PVA030C05N	⊙	⊙							0.13	9000	5	0.085	2.99	3.73	0.147	34.0		
	30x15	Axial	PVA030E12M	⊙	⊙							0.07	7000	12	0.081	2.85	2.54	0.100	18.0	21	
			PVA030E12H	⊙	⊙							0.09	10000	12	0.123	4.35	5.08	0.200	27.0		
	40x20	Axial	PVA040F12L	⊙	⊙	⊙		⊙				0.06	4000	12	0.132	4.65	1.78	0.070	15.0	22	
			PVA040F12M	⊙	⊙	⊙	⊙					0.10	6000	12	0.204	7.20	3.81	0.150	23.2		
			PVA040F12H	⊙	⊙	⊙	⊙					0.15	8000	12	0.277	9.77	6.35	0.250	33.4		
			PVA040F24L	⊙	⊙	⊙	⊙					0.03	4000	24	0.132	4.65	1.78	0.070	15.0		
	45x15	Axial	PVA040F24M	⊙	⊙	⊙	⊙					0.05	6000	24	0.204	7.20	3.81	0.150	23.2	23	
			PVA040F24H	⊙	⊙	⊙	⊙					0.09	8000	24	0.277	9.77	6.35	0.250	33.4		
			PVA045E12L	⊙	⊙								0.06	4000	12	0.214	7.54	2.03	0.080		20.7
			PVA045E12M	⊙	⊙								0.10	6000	12	0.334	11.81	4.57	0.180		31.5
	50x15	Axial	PVA045E12H	⊙	⊙							0.20	8500	12	0.479	16.92	8.38	0.330	39.5	24	
			PVA050E12L	⊙	⊙							0.08	4300	12	0.321	11.34	2.87	0.113	24.2		
			PVA050E12M	⊙	⊙							0.11	5300	12	0.398	14.07	4.24	0.167	29.8		
	60x20	Axial	PVA050E12H	⊙	⊙							0.21	6500	12	0.489	17.28	6.22	0.245	35.8	25	
			PVA060F12N	⊙	⊙							0.08	3200	12	0.441	15.58	3.05	0.120	23.2		
			PVA060F12P	⊙	⊙							0.10	4000	12	0.573	20.23	5.08	0.200	29.4		
	60x25	Axial	PVA060F12Q	⊙	⊙							0.16	5000	12	0.733	25.89	7.92	0.312	36.6	26	
			PVA060G12P	⊙	⊙		⊙					0.08	3600	12	0.466	16.45	3.56	0.140	25.1		
			PVA060G12Q	⊙	⊙		⊙					0.09	4500	12	0.592	20.90	5.38	0.212	31.7		
			PVA060G12R	⊙	⊙		⊙					0.23	5600	12	0.733	25.87	8.08	0.318	37.9		
			PVA060G24P	⊙	⊙		⊙					0.04	3600	24	0.466	16.45	3.56	0.140	25.1		
	70x15	Axial	PVA060G24Q	⊙	⊙		⊙					0.06	4500	24	0.592	20.90	5.38	0.212	31.7	27	
			PVA060G24R	⊙	⊙		⊙					0.08	5600	24	0.733	25.87	8.08	0.318	37.9		
			PVA070E12P	⊙	⊙							0.07	3000	12	0.576	20.33	2.31	0.091	25.7		
	70x25	Axial	PVA070E12Q	⊙	⊙							0.17	4200	12	0.833	29.42	4.52	0.178	36.0	28	
			PVA070G12N	⊙	⊙							0.11	3500	12	0.820	28.96	4.49	0.177	31.7		
			PVA070G12P	⊙	⊙							0.18	4400	12	1.035	36.54	6.73	0.265	38.5		
	80x15	Axial	PVA070G12Q	⊙	⊙							0.34	5400	12	1.293	45.66	9.50	0.374	44.0	29	
			PVA080E12P	⊙	⊙	⊙						0.10	3200	12	0.868	30.64	3.12	0.123	33.4		
			PVA080E12Q	⊙	⊙	⊙						0.17	4000	12	1.082	38.20	4.60	0.181	39.2		
	80x20	Axial	PVA080E12R	⊙	⊙	⊙						0.36	5000	12	1.369	48.34	8.20	0.323	45.5	30	
			PVA080F12P	⊙	⊙							0.07	2400	12	0.677	23.91	2.03	0.080	23.2		
			PVA080F12Q	⊙	⊙							0.11	3200	12	0.917	32.39	3.84	0.151	31.6		
			PVA080F12R	⊙	⊙							0.24	4500	12	1.317	46.50	6.63	0.261	41.4		
	80x25	Axial	PVA080G12N	⊙	⊙	⊙						0.12	3000	12	1.160	40.98	4.34	0.171	32.4	31	
			PVA080G12P	⊙	⊙	⊙						0.20	3700	12	1.431	50.55	6.45	0.254	38.9		
			PVA080G12Q	⊙	⊙	⊙						0.34	4600	12	1.798	63.51	10.02	0.395	44.2		
			PVA080G24N	⊙	⊙	⊙						0.06	3000	24	1.160	40.98	4.34	0.171	32.4		
PVA080G24P			⊙	⊙	⊙						0.10	3700	24	1.431	50.55	6.45	0.254	38.9			
80x38	Axial	PVA080G24Q	⊙	⊙	⊙						0.16	4600	24	1.798	63.51	10.02	0.395	44.2	32		
		PVA080K12N	⊙	⊙							0.16	3200	12	1.258	44.43	5.99	0.236	35.2			
		PVA080K12P	⊙	⊙							0.28	4000	12	1.604	56.65	9.32	0.367	41.7			
92x25	Axial	PVA080K12Q	⊙	⊙							0.53	5000	12	2.024	71.47	13.72	0.540	47.3	33		
		PVA092G12Q	⊙	⊙	⊙						0.05	2100	12	1.042	36.79	2.29	0.090	25.6			
		PVA092G12R	⊙	⊙	⊙						0.10	2800	12	1.425	50.32	4.06	0.160	33.8			
		PVA092G12S	⊙	⊙	⊙						0.25	4000	12	2.062	72.83	7.72	0.304	43.5			
		PVA092G24Q	⊙	⊙	⊙						0.03	2100	24	1.042	36.79	2.29	0.090	25.6			
		PVA092G24R	⊙	⊙	⊙						0.06	2800	24	1.425	50.32	4.06	0.160	33.8			
92x32	Axial	PVA092G24S	⊙	⊙	⊙						0.14	4000	24	2.062	72.83	7.72	0.304	43.5	34		
		PVA092J12Q	⊙	⊙							0.09	2000	12	1.004	35.46	2.11	0.083	25.6			
		PVA092J12R	⊙	⊙							0.19	3000	12	1.538	54.32	4.52	0.178	37.1			
92x38	Axial	PVA092J12S	⊙	⊙							0.35	4000	12	2.072	73.17	7.62	0.300	45.4	35		
		PVA092K12Q	⊙	⊙							0.22	3000	12	1.795	63.39	5.05	0.199	34.2			
		PVA092K12R	⊙	⊙							0.38	3700	12	2.211	78.08	7.57	0.298	40.1			
120x25	Axial	PVA092K12S	⊙	⊙							0.65	4500	12	2.727	96.30	11.15	0.439	47.6	36		
		PVA120G12N	⊙	⊙							0.19	2100	12	2.227	78.63	3.30	0.130	35.0			
		PVA120G12P	⊙	⊙							0.31	2600	12	2.766	97.68	4.83	0.190	41.3			
120x38	Axial	PVA120G12Q	⊙	⊙							0.42	3000	12	3.246	114.64	6.60	0.260	45.0	37		
		PVA120K12Q	⊙	⊙							0.24	2600	12	2.998	105.86	7.09	0.279	43.1			
		PVA120K12R	⊙	⊙							0.49	3200	12	3.704	130.82	10.46	0.412	49.5			
		PVA120K24Q	⊙	⊙	⊙						0.16	2600	24	2.998	105.86	7.09	0.279	43.1			
50x05	Blower	PVA120K24R	⊙	⊙	⊙						0.32	3200	24	3.704	130.82	10.46	0.412	49.5	38		
		PVB050A05L	⊙								0.07	3100	5	0.038	1.34	3.56	0.140	26.2			
		PVB050A05M	⊙								0.12	3800	5	0.048	1.71	5.84	0.230	33.0			
		PVB050A05H	⊙								0.20	4800	5	0.063	2.22	9.65	0.380	40.3			
75x25	Blower	PVB070G12L	⊙								0.31	3100	12	0.558	19.70	19.56	0.770	38.0	39		
		PVB070G12M	⊙								0.52	3800	12	0.691	24.40	29.46	1.160	44.5			
		PVB070G12H	⊙								0.85	4700	12	0.861	30.40	45.47	1.790	49.0			
		PVB070G12N	⊙								1.32	5500	12	0.991	35.00	62.23	2.450	53.5			

\* Function type is optional.  
 \* The max. air flow and the speed are measured in free air; max. air pressure is measured at zero air flow.  
 \* Noise is measured in semi-anechoic chamber in free air, one meter from intake side.  
 \* All readings are typical values at rated voltage.  
 \* Specification are subject to change without notice.  
 \* The symbol □ 80x38mm means square frame with width 80mm and thickness is 38mm.  
 \* The symbol ○ 75x25mm means round frame with diameter 75mm and thickness is 25mm.

BRUSHLESS DC AXIAL FAN

Material: Plastic Impeller and Frame with UL 94V-0

Lead Wires: UL1007 / UL1061 AWG #22-28 or Equivalent; Red Wire Positive(+), Black Wire Negative(-)

Rotation Direction: CCW view from inlet face

Serial	SIZE (mm)	FAN Type	MODEL NO.	Output Signal			Bearing Type					Free Air Current A	Speed RPM	Voltage V	Air flow		Static Pressure		Noise dB-A	Page No.
				FG	N/A	RD	2B	BS	FFB	FTB	1S				m3/min	CFM	mm H2O	IN H2O		
PIA	40x28	Axial	PIA040H12L	○		○	○					0.10	8500	12	0.330	11.67	11.94	0.47	35.6	40
			PIA040H12M	○		○	○					0.16	10500	12	0.409	14.44	18.03	0.71	41.0	
			PIA040H12H	○		○	○					0.26	13000	12	0.528	18.63	27.43	1.08	46.0	
			PIA040H12N	○		○	○					0.33	15500	12	0.623	22.00	39.37	1.55	50.1	
			PIA040H12P	○		○	○					0.59	18000	12	0.746	26.33	51.82	2.04	53.8	
	60x38	Axial	PIA060K12L	○		○	○					1.35	23000	12	0.914	32.27	84.33	3.32	59.7	41
			PIA060K12M	○		○	○					0.34	8000	12	1.117	39.46	24.13	0.95	49.9	
			PIA060K12H	○		○	○					0.59	10000	12	1.421	50.18	37.34	1.47	55.0	
			PIA060K12N	○		○	○					1.28	13000	12	1.904	67.24	55.63	2.19	61.2	
			PIA060K12P	○		○	○					1.50	12500	12	1.628	57.50	62.74	2.47	58.5	
	70x25	Axial	PIA070G12L	○		○	○					2.00	14500	12	1.917	67.70	81.79	3.22	62.4	42
			PIA070G12M	○		○	○					3.00	17100	12	2.265	80.00	109.22	4.30	66.0	
			PIA070G12H	○		○	○					0.19	4000	12	1.027	36.26	6.35	0.25	39.7	
	80x38	Axial	PIA080K12N	○		○	○					0.37	5000	12	1.322	46.69	9.65	0.38	45.8	43
			PIA080K12P	○		○	○					0.64	6300	12	1.674	59.10	15.49	0.61	51.5	
			PIA080K12Q	○		○	○					0.43	6200	12	1.732	61.15	21.34	0.84	49.0	
			PIA080K12R	○		○	○					0.70	7700	12	2.147	75.83	34.54	1.36	56.4	
	92x38	Axial	PIA092K12M	○		○	○					1.27	9500	12	2.683	94.76	48.77	1.92	60.8	44
			PIA092K12N	○		○	○					2.12	11500	12	3.310	116.88	72.90	2.87	65.3	
			PIA092K12P	○		○	○					3.60	13800	12	3.795	134.03	104.14	4.10	68.9	
PIA092K12Q			○		○	○					0.89	6000	12	3.068	108.34	19.05	0.75	55.0		
PIA092K12R			○		○	○					1.63	7500	12	3.873	136.77	29.46	1.16	61.0		
120x38	Axial	PIA120K12M	○		○	○					3.08	9200	12	4.810	169.85	42.16	1.66	65.5	45	
		PIA120K12N	○		○	○					1.10	7600	12	3.328	117.52	36.58	1.44	55.0		
		PIA120K12P	○		○	○					2.04	9400	12	4.112	145.20	53.59	2.11	61.0		
		PIA120K12Q	○		○	○					4.13	11600	12	5.113	180.57	75.95	2.99	65.5		
PIH	40x56	Axial	PIH040M12L	○		○	○					0.48	11000	12	0.61	21.38	26.92	1.06	54.1	48
			PIH040M12M	○		○	○					0.84	13500	12	0.75	26.55	43.18	1.70	59.6	
			PIH040M12H	○		○	○					1.32	16000	12	0.90	31.64	62.23	2.45	63.9	
			PIH040M12N	○		○	○					1.55	22000	12	0.98	34.71	95.50	3.76	69.2	
			PIH040M12P	○		○	○					2.34	18700	12	0.98	34.71	95.50	3.76	69.2	
	80x76	Axial	PIH080P12L	○		○	○					2.34	7500	12	3.42	120.88	49.02	1.93	68.4	50
			PIH080P12M	○		○	○					4.62	9200	12	4.27	150.90	74.42	2.93	72.6	
			PIH080P12N	○		○	○					6.40	8200	12	4.73	167.03	91.19	3.59	74.8	
			PIH080P12H	○		○	○					6.40	10200	12	4.73	167.03	91.19	3.59	74.8	
	80x80	Axial	PIH080Q12H	○		○	○					6.20	12800	12	4.19	148.00	142.24	5.60	79.0	51
			PIH080Q12L	○		○	○					6.20	11200	12	4.19	148.00	142.24	5.60	79.0	

\* Function type is optional.  
 \* The max. air flow and the speed are measured in free air; max. air pressure is measured at zero air flow.  
 \* Noise is measured in semi-anechoic chamber in free air, one meter from intake side.  
 \* All readings are typical values at rated voltage.  
 \* Specification are subject to change without notice.  
 \* The symbol □ 80x38mm means square frame with width 80mm and thickness is 38mm  
 \* The symbol ○ 75x25mm means round frame with diameter 75mm and thickness is 25mm.







## Business Philosophy :

Through the most efficient "Total Cost Advantages" to make comfort of electronic products usage an attainable reality for all mankind;

Through the proprietary one-stop shopping vertical integrated eCMMS model to revolutionize the conventional inefficient electronics outsourcing model;

Through the devotion to greater social harmony and higher ethical standards to achieve a win-win model for all stakeholders including shareholders, employees, community and management.

聯繫我們：

1. 全億大科技(佛山)有限公司

地址: 廣東省佛山市城西工業區華寶北路35號

電話: 0757-88021668 ext:17858 傳真: 0757-88021668-17881

Champ Tech Optical (Foshan) Corp., Ltd

Addr: NO.35, Huabao North Road, Chengxi Industrial Zone, Foshan, Guangdong, China

Tel: 0757-88021668 ext:17858 Fax: 0757-88021668-17881

Mail: vincent.ji.liu@foxconn.com

2. 南寧富寧精密電子有限公司

地址: 廣西南寧市江南區石柱岭一路二號

電話: 0771-4971688 ext:21060 傳真: 0771-4971688-21044

Funing Precision Electronics Ltd

Addr: No.2, 1st ShiZhuLing road, JiangNan area, NanNing city, GuangXi, China

Tel: 0771-4971688 ext:21060 Fax: 0771-4971688-21044

E-mail: jinni.ym.huang@foxconn.com

3. 鴻準精密工業股份有限公司

地址: 台灣省新北市土城區自由街2號

電話: +886-2-22683466 ext 6752 傳真: 02-6620-6492

FOXCONN TECHNOLOGY CO., LTD

Addr: No.2, Ziyou St., Tucheng Dist., New Taipei City 236, Taiwan (R.O.C.)

電話: +886-2-22683466 ext 6752 傳真: 02-6620-6492

E-mail: tamgauto@foxconn.com

4. FTC Technology Inc

Addr: 2525 Brockton Dr., Suite 300

Austin, TX 78758

Tel: 512-670-2638 Ext 273

Email: ray.wang@foxconn.com

鴻準精密工業股份有限公司

全億大科技有限公司

南寧富寧精密電子有限公司