



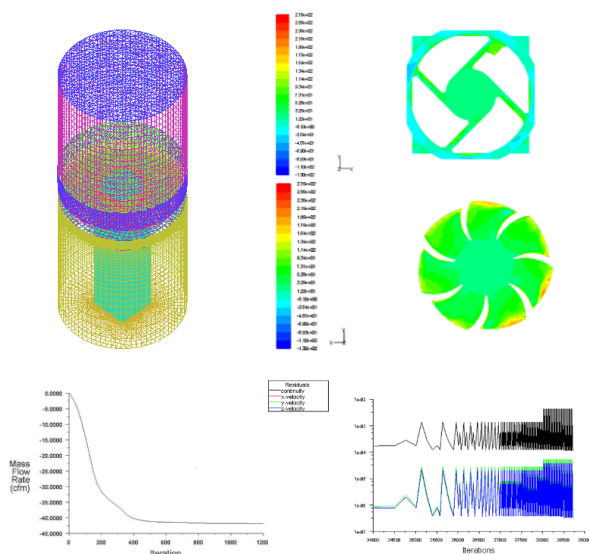
Research and Development

RSWN's products are full of innovation.

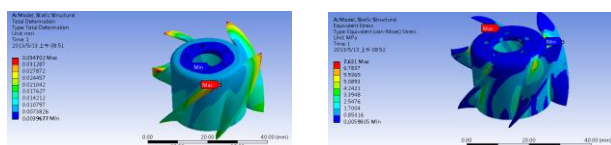
Integrate engineering expertise with sophisticated Computational Aided Engineering (CAE) platform, hard tooling and test equipment together enable RSWN to develop high P&Q performance, low acoustic noise level and cost effective products. The

advanced software can simulate the fan P&Q curve, structure strength, acoustic noise level and complete system design.

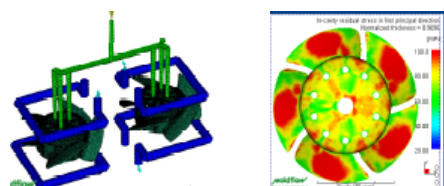
1. P&Q and acoustic noise Simulation



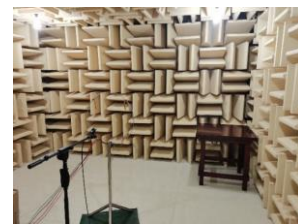
2. Strength simulation



3. Mold flow

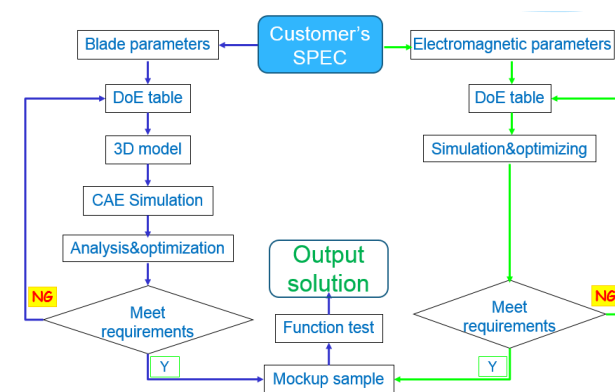


The in-house lab can provide the component and system level test, such as performance, structure, reliability and acoustic noise. The lab equipment include wind tunnel, anechoic chamber, heat&humidity chamber, high temperature chamber and Cubic Measurement Machine (CMM).



Development Process and DFM

RSWN drives straight product development process based on DoE (Design of Experiment) and SMD (System Methodology Design). We can monitor the schedule of the product development and can achieve DFM (Design for Manufacture) to meet the customer's requirements.



DoE Platform

Comparison between simulation and test									
Factor	A	B	C	Noise (dBA)		Deviation	Ratio		
Run#	Blade angle of hub	Blade angle of tip	Skewed-swept angle of blade	Simulation	Test	(Based on test)	(Based on test)		
1	44	30	-20	47.2	52.2	-5.0	-9.59%		
2	44	33	0	46.2	47.9	-1.7	-3.55%		
3	44	36	20	46.6	47.2	-0.6	-1.27%		
4	47	30	0	48.0	46.5	+1.5	+3.21%		
5	47	33	20	46.3	46.5	-0.2	-0.43%		
6	47	36	-20	52.0	54.0	-2.0	-3.70%		
7	50	30	20	46.8	45.5	+1.3	+2.84%		
8	50	33	-20	49.7	52.7	-3.0	-5.69%		
9	50	36	0	46.3	49.2	-2.9	-5.89%		

Note: Test distance 1m

Regression table									
Factor	Name	Coeff	P (2 Tail)	Tol	Active	Coeff	P (2 Tail)	Tol	Active
Const		0.34267	0.0001			47.744	0.0001		
A	Blade angle of hub	0.000167	0.9170	1	X	0.01067	0.9347	1	X
B	Blade angle of tip	-0.00233	0.2407	1	X	1.033	0.0202	1	X
C	Skewed-swept angle of blade	-0.00017	0.9108	1	X	-3.283	0.0075	1	X
AA		-0.00250	0.4148	1	X	0.11067	0.7442	1	X
BB		0.00000	0.5453	1	X	0.06687	0.8505	1	X
CC		0.00750	0.0022	1	X	1.817	0.0262	1	X
R ²		0.9707				0.9950			
Adj R ²		0.9829				0.9801			
Std Error		0.0035				0.4410			
F		11.8516				66.4239			
Sig F		0.0013				0.0149			

Obviously influence the thermal and noise level

Optimized parameters

Factor	Name	Low	High	Expectation
A	Blade angle of hub	44	50	44
B	Blade angle of tip	30	36	32.47
C	Skewed-swept angle of blade	-20	20	15.58

Quality Assurance System

RSWN ensures the design, services and manufacturing process quality via the well-functioned QAS in every aspect. Our system is certified by ISO9001, ISO14001, RoHS and etc. Especially, we can monitor the RoHS status in-house.



Statistical Process Control

RSWN deploys extensive SPC tools insupplier, incoming and manufacturing quality controls. During the product development phase, the CTQ (Critical to Quality) parameters are identified. The stability and capability of these parameters are monitored using SPC tools.

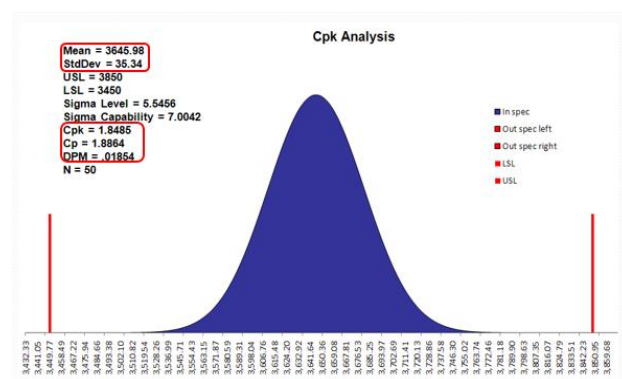
RSWN can use SPC tools to reduce the balance of impeller when we produce the impeller product

Correlation Matrix	Concentricity of Blade	Perpendicularity of Hub	Flatness of Hub	ID of Rotor	Concentricity of Rotor	Perpendicularity of Rotor	OD of Rotor	Concentricity of Blade	Length of Magnet	Height of Magnet	Width of Magnet	Residual Balance
ID of Case	0.51235633	0.21762291	0.310312	0.74865	0.15309784	0.14255383	0.91626	0.16217522	-0.00193	0.16542	0.10326	0.10326
Roundness of Case I	-0.05380947	-0.18377811	-0.381969	-0.0148	-0.03502984	-0.168807812	-0.20081	-0.08812349	0.200809	0.9607	0.3622	-0.01091
Concentricity of Case	-0.12261032	-0.014225788	-0.252261	0.31483	-0.18871847	-0.128119687	-0.29708	-0.16380552	-0.0134	-0.09807	0.26303	0.01706
Perpendicularity	-0.1431172	-0.022195874	-0.128403	-0.2013	-0.10263308	0.167852231	-0.01158	0.018914646	0.16372	0.8807	-0.1991	0.15939
ID of Case	0.05784076	-0.009150061	-0.185978	-0.0506	0.02917662	0.221048849	0.041883	0.036197299	-0.07324	0.01482	0.15416	-0.04002
Concentricity of Case	-0.21465396	-0.1118847	-0.207501	-0.3186	-0.15220567	-0.079340728	-0.01674	-0.12662657	0.122807	0.15886	0.25149	-0.15608
Max. OD of Case	0.17580742	0.092436878	0.141775	0.33077	0.127402625	0.1458856	0.146457	0.180127474	-0.12342	0.03948	0.13413	0.13441
Height of Case	0.0263354	0.157729377	-0.051805	0.15486	-0.00814273	0.06387253	-0.16244	0.042589832	-0.14841	0.07986	0.03419	-0.04327
ID of Case Axis	0.11643731	0.206858419	0.386282	0.80632	0.097625055	0.070007688	-0.14617	0.088873916	0.013133	-0.02889	0.16787	0.00693
ID of Hub	0.84771484	0.518844527	0.589346	0.01287	0.828132336	0.122733382	0.620372	0.791848401	-0.48743	-0.38484	-0.1247	0.55298
Perpendicularity of Hub	0.59624867	0.723291313	0.585396	0.05437	0.877776838	0.343508809	0.446206	0.863191207	-0.44346	-0.39296	-0.1593	0.58831
OD of Hub	0.37832472	0.184780958	0.452175	-0.0681	0.404893725	-0.022822778	0.487111	0.386585712	-0.42623	-0.22616	-0.0221	0.15489
Roundness of Blade	0.6322791	0.364007894	0.324720	0.03485	0.638270578	0.200158091	0.758656	0.605370688	-0.60674	-0.13884	-0.2556	0.48883
Concentricity of Blade	0.473386823	-0.42642805	0.376077	-0.1086	0.68605414	-0.17608096	-0.45803	-0.62628784	0.512575	0.20232	0.00188	-0.48576
Perpendicularity of Shaft	1	0.519888	0.13262	0.88062088	0.278051321	0.514789	0.88732295	-0.42079	-0.21638	-0.1235	0.49264	0.02416
Flatness of Hub	1	0.24504	0.19913	0.578633095	0.083972148	0.448827	0.637788843	-0.14548	-0.14587	-0.1189	0.24116	0.02163
ID of Rotor	1	0.07765	0.538615377	-0.08846197	0.75315	0.478155075	-0.25787	0.36865	-0.2888	0.21163	0.02163	0.02163
Concentricity of Rotor	1	0.130298967	0.134428629	0.134428629	-0.01878	0.111647044	-0.07639	0.02831	0.23058	0.11233	0.11233	0.11233
Perpendicularity of Rotor	1	0.304424874	1	0.304424874	0.250387	0.382889975	0.88835	-0.07622	0.00869	0.28745	0.28745	0.28745
OD of Rotor	1	0.464747083	1	0.464747083	-0.37827	-0.20819	-0.2625	0.48563	1	0.1076	0.07586	-0.15909
Length of Magnet	1	0.1076	1	0.1076	-0.3344	-0.22013	-0.0771	0.48162	1	0.1076	0.07586	-0.15909
Height of Magnet	1	0.1076	1	0.1076	-0.3344	-0.22013	-0.0771	0.48162	1	0.1076	0.07586	-0.15909
Width of Magnet	1	0.1076	1	0.1076	-0.3344	-0.22013	-0.0771	0.48162	1	0.1076	0.07586	-0.15909
Residual Balance	1	0.1076	1	0.1076	-0.3344	-0.22013	-0.0771	0.48162	1	0.1076	0.07586	-0.15909

Six Sigma

RSWN has been driving lean manufacturing, six sigma management and design for six sigma (DFSS). We are always trying to reduce the variation of critical parameters in the manufacturing process control, rather than just screening out the defects by inspection.

Matrix of flowrate, total pressure, noise and thermal									
	Flowrate through the upper section of H.S	R=20	R=25	R=30	R=35	Difference of total pressure of out columnar and inner columnar section	Total pressure per unit length	Noise test	Thermal
Flowrate through the upper section of H.S	1.0	0.4247	0.4064	0.4653	-0.3871	-0.4748	-0.4748	-0.4970	-0.7014
R=20		1.0	0.9803	0.7844	-0.2416	-0.5345	-0.5345	-0.7793	-0.6670
R=25			1.0	0.8488	-0.2025	-0.4940	-0.4940	-0.7872	-0.7181
R=30				1.0	-0.5245	-0.7110	-0.7110	-0.8043	-0.7297
R=35					1.0	0.9493	0.9493	0.4930	0.1950
Difference of total pressure of out columnar and inner columnar section						1.0	1.0	0.6819	0.3869
Total pressure per unit length							1.0	0.6819	0.3869
Noise test								1.0	0.8318
Thermal									1.0



MSA ANOVA Method Results

Source	Variance	Standard Deviation	% Contribution
Total Measurement (Gage)	41.1573599	6.415400215	7.38%
Repeatability	37.0945869	6.090532562	6.65%
Reproducibility	4.06277303	2.015632166	0.73%
Operator	4.06277303	2.015632166	0.73%
Oper * Part Interaction			
Product (Part-to-Part)	516.770012	22.732576	92.62%
Total	557.927372	23.62048627	100.00%

USL	
LSL	
Precision to Tolerance Ratio	
Precision to Total Ratio	0.27160322
Resolution	5.0

Acceptable

RSWN offers a wide range of options to enhance the functionality of standard products in order to fulfil specialized requirements for different applications. Our experienced engineers are ready to discuss and assist you to find the best solution for your application.

1. Input Voltage

Recommended input voltage range is specified for each fan model in this catalogue. Fan electronics can be customized should your application require the fan to operate under a wider input voltage range.

2. Fan Speed Control

Fan speed can be fully controlled by system or Self-adjusted according to certain characteristic input.

2.1 Input voltage

This is the simplest form for 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 at fan's start-up.

2.2 Control interfaces

Voltage and PWM signals are the most common type of connections 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.

2.3 Temperature control

For acoustic orientated applications, it may be ideal to have a fan that has self-adjusting speed function according to temperature measurement from an onboard NTC thermistor or an external signal. This allows the fans to run at the lowest speed setting according to the local cooling demand and results owner acoustic noise level and power consumption during system operation.

3. Fan Signal Output

3.1 Rotation Detector Signal-alarm Signal

This is the simple "Go/No-Go" fan signal output to alert the system if the fan is not functioning.

3.2 "Tacho" Signal

If constant monitoring of fan speed is required, built in sensor can be requested to output electronic signal for system use.

4. Environmental Protection

A large number of our fans have been shipped to work in extreme operating environments that included dusty condition, high temperature, high humidity and corrosive environment etc.

Salt fog test in accordance to a few international standards are used to evaluate the corrosion resistance capability. For dust and water protection, fans are tested to different levels of the International Protection Rating (IP Code) as required. The highest protection class currently on offer is IP56.

5. Performance Measurement

5.1 P&Q Measurement

Fan aerodynamic performance is tested in one of our in-house wind tunnel which is capable of measuring air flow 300CFM. The test facility and analysis used the industry standard AMCA 210-2007. Test fans are installed at the upstream side of the wind tunnel with free air inlet and outlet. The P&Q curves shown in this catalogue were measured at nominal input voltage.

5.2 Acoustic Noise Measurement

Acoustic noise measurement are taken in an anechoic chamber in accordance to ISO7779, 3744 and 3745. For the sound pressure level presented in this catalogue, microphone is positioned one meter from fan inlet at free-air delivery.

6. Part Number

RSWN part number for ordering.

1 Signal

RD-Rotation detector signal output

FG-Fan speed "Tacho" signal output

6.2 Bear Type

Bearing system available for selection.

B-Two Ball Bearings

F-Long Life Sleeve Bearing

T-One Ball and One Sleeve Bearing

6.3 Rated Voltage [Unit:V]

This is the nominal input voltage used to measure the P&Q performance, acoustic noise and power consumption data provided in this catalogue. Fans can be operated outside this rated voltage.

6.4 Operating Voltage Range [Unit:V]

The recommended operating input voltage range.

6.5 Rated Current [Unit:A]

Fan electric current at rated voltage and free-air deliver.

6.6 Rated Input Power [Unit:W]

Fan power consumption at rated voltage and free-air delivery.

6.7 Speed [Unit:RPM]

Nominal fan speed measured at rated voltage and free-air delivery.

6.8 Maximum Air Flow [Unit:CMM/CFM]

Air flow volume measured at free air delivery (zero air pressure).

6.9 Maximum Air Pressure [Unit:Pa/mmAq]

Fan air pressure measured at zero air flow delivery.

6.10 Acoustic Noise [Unit:dB(A)]

A-weighted sound pressure level measure on meter from fan inlet at rated voltage and free-air delivery in an anechoic chamber.

TYPE CODE AND GLOSSARY

STANDARD

FM	D	060	20	B	12	S	-	001
I	II	III	IV	V	VI	VII	VIII	

I

FAN CLASSIFICATION

D: Axial Fan
 B: Blower
 C: Cross Fan
 M: Diagonal Fan
 F: Turbo Fan
 E: EC Fan (AC to DC)

V

INPUT VOLTAGE

03 : 3.3V 05 :5V 12:12V
 24 : 24V 48 :48V 60:60V
 A0 : 115V B0 : 230V C0 : 380V
 D0 : Dual Voltage

II

DIMENSION

020:20mm 030:30mm
 040:40mm 060:60mm
 080:80mm 120:120mm
 150:150mm 200:200mm
 etc...

VI

ROTATING SPEED

S: Super High Speed
 U : Extra High Speed
 H :High Speed
 M:Medium Speed
 L:Low Speed

III

THICKNESS

05:5mm 25:25mm
 10:10mm 28:28mm
 32:32mm 56:56mm
 etc...

VII

CONTROL TYPE

— : General Control C: No Autorestart
 D: Digital Control P: PWM Control
 W: Sensor Control V: Voltage Control

IV

BEARING TYPE

B : Two Ball Bearing
 F: Long Life Sleeve Bearing
 T : One Ball and One Sleeve Bearing

VIII

SERIES NUMBER

001,...,999

Catalog Guidance

Product nominal data
Typical fan characteristics at free-air condition except maximum air pressure which is measured at zero flow delivery.

Product classification
The section indicates the power input (DC or AC), basic fan design (axial or blower), fan dimensions and product family.

Product description
General product information such as construction material, lead wire rating, number of impeller blades, impeller rotating direction and product weight.



DC AXIAL FANS

40x40x10 mm

- * Material: Impeller&Frame:Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction:CCW view from inlet
- * Weight: 10g(0.35OZ)



Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.	Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C		
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD04010_12L	-FG/RD	B F	12	7.0 to 13.2	0.03	0.36	3600	0.121	4.27	1.27	0.050	21.4	70000
FMD04010_12M	-FG/RD	B F	12	7.0 to 13.2	0.04	0.48	4000	0.136	4.80	1.53	0.060	21.7	70000
FMD04010_12H	-FG/RD	B F	12	7.0 to 13.2	0.05	0.60	5000	0.164	5.79	2.37	0.093	23.0	70000
FMD04010_12U	-FG/RD	B F	12	7.0 to 13.2	0.07	0.84	6500	0.229	8.09	3.95	0.156	28.4	70000
FMD04010_12S	-FG/RD	B F	12	7.0 to 13.2	0.15	1.80	8500	0.291	10.28	6.64	0.261	35.2	70000
FMD04010_05S	-FG/RD	B F	5	3.5 to 5.5	0.36	1.80	8500	0.291	10.28	6.64	0.261	35.2	70000

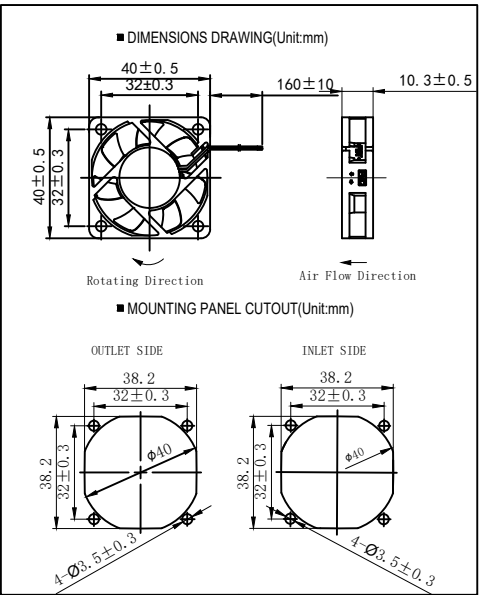
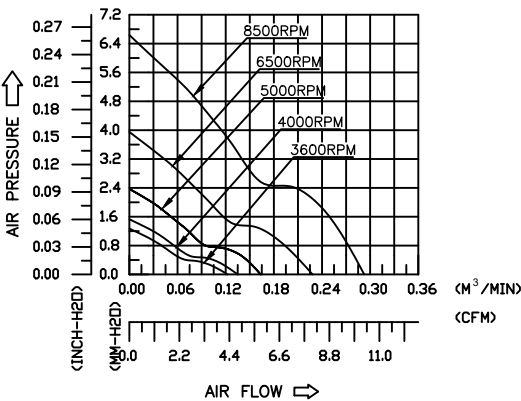
Notes
The notes illustrate the performance test conditions.

Performance curves
The chart illustrates the fan performance at rated voltage. Details of the test set-up is discussed in Section "Options for Customisation".

Available Options
The icons indicate the optional features available for the product. Options may not be available to all voltage and fan speed.

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

P & Q CURVE (AT RATED VOLTAGE):



Fan Product Matrix

Model	Dimession(mm)	Operating voltage(V)				Bearing type			Frame type		Output signal		Circuit controller		IP& Salt spray	Page
		5	12	24	48	Ball bearings	FDB	Sleeve bearing	Flange	Rib	FG	RD	Closed loop	Open loop		
FMC04010	37x37x10.5	V	V			V	V	V		V	V	V		V		9
FMD04010	40x40x10	V	V			V	V	V		V	V	V		V		10
FMC04015	40x40x15	V	V	V		V				V	V	V		V	V	11
FMD04020	40x40x20	V	V	V		V		V		V	V	V		V	V	12
FMF04028	40x40x28	V	V	V		V				V	V	V	V	V	V	13
FMD05015	50x50x15	V	V	V		V		V		V	V	V		V	V	14
FMD06015	60x60x15.5		V	V		V		V		V	V	V		V	V	15
FMD06025	60x60x25.5		V	V		V		V	V		V	V		V	V	16
FMF06038	60x60x38		V		V	V			V		V	V	V	V	V	17
FMD07015	70x70x15.5		V	V		V		V		V	V	V		V	V	18
FMD08015	80x80x15		V	V		V		V		V	V	V		V	V	19
FMD08025	80x80x25		V	V		V		V	V		V	V		V	V	20
FMF08038	80x80x38		V		V	V			V		V		V	V	V	21
FMD09225	92x92x25		V	V		V		V	V		V	V		V	V	22
FMD09238	92x92x38		V	V		V		V	V		V	V		V	V	23
FMD12025	120x120x25.4		V	V		V		V	V		V	V		V	V	24
FMD12028	120x120x28		V	V				V		V	V	V		V	V	25
FMD12038	120x120x38		V	V				V		V	V	V		V	V	26
FMF12038	120x120x38		V	V	V	V				V	V	V		V		27
FMB05508	55x55x8	V					V	V			V			V		28
FMB06010	62x57x9	V	V					V			V			V		29
FMB06010	65x60x10	V	V					V			V			V		30
FMB07505	75x75x5.5	V					V	V			V			V		31
FMB07012	70x65x12	V	V					V			V	V		V		32
FMB07525	73x73x25.7		V			V					V			V	V	33
FMB08007	80x78x7.6	V					V	V			V			V		34
FMB08017	80x80x17.5		V			V		V			V			V		35
FMC10025	100x100x25		V			V					V			V	V	36
FMB10025	107x101x25		V			V					V			V	V	37



DC AXIAL FANS



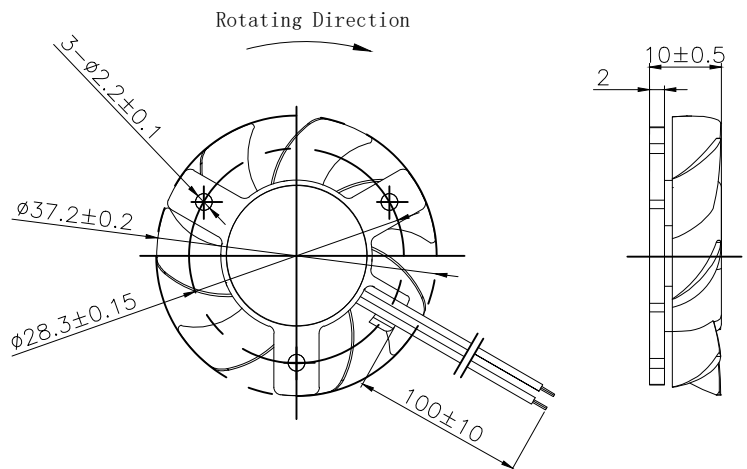
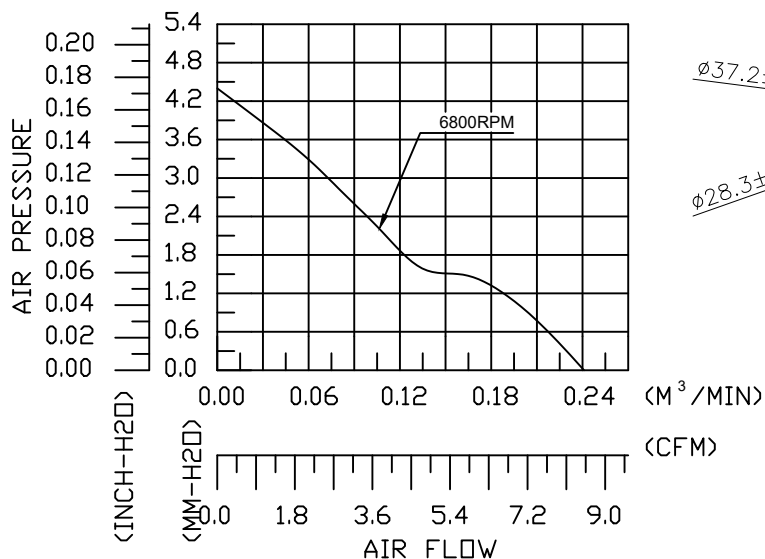
Ø37.2x10 mm 5V,12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 10g(0.35OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMC04010_05H	-FG/RD	B F	5	3.5 to 5.5	0.24	1.2	6800	0.242	8.55	4.39	0.173	28.0	70000
FMC04010_12H	-FG/RD	B F	12	7.0 to 13.2	0.1	1.2	6800	0.242	8.55	4.39	0.173	28.0	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):





DC AXIAL FANS



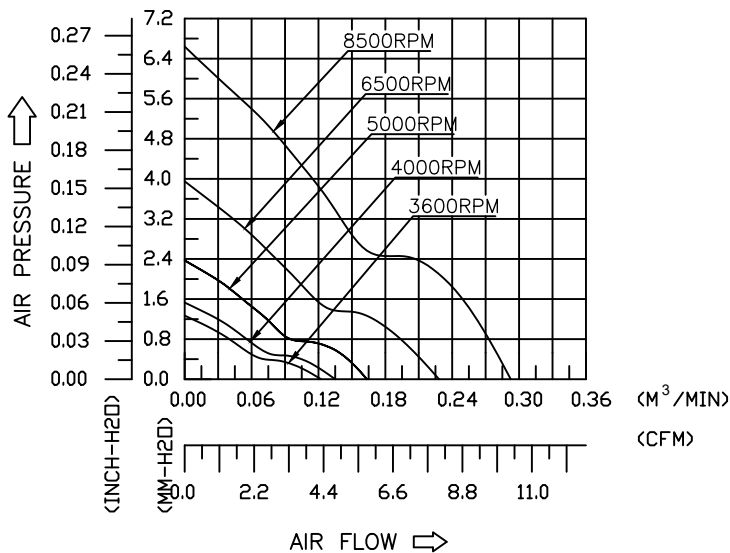
40x40x10 mm 5V,12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 10g(0.35OZ)

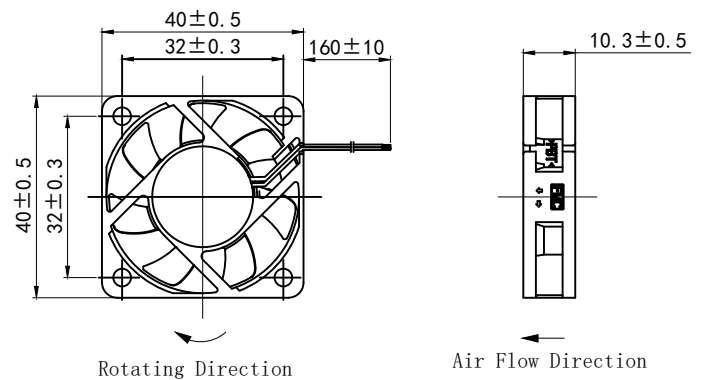
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	Hours
FMD04010_12L	-FG/RD	B F	12	7.0 to 13.2	0.03	0.36	3600	0.121	4.27	1.27	0.050	70000
FMD04010_12M	-FG/RD	B F	12	7.0 to 13.2	0.04	0.48	4000	0.136	4.80	1.53	0.060	70000
FMD04010_12H	-FG/RD	B F	12	7.0 to 13.2	0.05	0.60	5000	0.164	5.79	2.37	0.093	70000
FMD04010_12U	-FG/RD	B F	12	7.0 to 13.2	0.07	0.84	6500	0.229	8.09	3.95	0.156	70000
FMD04010_12S	-FG/RD	B F	12	7.0 to 13.2	0.15	1.80	8500	0.291	10.28	6.64	0.261	70000
FMD04010_05S	-FG/RD	B F	5	3.5 to 5.5	0.36	1.80	8500	0.291	10.28	6.64	0.261	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

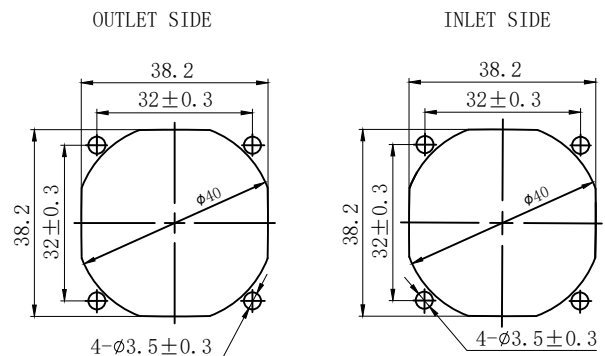
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



40x40x15 mm

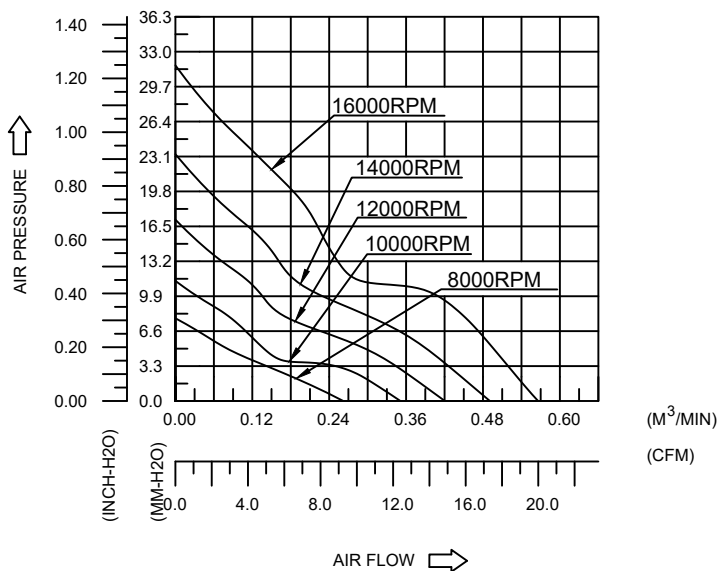
12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 25g(0.88OZ)

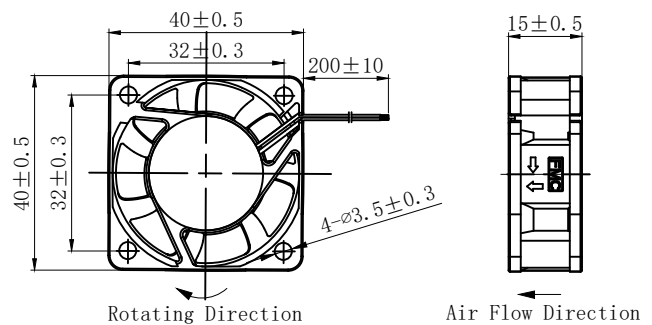
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD04015_12L	-FG/RD	B F	12	7.0 to 13.2	0.15	1.80	8000	0.262	9.25	7.82	0.308	31.5	70000
FMD04015_12M	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	10000	0.351	12.40	11.35	0.447	38.0	70000
FMD04015_12H	-FG/RD	B	12	7.0 to 13.2	0.30	3.60	12000	0.421	14.85	17.13	0.674	43.5	70000
FMD04015_12U	-FG/RD	B	12	7.0 to 13.2	0.40	4.80	14000	0.495	17.49	24.28	0.956	47.8	70000
FMD04015_12S	-FG/RD	B	12	7.0 to 13.2	0.60	7.20	16000	0.566	19.99	31.71	1.248	51.1	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

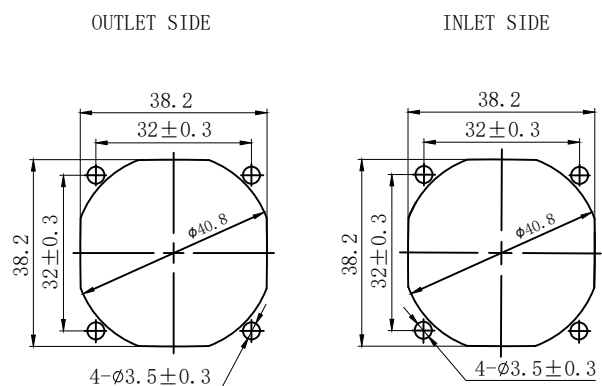
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



40x40x20 mm

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#26 or Equivalent
- * Impeller: 5 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 28g(0.98OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD04020_12L	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	10000	0.323	11.44	11.74	0.462	35.8	70000
FMD04020_12M	-FG/RD	B	12	7.0 to 13.2	0.30	3.60	12000	0.385	13.62	16.59	0.653	42.0	70000
FMD04020_12H	-FG/RD	B	12	7.0 to 13.2	0.45	5.40	14000	0.465	16.43	22.92	0.902	47.0	70000
FMD04020_12U	-FG/RD	B	12	7.0 to 13.2	0.60	7.20	16000	0.529	18.69	29.74	1.170	49.5	70000
FMD04020_12S	-FG/RD	B	12	7.0 to 13.2	1.0	12.0	18000	0.611	21.60	37.58	1.479	52.5	70000

* Function type is optional.

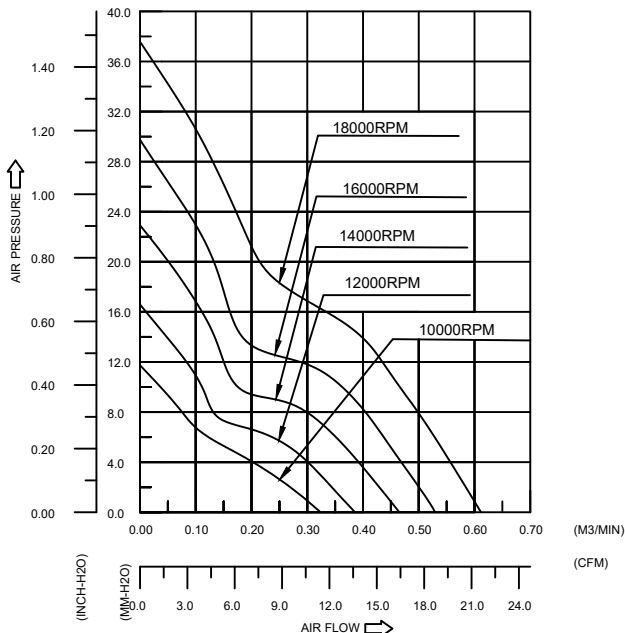
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

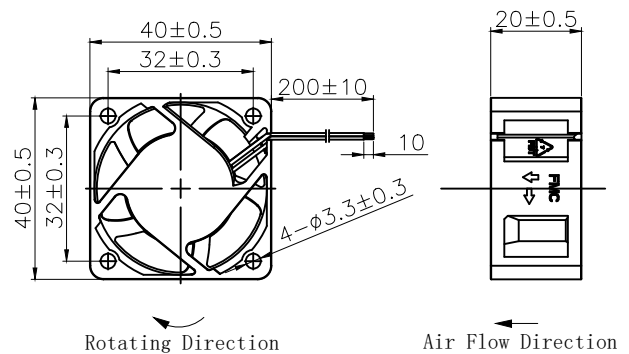
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

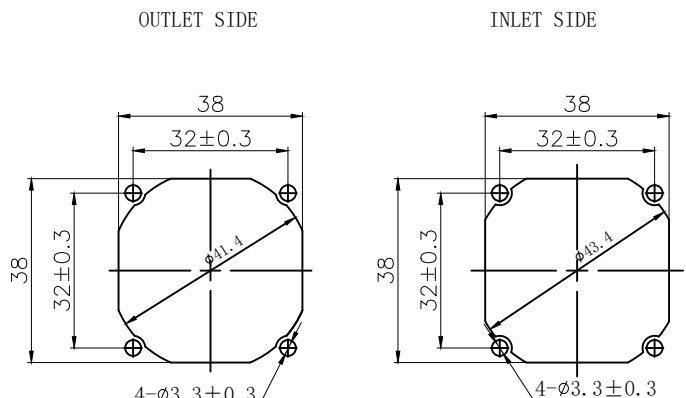
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS

40x40x28 mm

12V



- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 5 Blades inlet, 7 Blades outlet
- * Rotational direction: CCW view from inlet
- * Weight: 48g(1.69OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMF04028_12L	-FG/RD	B	12	7.0 to 13.2	1.10	13.20	20000	0.715	25.26	63.64	2.506	56.8	70000
FMF04028_12M	-FG/RD	B	12	7.0 to 13.2	1.30	15.60	22000	0.786	27.74	64.48	2.539	61.2	70000
FMF04028_12H	-FG/RD	B	12	7.0 to 13.2	1.80	21.60	25000	0.894	31.58	82.18	3.235	64.2	70000
FMF04028_12U	-FG/RD	B	12	7.0 to 13.2	2.30	27.60	27000	0.948	33.48	92.67	3.648	65.2	70000
FMF04028_12S	-FG/RD	B	12	7.0 to 13.2	3.70	44.40	30000	1.043	36.82	110.83	4.363	69.4	70000

* Function type is optional.

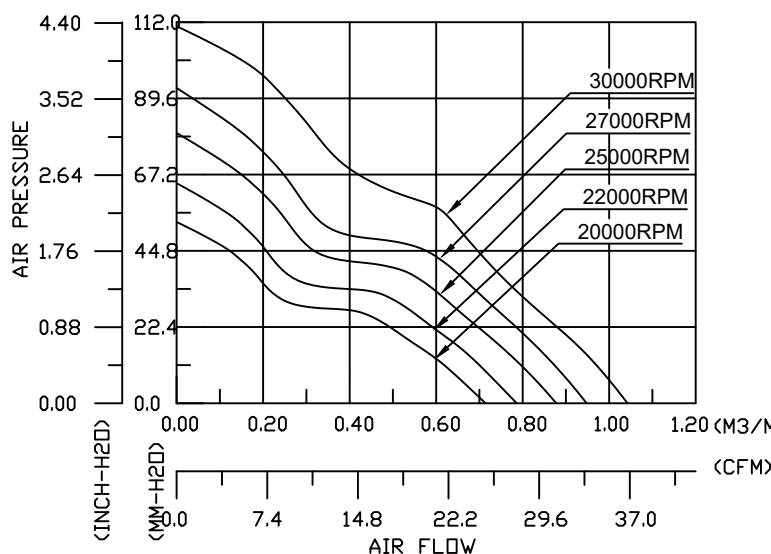
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

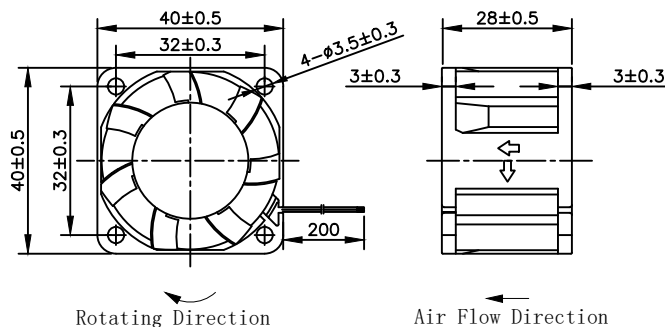
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

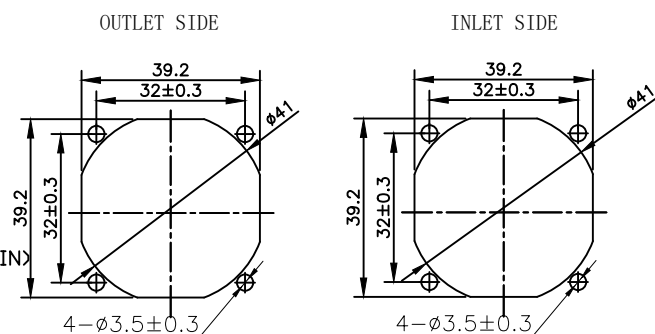
■ P & Q CURVE (AT RATED VOLTAGE):

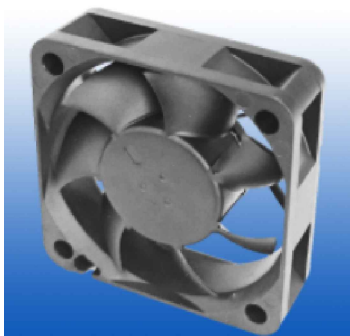


■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)





DC AXIAL FANS



50x50x15 mm

12V, 24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 30g(1.06OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD05015_12L	-FG/RD	B F	12	7.0 to 13.2	0.12	1.44	4200	0.327	11.55	2.90	0.114	26.5	70000
FMD05015_12M	-FG/RD	B F	12	7.0 to 13.2	0.15	1.80	4800	0.377	13.31	3.67	0.144	28.5	70000
FMD05015_12H	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	5400	0.425	15.00	4.54	0.179	31.5	70000
FMD05015_12U	-FG/RD	B	12	7.0 to 13.2	0.40	4.80	6000	0.485	17.12	5.80	0.228	35.5	70000
FMD05015_24L	-FG/RD	B F	24	10.0 to 26.4	0.08	1.92	4200	0.327	11.55	2.90	0.114	26.5	70000
FMD05015_24M	-FG/RD	B F	24	10.0 to 26.4	0.10	2.40	4800	0.377	13.31	3.67	0.144	28.5	70000
FMD05015_24H	-FG/RD	B F	24	10.0 to 26.4	0.16	3.84	5400	0.425	15.00	4.54	0.179	31.5	70000

* Function type is optional.

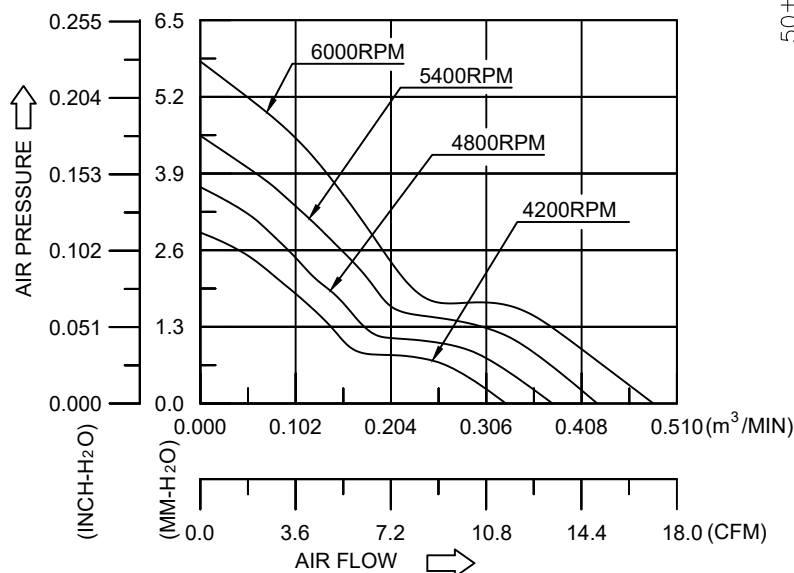
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

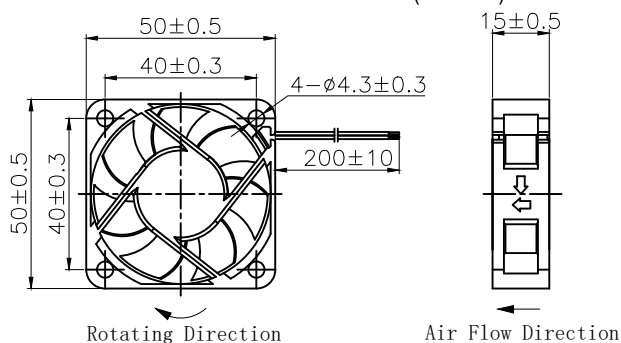
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

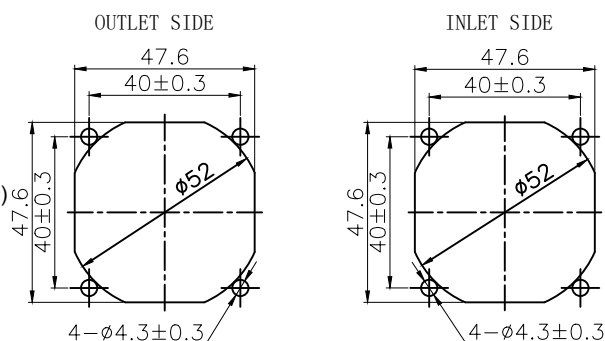
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS

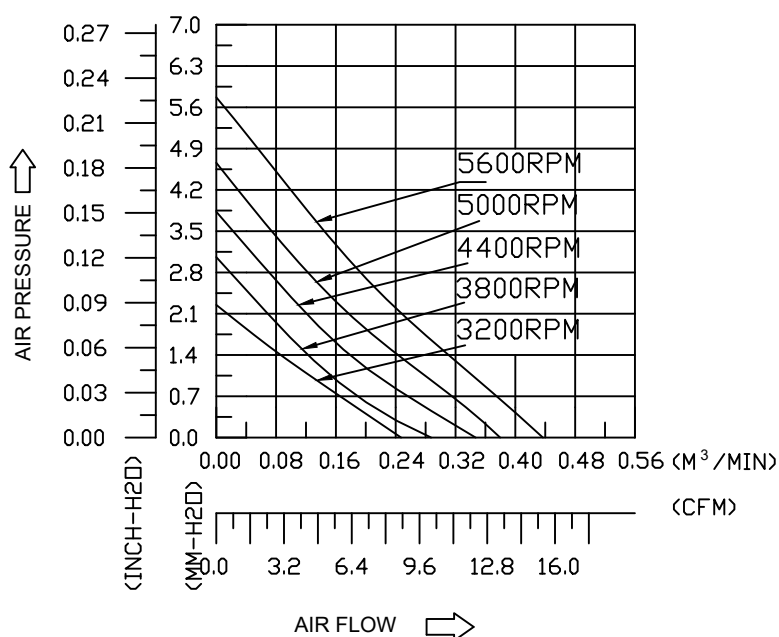


60x60x15 mm 12V

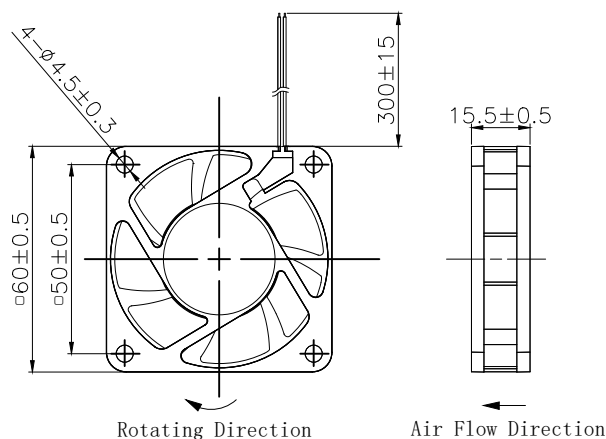
- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 41g(1.45OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range		Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours	
FMD06015_12L	-FG/RD	B F	12	7.0 to 13.2	0.08	0.96	3200	0.247	8.73	2.25	0.089	24.5	70000	
FMD06015_12M	-FG/RD	B F	12	7.0 to 13.2	0.12	1.44	3800	0.289	10.20	3.06	0.120	26.9	70000	
FMD06015_12H	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	4400	0.347	12.25	3.83	0.151	31.1	70000	
FMD06015_12U	-FG/RD	B F	12	7.0 to 13.2	0.30	3.60	5000	0.380	13.41	4.66	0.183	33.7	70000	
FMD06015_12S	-FG/RD	B F	12	7.0 to 13.2	0.40	4.80	5600	0.437	15.43	5.77	0.227	36.9	70000	

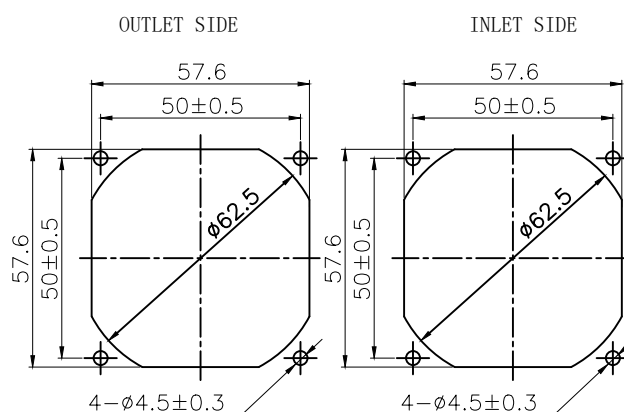
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS

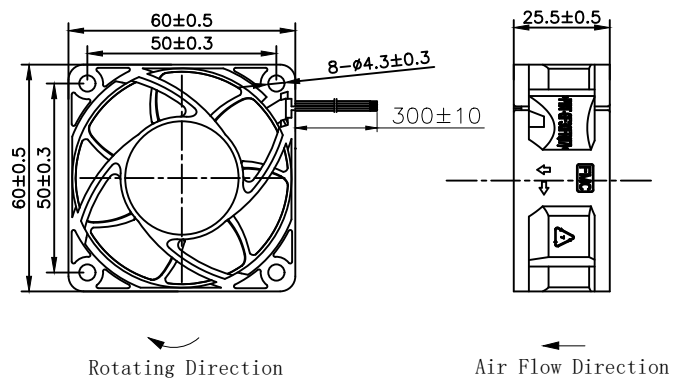
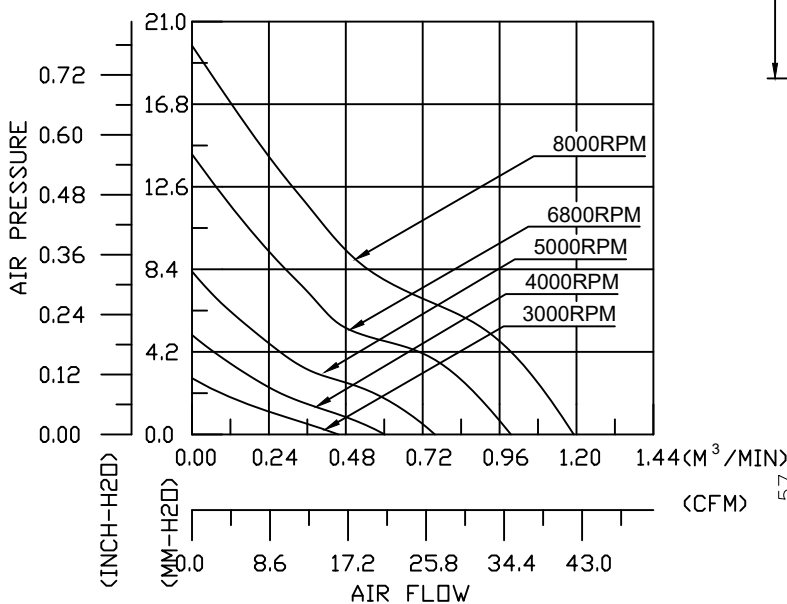


60x60x25 mm

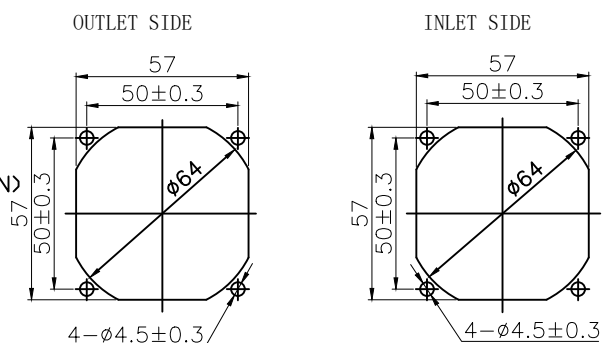
12V, 24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 50g(1.77OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD06025_12L	-FG/RD	B F	12	7.0 to 13.2	0.15	1.80	3000	0.462	16.13	2.86	0.113	23.6	70000
FMD06025_12M	-FG/RD	B F	12	7.0 to 13.2	0.22	2.64	4000	0.601	21.24	5.06	0.199	29	70000
FMD06025_12H	-FG/RD	B F	12	7.0 to 13.2	0.30	3.60	5000	0.758	26.77	8.29	0.326	34.5	70000
FMD06025_12U	-FG/RD	B F	12	7.0 to 13.2	0.52	6.24	6800	0.996	35.16	14.25	0.561	42.5	70000
FMD06025_12S	-FG/RD	B	12	7.0 to 13.2	0.67	8.04	8000	1.192	42.08	19.78	0.779	49.2	70000
FMD06025_24U	-FG/RD	B F	24	14.0 to 26.4	0.26	6.24	6800	0.996	35.16	14.25	0.561	42.5	70000
FMD06025_24S	-FG/RD	B	24	14.0 to 26.4	0.34	8.16	8000	1.192	42.08	19.78	0.779	49.2	70000



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



60x60x38 mm

12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 5 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 115g(4.060Z)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMF06038_12L	-FG/RD	B	12	7.0 to 13.2	0.90	10.8	10000	1.172	41.38	30.71	1.209	54.6	70000
FMF06038_12M	-FG/RD	B	12	7.0 to 13.2	1.60	19.2	12000	1.367	48.26	41.83	1.647	59.1	70000
FMF06038_12H	-FG/RD	B	12	7.0 to 13.2	2.10	25.2	13500	1.546	54.59	51.23	2.017	62.2	70000
FMF06038_12U	-FG/RD	B	12	7.0 to 13.2	2.85	34.2	15000	1.793	63.32	68.05	2.679	64.3	70000
FMF06038_12S	-FG/RD	B	12	7.0 to 13.2	4.00	48.0	17500	2.142	75.64	89.52	3.524	68.5	70000

* Function type is optional.

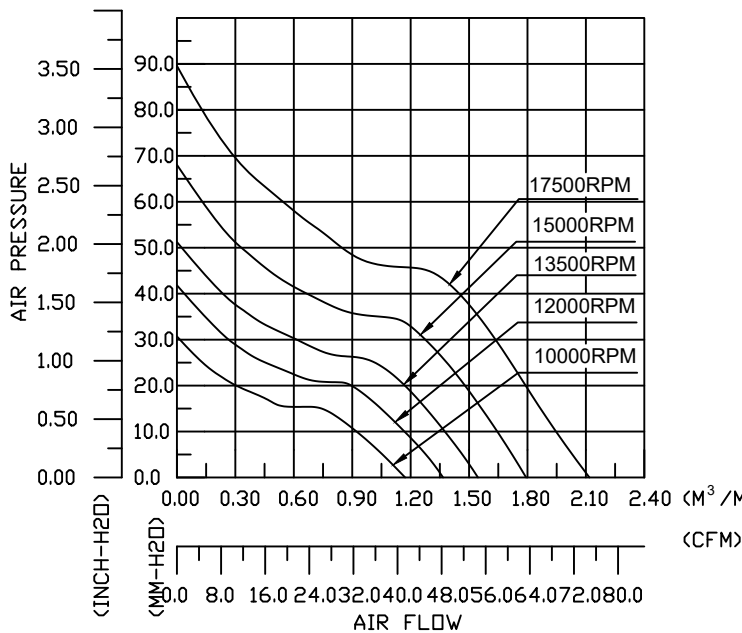
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

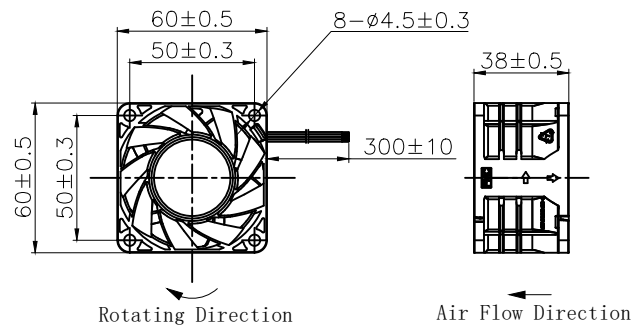
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

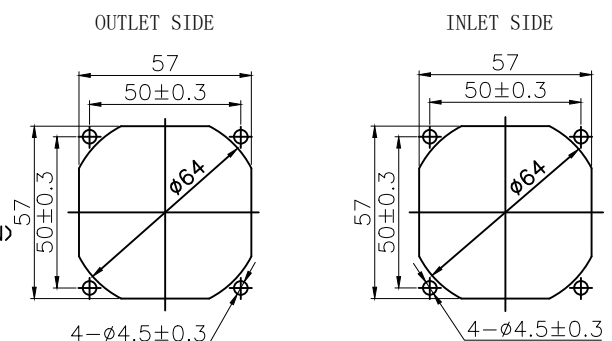
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)





DC AXIAL FANS



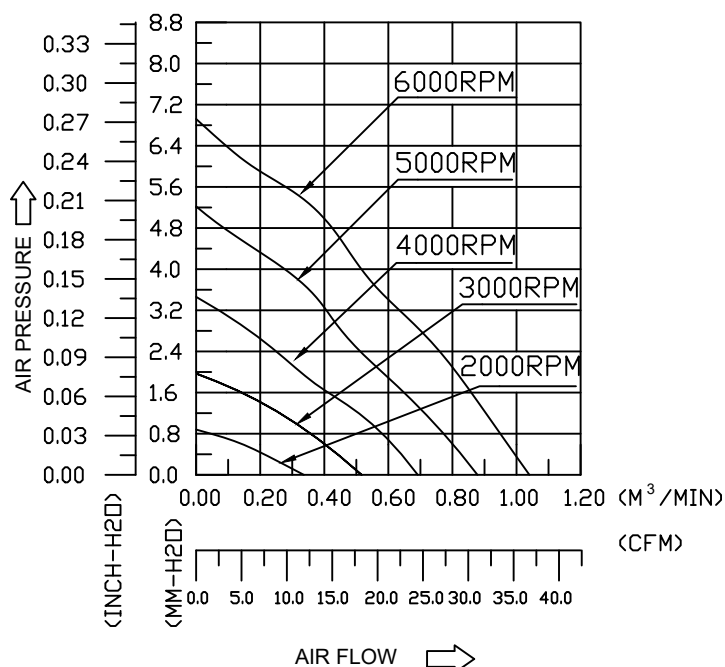
70x70x15 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 9 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 46g(1.62OZ)

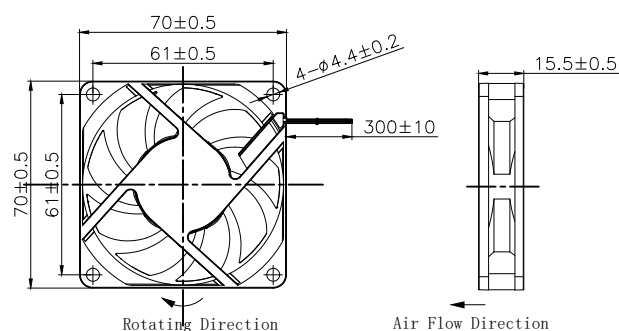
Model		Bearing Type	Rated Voltage	Operating Voltage Range		Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours	
FMD07015_12L	-FG/RD	B F	12	7.0 to 13.2	0.08	0.96	2000	0.336	11.87	0.88	0.035	22.2	70000	
FMD07015_12M	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	3000	0.516	18.24	1.97	0.078	28.4	70000	
FMD07015_12H	-FG/RD	B F	12	7.0 to 13.2	0.30	3.60	4000	0.692	24.43	3.46	0.136	35.3	70000	
FMD07015_12U	-FG/RD	B F	12	7.0 to 13.2	0.45	5.40	5000	0.878	31.01	5.22	0.206	41.6	70000	
FMD07015_12S	-FG/RD	B F	12	7.0 to 13.2	0.80	9.60	6000	1.040	36.73	6.92	0.272	46.5	70000	

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

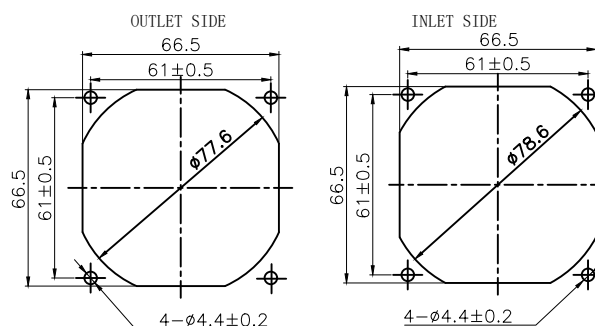
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)





DC AXIAL FANS



80x80x15 mm

12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#28 or Equivalent
- * Impeller: 9 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 55g(1.94OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD08015_12L	-FG/RD	B F	12	7.0 to 13.2	0.10	1.20	2000	0.570	20.12	1.97	0.078	23.7	70000
FMD08015_12M	-FG/RD	B F	12	7.0 to 13.2	0.19	2.28	3000	0.833	29.42	3.54	0.139	29.5	70000
FMD08015_12H	-FG/RD	B F	12	7.0 to 13.2	0.33	3.96	4000	1.095	38.66	5.87	0.231	37.5	70000
FMD08015_12U	-FG/RD	B F	12	7.0 to 13.2	0.52	6.24	5000	1.407	49.69	8.81	0.347	43.4	70000
FMD08015_12S	-FG/RD	B	12	7.0 to 13.2	0.9	10.8	6000	1.673	59.08	11.67	0.459	47.3	70000

* Function type is optional.

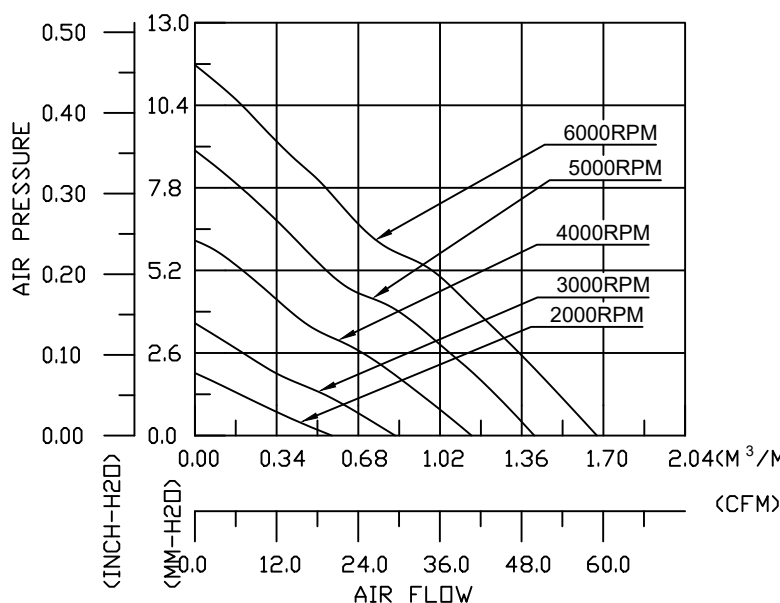
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

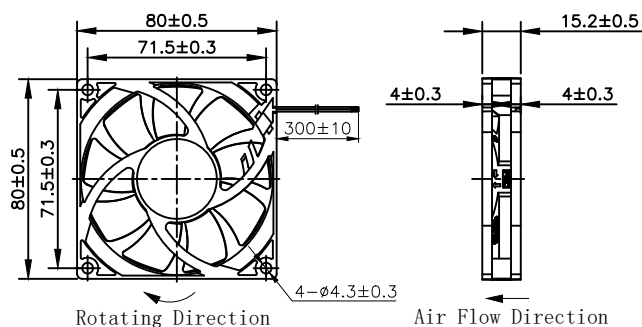
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

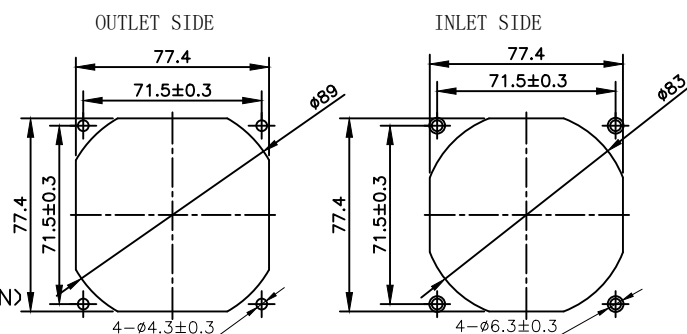
■ P & Q CURVE (AT RATED VOLTAGE):

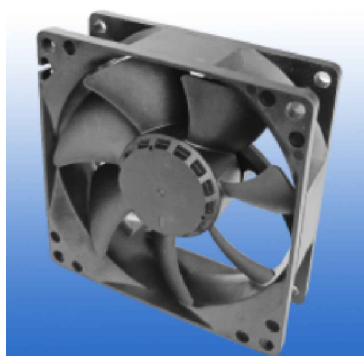


■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)





DC AXIAL FANS



80x80x25 mm

12V,24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 70g(2.47OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMD08025_12L	-FG/RD	B F	12	7.0 to 13.2	0.10	1.20	2500	0.877	30.96	2.74	0.108	25.0	70000
FMD08025_12M	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	3000	1.060	37.43	3.73	0.147	30.1	70000
FMD08025_12H	-FG/RD	B F	12	7.0 to 13.2	0.30	3.60	3600	1.283	45.30	5.25	0.207	36.1	70000
FMD08025_12U	-FG/RD	B F	12	7.0 to 13.2	0.65	7.80	4500	1.606	56.70	8.03	0.316	43.7	70000
FMD08025_12S	-FG/RD	B F	12	7.0 to 13.2	0.90	10.80	6000	2.172	76.70	13.67	0.538	50.0	70000
FMD08025_24U	-FG/RD	B F	24	14.0 to 26.4	0.35	8.40	4500	1.606	56.70	8.03	0.316	43.7	70000
FMD08025_24S	-FG/RD	B F	24	14.0 to 26.4	0.45	10.80	6000	2.172	76.70	13.67	0.538	50.0	70000

* Function type is optional.

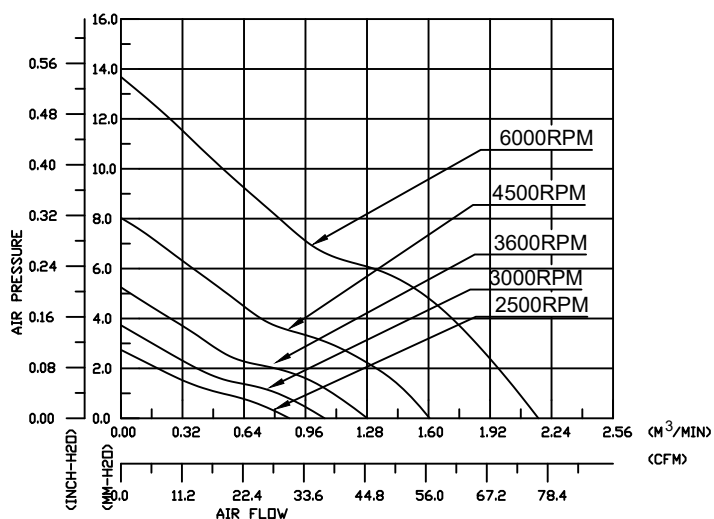
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

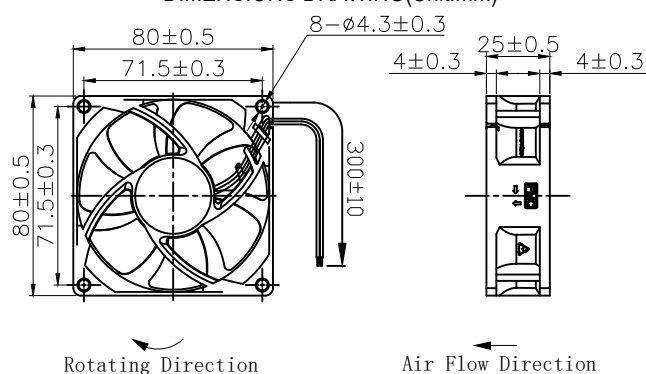
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

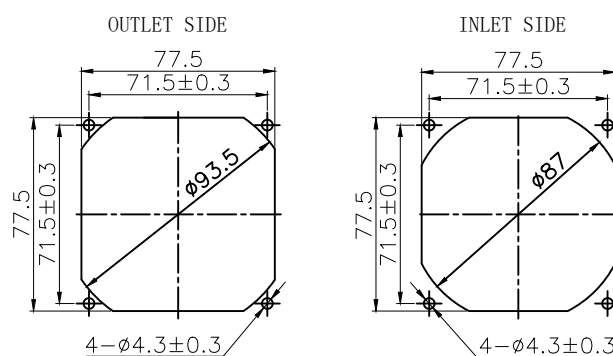
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



80x80x38 mm

12V



- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#22 or Equivalent
- * Impeller: 5 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 115g(4.06OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.	Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C		
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMF08038_12S	-FG/RD	B	12	7.0 to 13.2	6.0	72.0	15000	3.885	137.2	103.5	4.075	71.6	70000

* Function type is optional.

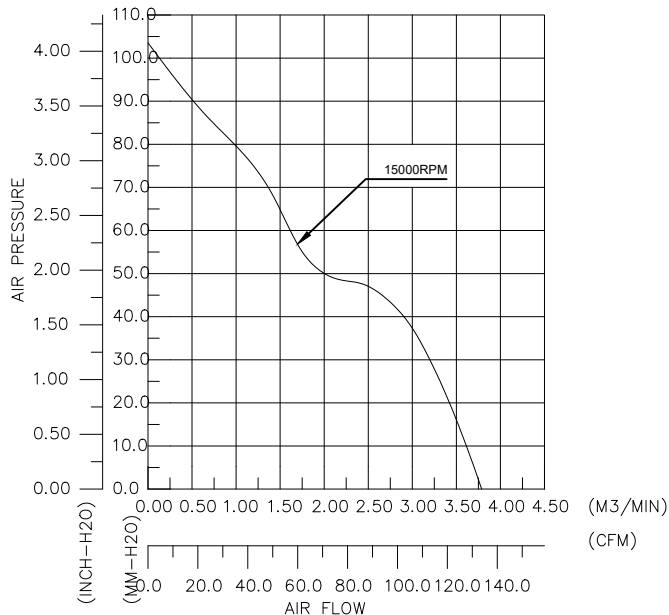
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

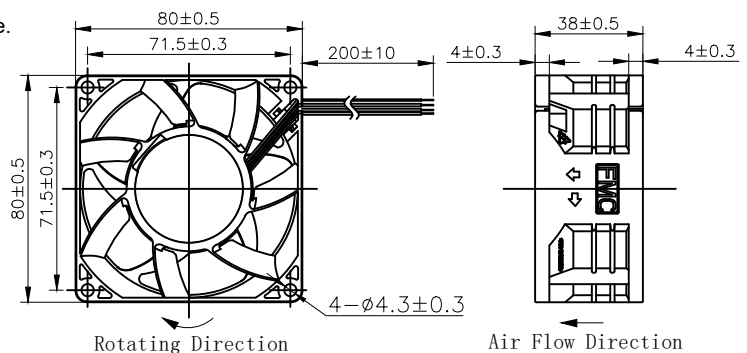
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

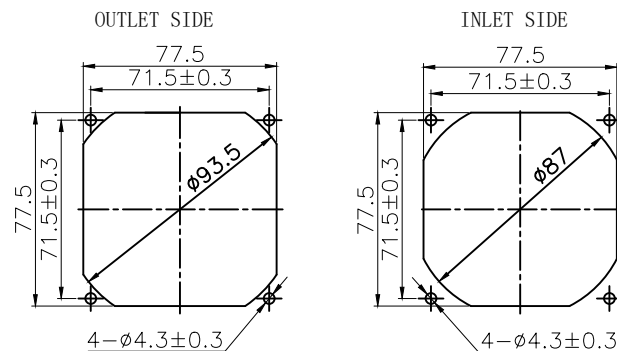
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



92x92x25 mm

12V,24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 90g(3.18OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMD09225_12L	-FG/RD	B F	12	7.0 to 13.2	0.22	2.64	2500	1.367	48.28	3.31	0.130	31.7	70000
FMD09225_12M	-FG/RD	B F	12	7.0 to 13.2	0.30	3.60	3000	1.703	60.13	4.68	0.184	36.8	70000
FMD09225_12H	-FG/RD	B F	12	7.0 to 13.2	0.45	5.40	3800	2.163	76.39	7.49	0.295	44.6	70000
FMD09225_12U	-FG/RD	B	12	7.0 to 13.2	0.82	9.84	4500	2.578	91.05	9.85	0.388	49.5	70000
FMD09225_12S	-FG/RD	B	12	7.0 to 13.2	1.05	12.60	5000	2.810	99.24	11.68	0.460	52.4	70000
FMD09225_24U	-FG/RD	B	24	14.0 to 26.4	0.45	10.80	4500	2.578	91.05	9.85	0.388	49.5	70000
FMD09225_24S	-FG/RD	B	24	14.0 to 26.4	0.52	12.72	5000	2.810	99.24	11.68	0.460	52.4	70000

* Function type is optional.

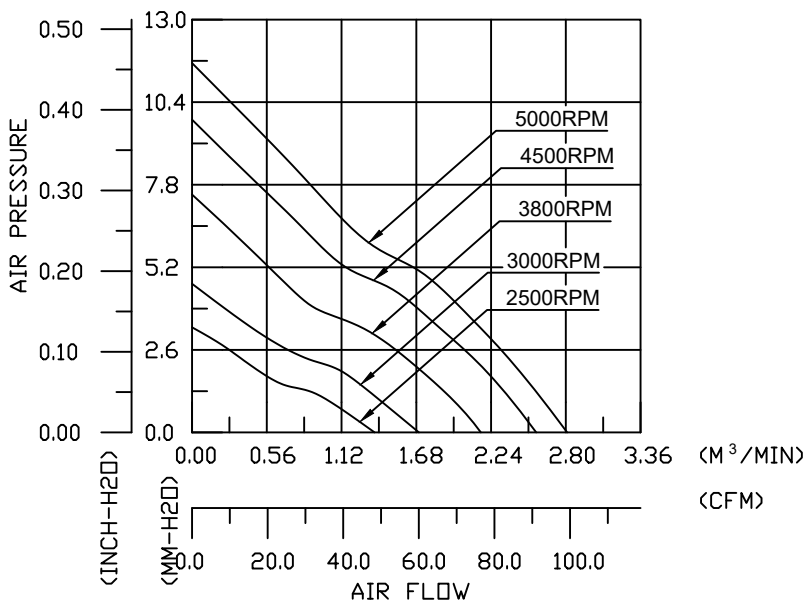
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

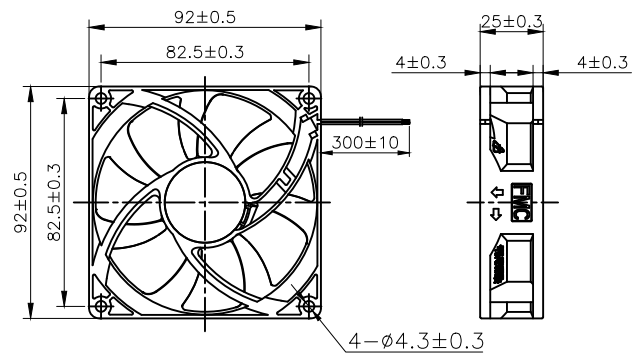
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

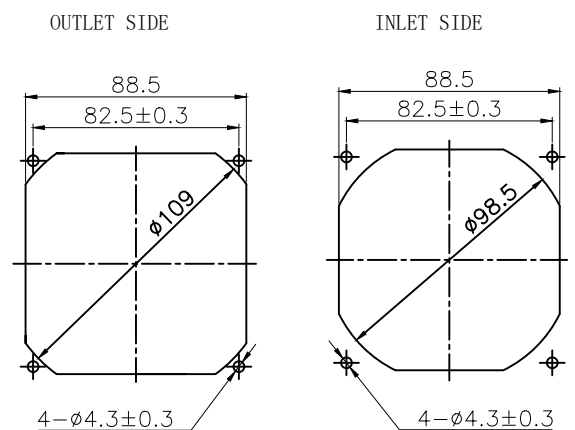
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



92x92x38 mm

12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 5 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 118g(4.17OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	Hours
FMD09238_12L	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	2500	1.333	47.06	4.23	0.167	70000
FMD09238_12M	-FG/RD	B F	12	7.0 to 13.2	0.25	3.00	3000	1.647	58.18	6.06	0.239	70000
FMD09238_12H	-FG/RD	B F	12	7.0 to 13.2	0.55	6.60	3800	2.022	71.42	8.83	0.348	70000
FMD09238_12U	-FG/RD	B	12	7.0 to 13.2	0.65	7.80	4500	2.434	85.96	12.12	0.477	70000
FMD09238_12S	-FG/RD	B	12	7.0 to 13.2	1.10	13.2	5500	2.884	101.85	16.71	0.658	70000

* Function type is optional.

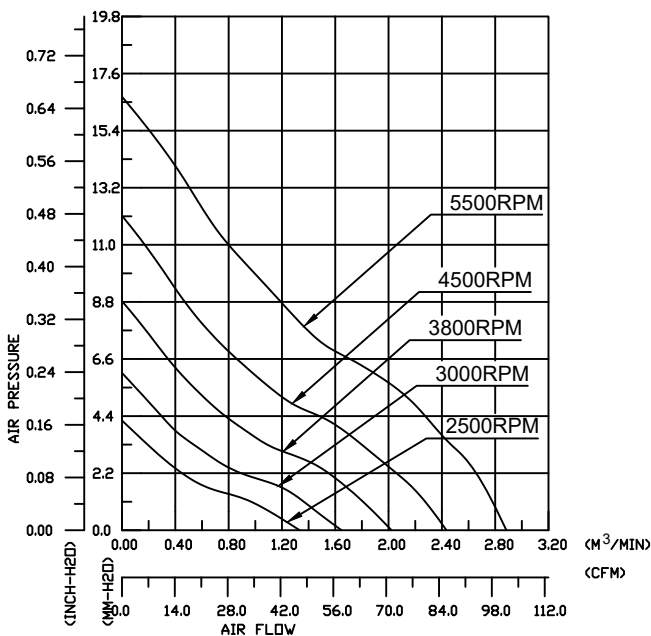
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

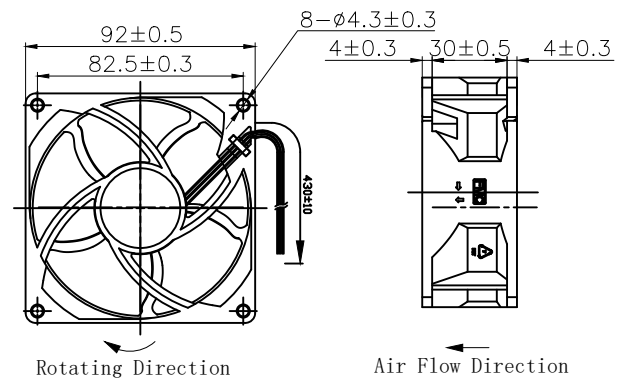
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

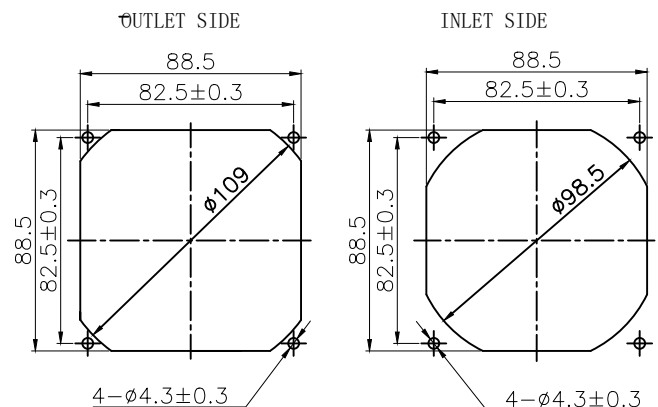
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



120x120x25 mm 12V,24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 180g(6.35OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMD12025_12L	-FG/RD	B F	12	7.0 to 13.2	0.22	2.64	2000	1.784	62.99	3.88	0.153	32.6	70000
FMD12025_12M	-FG/RD	B F	12	7.0 to 13.2	0.37	4.44	2500	2.224	78.54	5.74	0.226	38.8	70000
FMD12025_12U	-FG/RD	B F	12	7.0 to 13.2	0.67	8.04	3400	3.096	109.34	9.24	0.364	47.2	70000
FMD12025_12S	-FG/RD	B	12	7.0 to 13.2	1.12	13.44	4600	4.327	152.80	14.57	0.574	54.7	70000
FMD12025_24L	-FG/RD	B F	24	11.0 to 26.4	0.12	2.88	2000	1.784	62.99	3.88	0.153	32.6	70000
FMD12025_24M	-FG/RD	B F	24	11.0 to 26.4	0.20	4.80	2500	2.224	78.54	5.74	0.226	38.8	70000
FMD12025_24U	-FG/RD	B F	24	11.0 to 26.4	0.35	8.40	3400	3.096	109.34	9.24	0.364	47.2	70000
FMD12025_24S	-FG/RD	B	24	11.0 to 26.4	0.55	13.20	4600	4.327	152.80	14.57	0.574	54.7	70000

* Function type is optional.

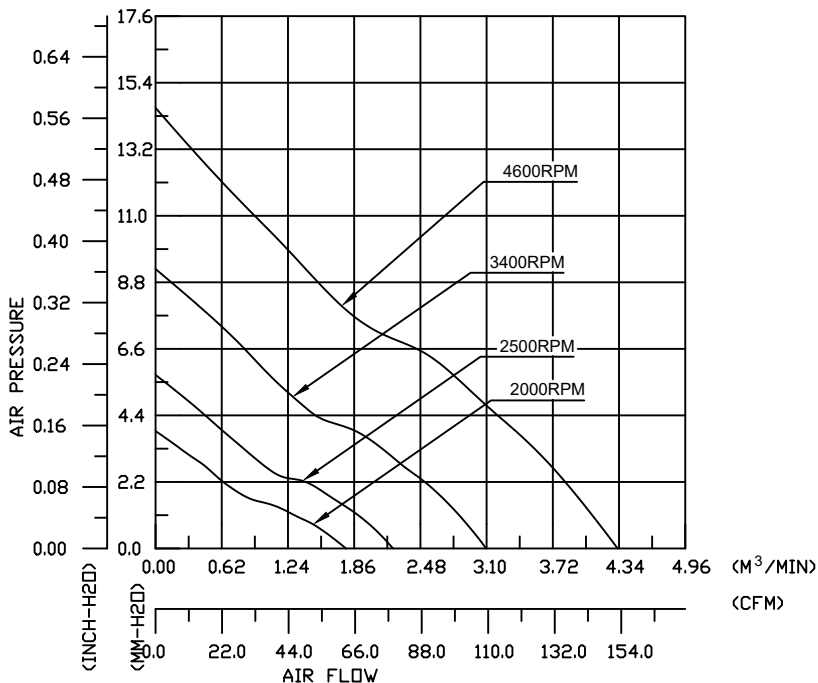
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

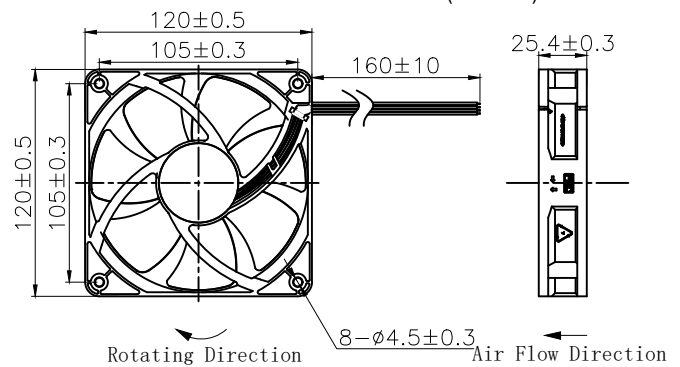
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

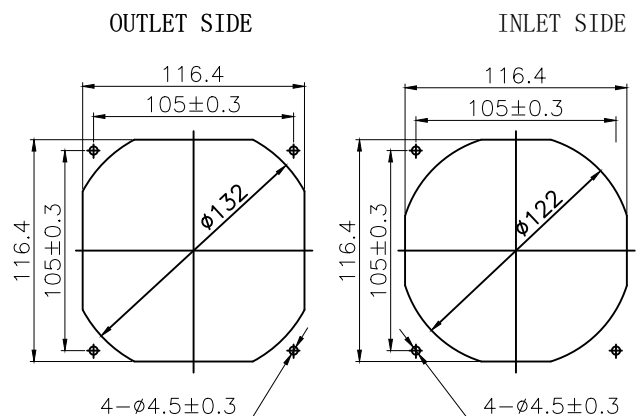
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



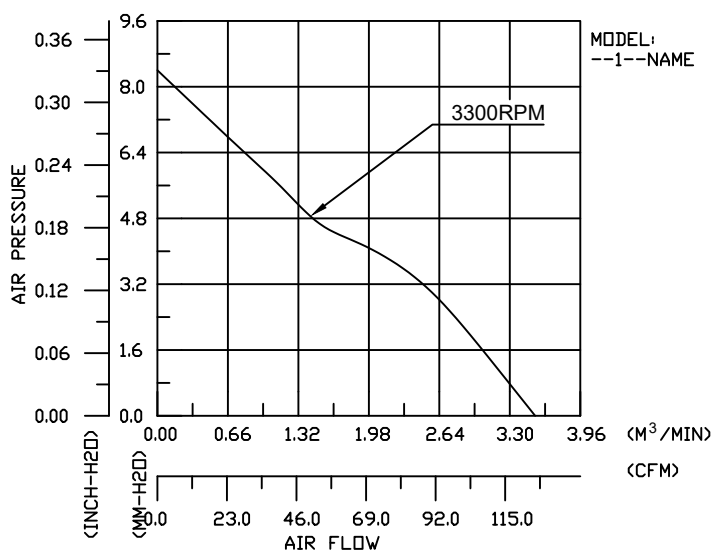
120x120x28 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 230g(8.12OZ)

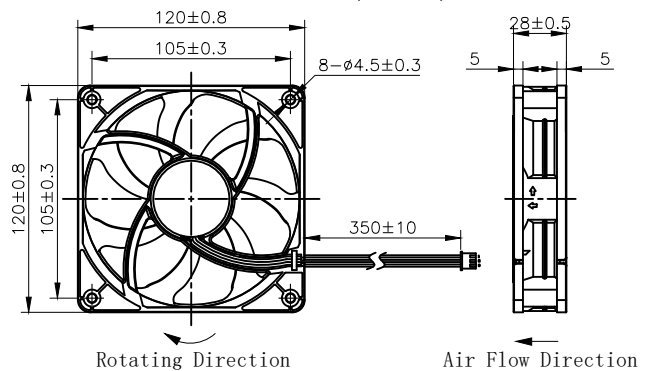
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMD12028_12H	-FG/RD	F	12	7.0 to 13.2	0.72	8.64	3300	3.249	114.73	6.99	0.275	45.5	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

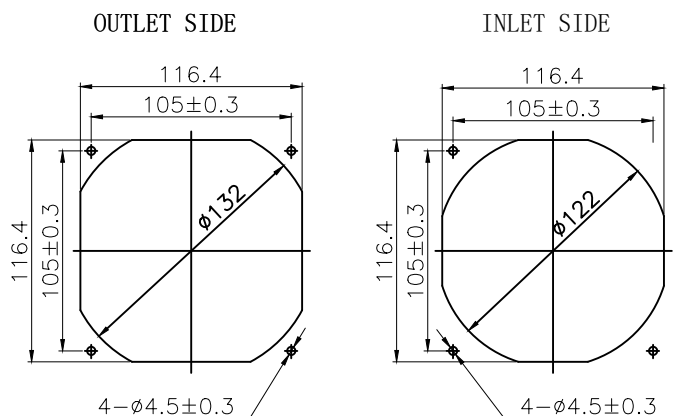
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



120x120x38 mm 12V,24V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 250g(8.83OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.	Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C		
Part No.	Signal												
FMD12038_12M	-FG/RD	B	12	7.0 to 13.2	0.37	4.44	2500	2.870	101.36	6.66	0.262	44.1	70000
FMD12038_12H	-FG/RD	B	12	7.0 to 13.2	0.60	7.20	3000	3.495	123.43	9.21	0.363	48.1	70000
FMD12038_12U	-FG/RD	B	12	7.0 to 13.2	0.70	8.40	3700	4.259	150.40	12.69	0.500	53.6	70000
FMD12038_12S	-FG/RD	B	12	7.0 to 13.2	1.35	16.20	4600	5.440	192.10	17.21	0.678	56.6	70000
FMD12038_24M	-FG/RD	B	24	11.0 to 26.4	0.18	4.32	2500	2.870	101.36	6.66	0.262	44.1	70000
FMD12038_24H	-FG/RD	B	24	11.0 to 26.4	0.30	7.20	3000	3.495	123.43	9.21	0.363	48.1	70000
FMD12038_24U	-FG/RD	B	24	11.0 to 26.4	0.35	8.40	3700	4.259	150.40	12.69	0.500	53.6	70000
FMD12038_24S	-FG/RD	B	24	11.0 to 26.4	0.67	16.08	4600	5.440	192.10	17.21	0.678	56.6	70000

* Function type is optional.

* The max. air flow and the speed are measured in free air;

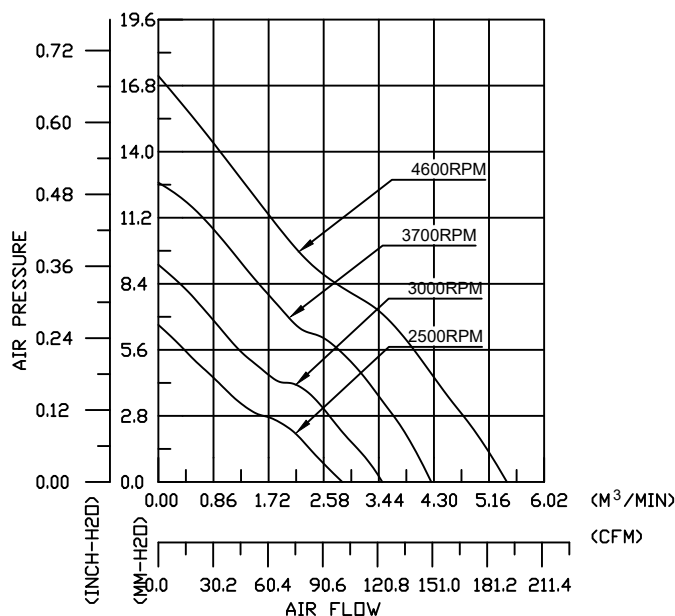
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

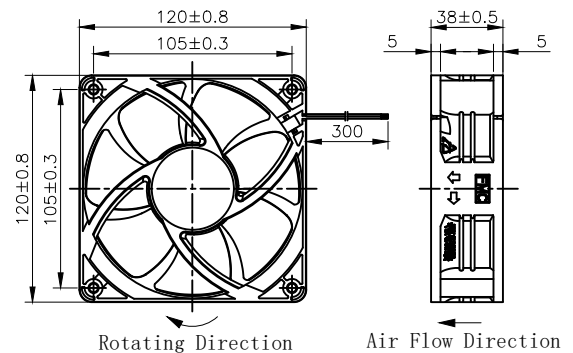
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

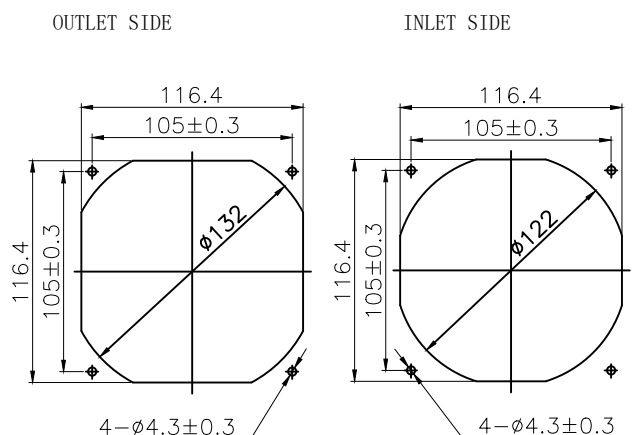
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)



DC AXIAL FANS



120x120x38 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#24 or Equivalent
- * Impeller: 7 Blades
- * Rotational direction: CCW view from inlet
- * Weight: 400g(14.12OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMF12038_12L	-FG/RD	B	12	7.0 to 13.2	0.90	10.80	4000	3.786	133.70	13.46	0.530	55.2	70000
FMF12038_12M	-FG/RD	B	12	7.0 to 13.2	1.80	21.60	5000	4.900	173.03	20.78	0.818	59.2	70000
FMF12038_12H	-FG/RD	B	12	7.0 to 13.2	3.00	36.00	6000	5.847	206.47	27.76	1.093	63.2	70000
FMF12038_12U	-FG/RD	B	12	7.0 to 13.2	4.80	57.60	7000	6.899	243.64	36.99	1.456	67.7	70000
FMF12038_12S	-FG/RD	B	12	7.0 to 13.2	5.70	68.40	7500	7.430	262.39	39.97	1.574	68.8	70000

* Function type is optional.

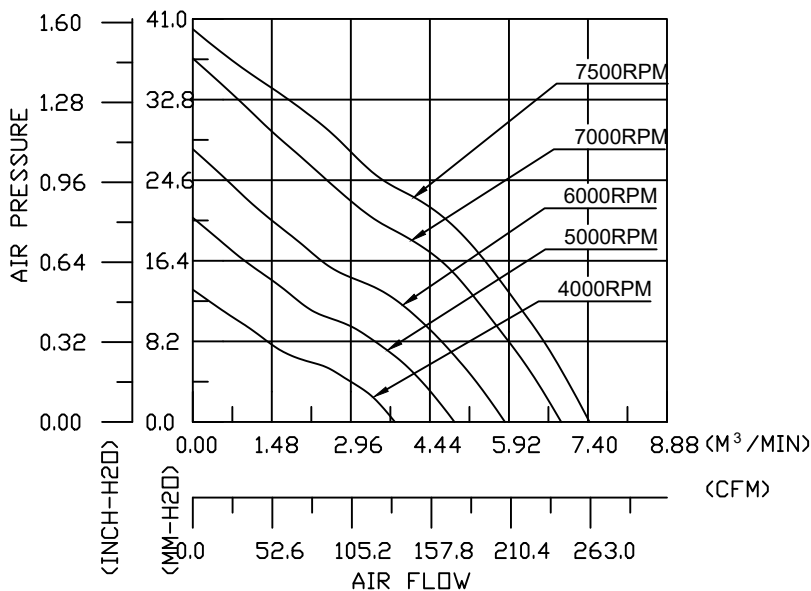
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

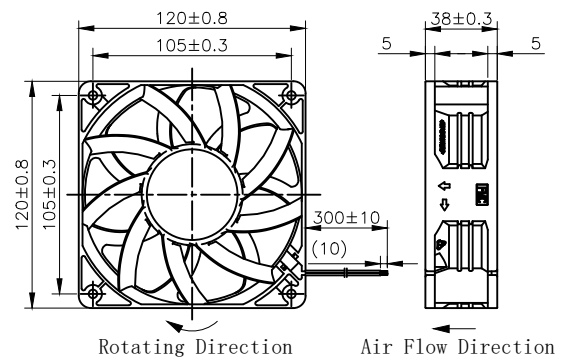
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

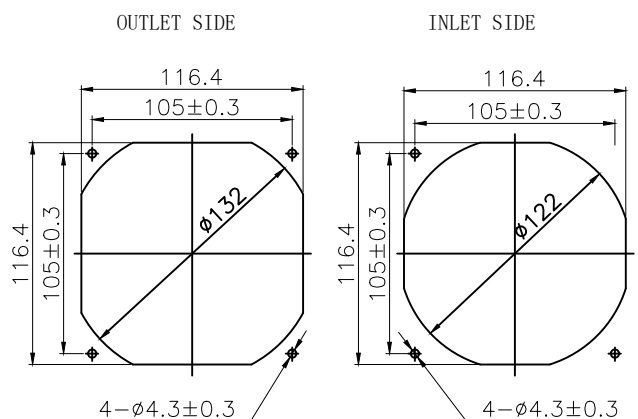
■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



■ MOUNTING PANEL CUTOUT(Unit:mm)





DC BLOWER FANS



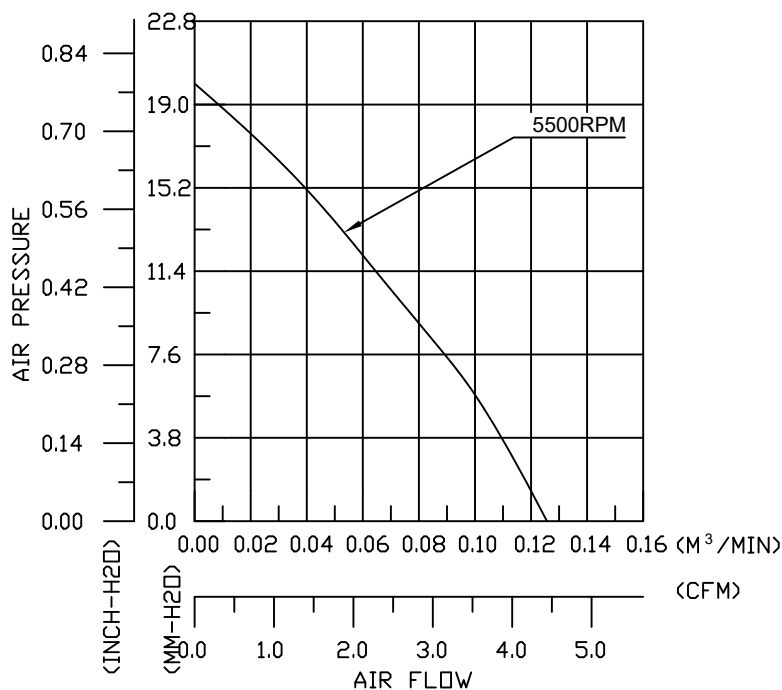
55.1x55x8 mm 5V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#30 or Equivalent
- * Impeller: 31 Blades
- * Rotational direction: CW view from major inlet
- * Weight: 20g(0.700Z)

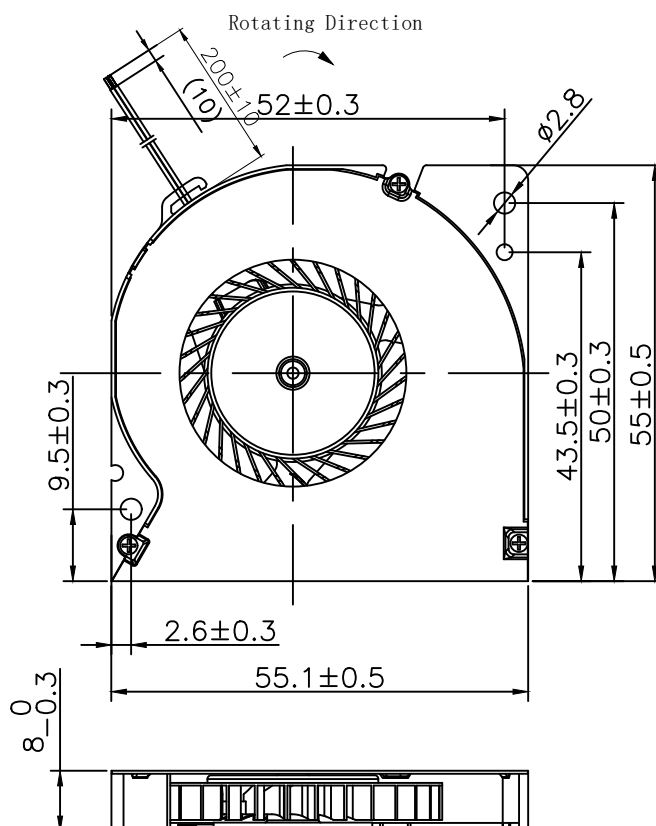
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB05508_05H	-FG/RD	F	5	3.5 to 6.0	0.50	2.50	5500	0.124	4.38	20.30	0.799	40.5	50000

- * 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, 0.5m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



DC BLOWER FANS



62.5x57x9 mm

5V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL10368 AWG#26 or Equivalent
- * Impeller: 19 Blades
- * Rotational direction: CW view from major Inlet
- * Weight: 23.4g(0.83OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C	
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB06010_05H	-FG/RD	B	05	3.5 to 5.5	0.45	2.25	4500	0.142	5.00	17.28	0.680	31.8	70000
FMB06010_05U	-FG/RD	B	05	3.5 to 5.5	0.65	3.25	5500	0.173	6.10	25.81	1.016	37.1	70000

* Function type is optional.

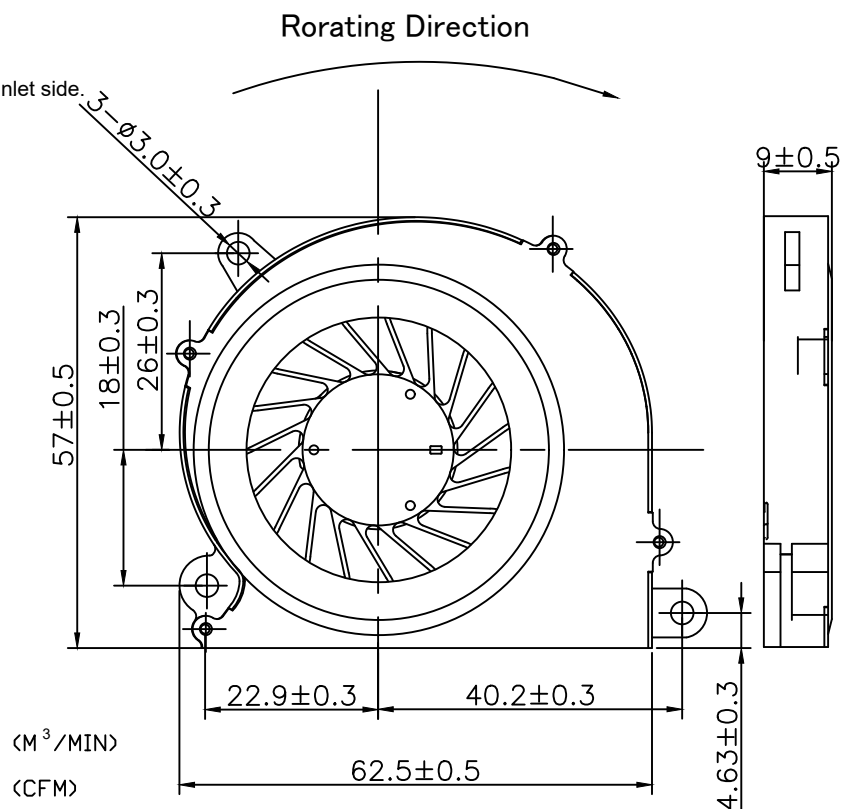
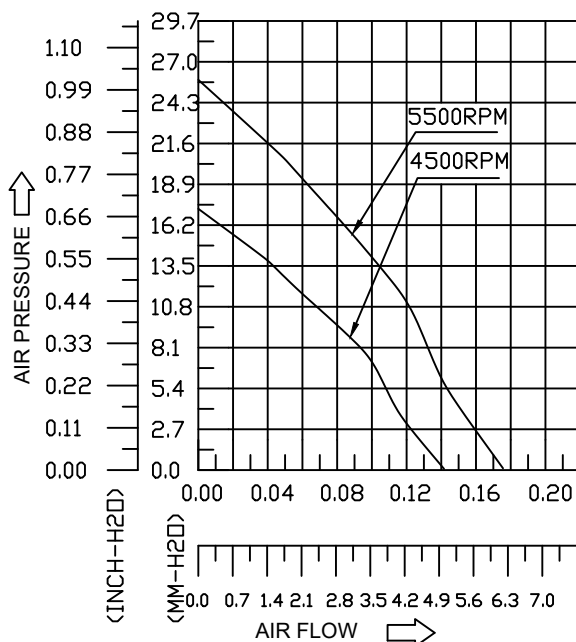
* The max. air flow and the speed are measured in free air;
max. air pressure is measured at zero air flow.

* Noise is measured in anechoic chamber in free air, 1m from inlet side.

* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):





DC BLOWER FANS



65x60x10 mm

5V

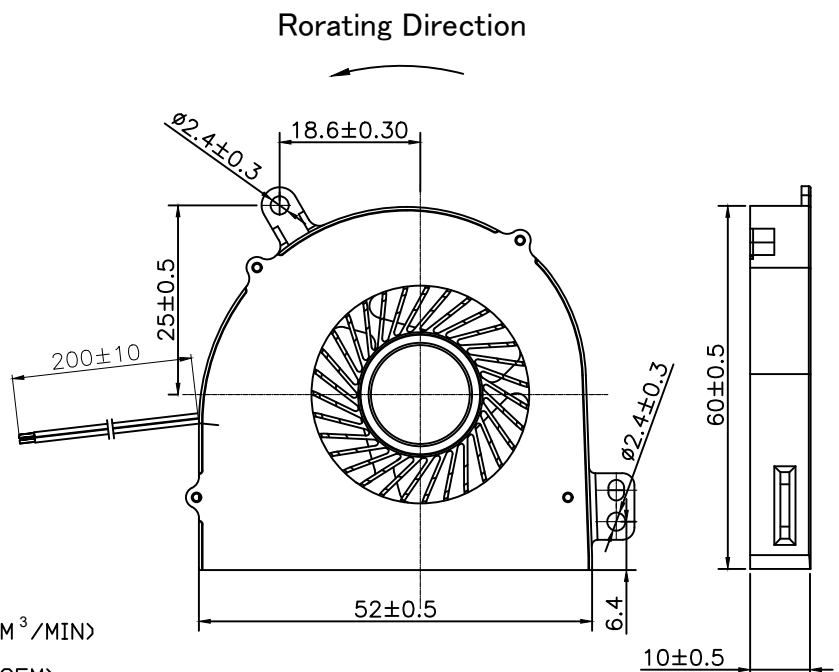
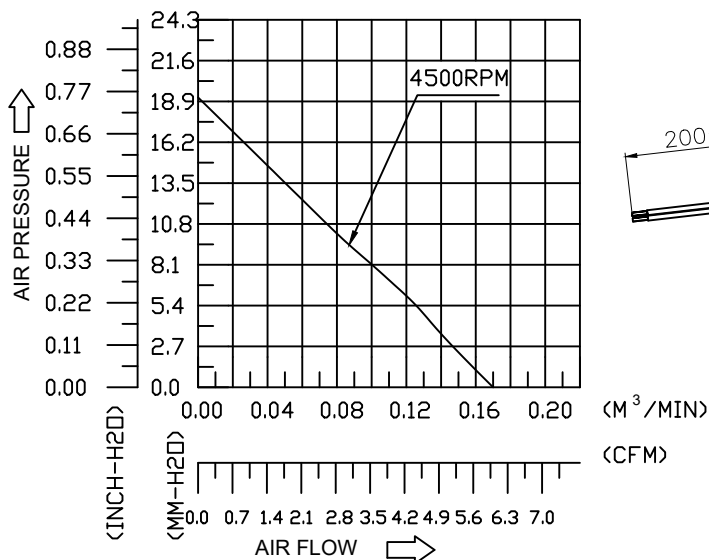
- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#30 or Equivalent
- * Impeller: 31 Blades
- * Rotational direction: CCW view from major inlet
- * Weight: 26.8g(0.95OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.	Acoustic Noise	Life Expectancy
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	Hours
FMB06010_05U	-FG/RD	B F	5	3.5 to 5.5	0.65	3.25	4500	0.173	6.10	19.00	0.748	50000

■ DIMENSIONS DRAWING(Unit:mm)

- * 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, 0.5m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):





DC BLOWER FANS



75x75x5.5 mm 5V

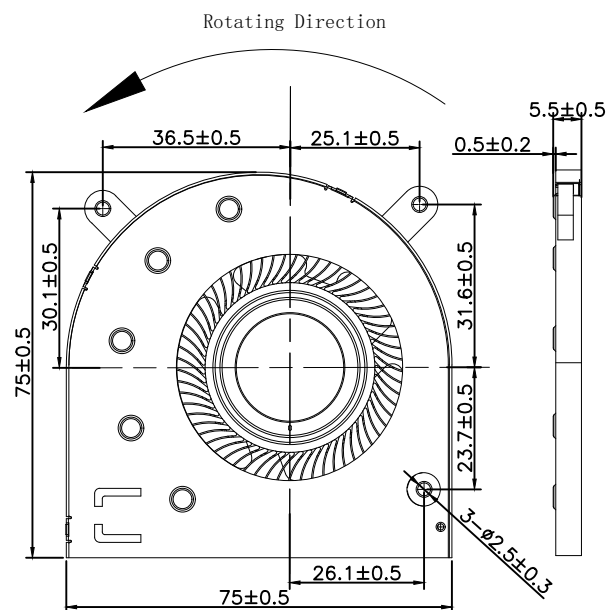
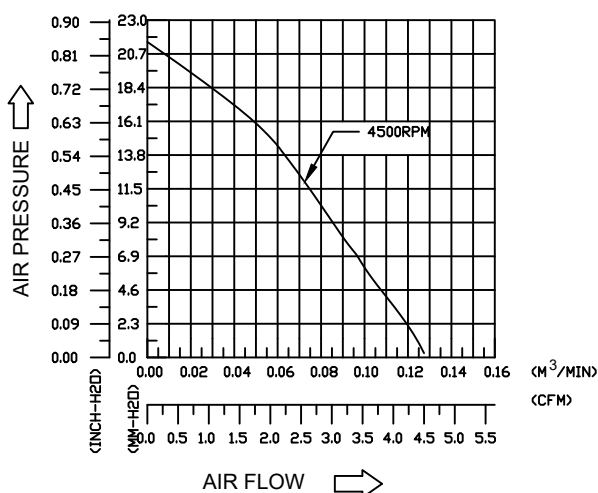
- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL3302 AWG#30 or Equivalent
- * Impeller: 61 Blades
- * Rotational direction: CCW view from major inlet
- * Weight: 33g(1.16OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB07505_05M	-FG/RD	F	05	3.5 to 5.5	0.67	3.35	4500	0.127	4.50	21.52	0.847	42.0	50000

■ DIMENSIONS DRAWING(Unit:mm)

- * 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, 0.5m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):





DC BLOWER FANS

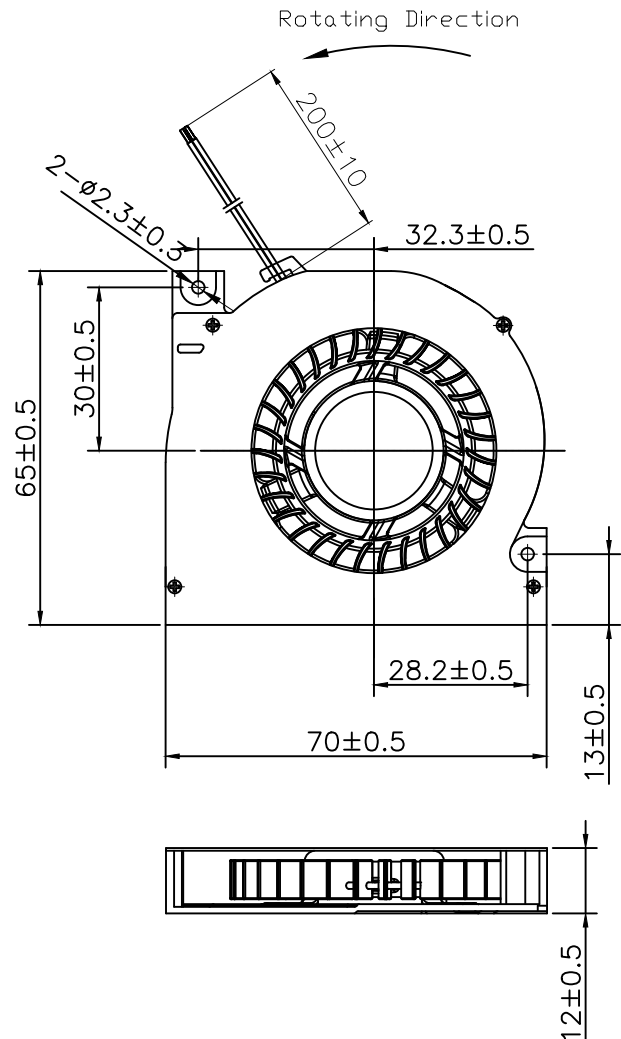


70x65x12 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#30 or Equivalent
- * Impeller: 31 Blades
- * Rotational direction: CCW view from major inlet
- * Weight: 50g(1.77OZ)

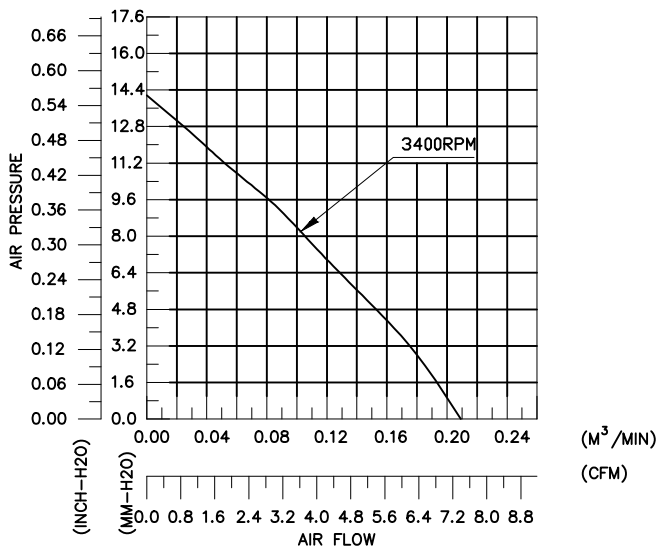
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB07012_12M	-FG/RD	F	12	7.0 to 13.2	0.30	3.60	3400	0.207	7.30	14.10	0.555	41.0	50000

■ DIMENSIONS DRAWING(Unit:mm)



- * 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, 0.5m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):





DC BLOWER FANS



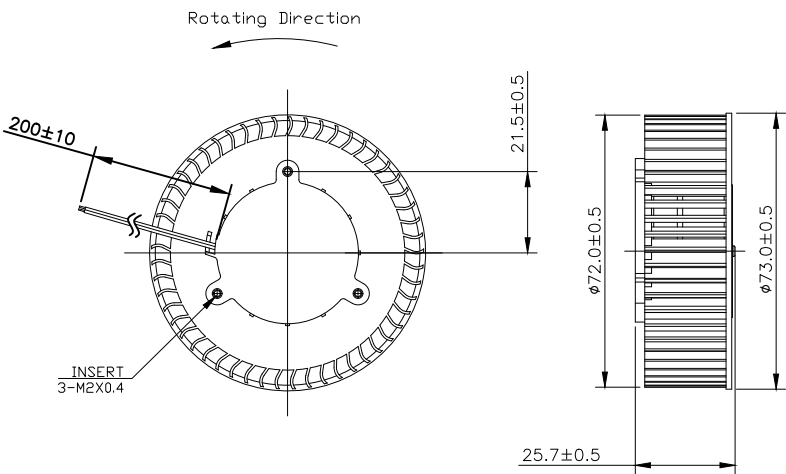
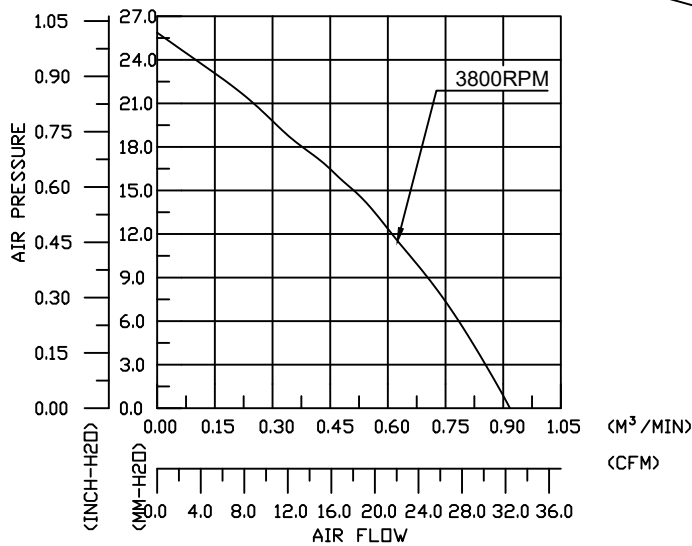
73x25 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL10368 AWG#28 or Equivalent
- * Impeller: 53 Blades
- * Rotational direction: CW view from major inlet
- * Weight: 70g(2.47OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@55°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB07525_12H	-FG/RD	B	12	10.8 to 12.6	1.10	13.20	3800	0.917	32.40	25.87	1.019	42.5	50000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):



DC BLOWER FANS



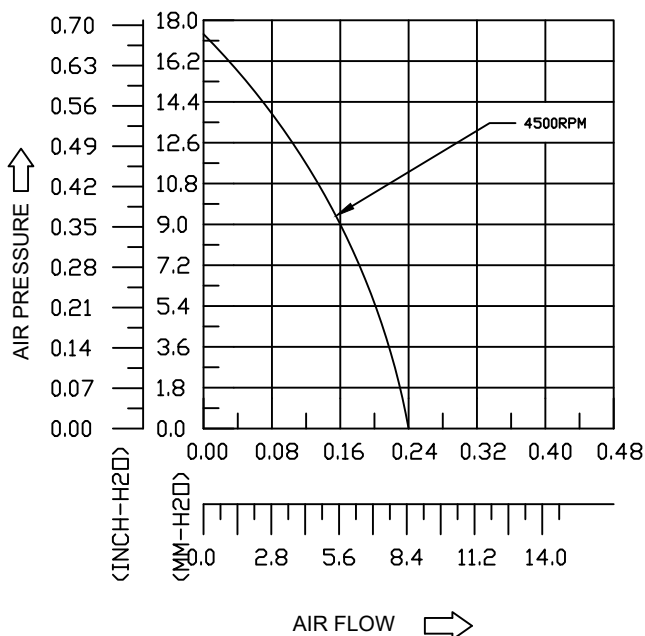
85x80x7.6 mm 5V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#30 or Equivalent
- * Impeller: 67 Blades
- * Rotational direction: CCW view from major inlet
- * Weight: 53.5g(1.89OZ)

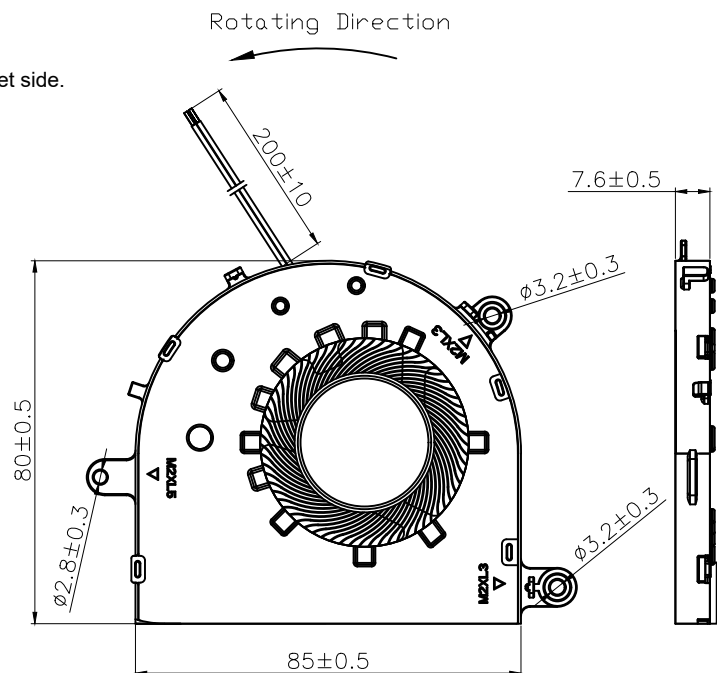
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.	Air Pressure Max.	Acoustic Noise	Life Expectancy L10@40°C		
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m³/min	CFM	mmH₂O	IN H₂O	dB-A	Hours
FMB08007_05H	-FG/RD	F	5	3.5 to 5.5	0.50	2.50	4100	0.238	8.40	17.40	0.685	43.5	50000

- * 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, 0.5m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)



DC BLOWER FANS



80x79.8x17.5 mm 12V

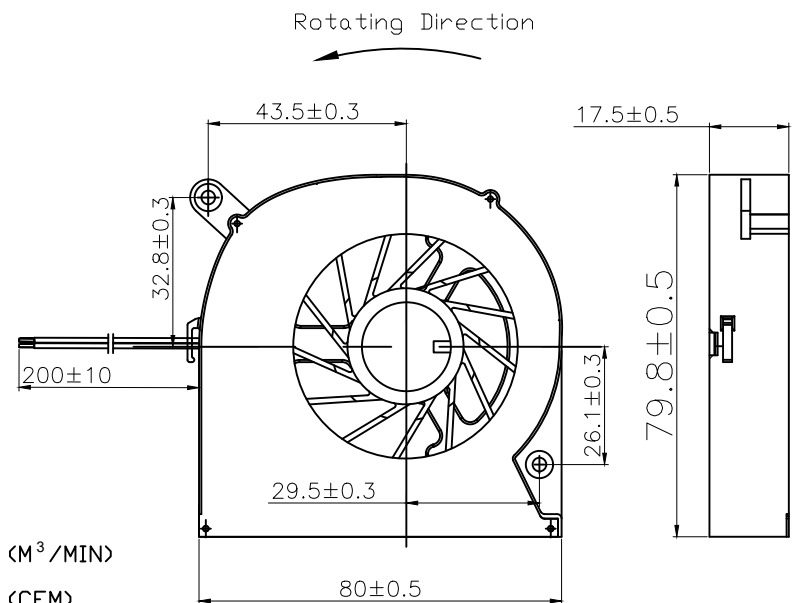
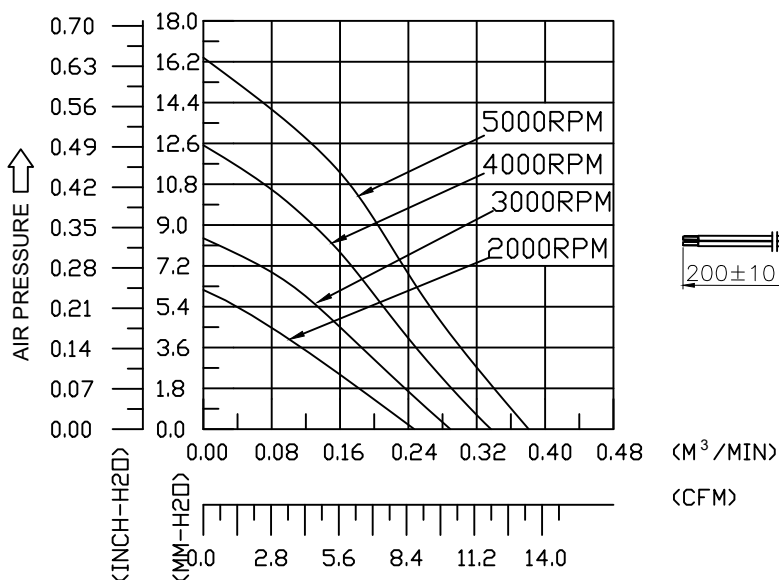
- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#28 or Equivalent
- * Impeller: 13 Blades
- * Rotational direction: CCW view from major inlet
- * Weight: 60g(2.12OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB08017_12L	-FG/RD	B F	12	7.0 to 13.2	0.12	1.44	2500	0.247	8.72	6.14	0.242	28.9	70000
FMB08017_12M	-FG/RD	B F	12	7.0 to 13.2	0.20	2.40	3000	0.289	10.21	8.42	0.331	33.0	70000
FMB08017_12H	-FG/RD	B F	12	7.0 to 13.2	0.32	3.84	3500	0.337	11.89	12.50	0.492	37.9	70000
FMB08017_12U	-FG/RD	B F	12	7.0 to 13.2	0.47	5.64	4000	0.464	16.38	13.45	0.530	41.7	70000

■ DIMENSIONS DRAWING(Unit:mm)

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):



DC BLOWER FANS



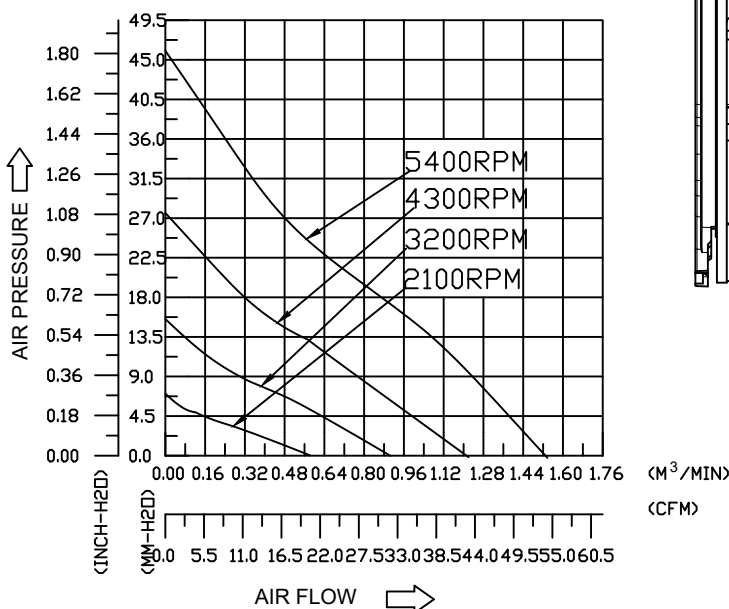
100x100x25 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1061 AWG#26 or Equivalent
- * Impeller: 9 Blades
- * Rotational direction: CW view from inlet
- * Weight: 110g(3.88OZ)

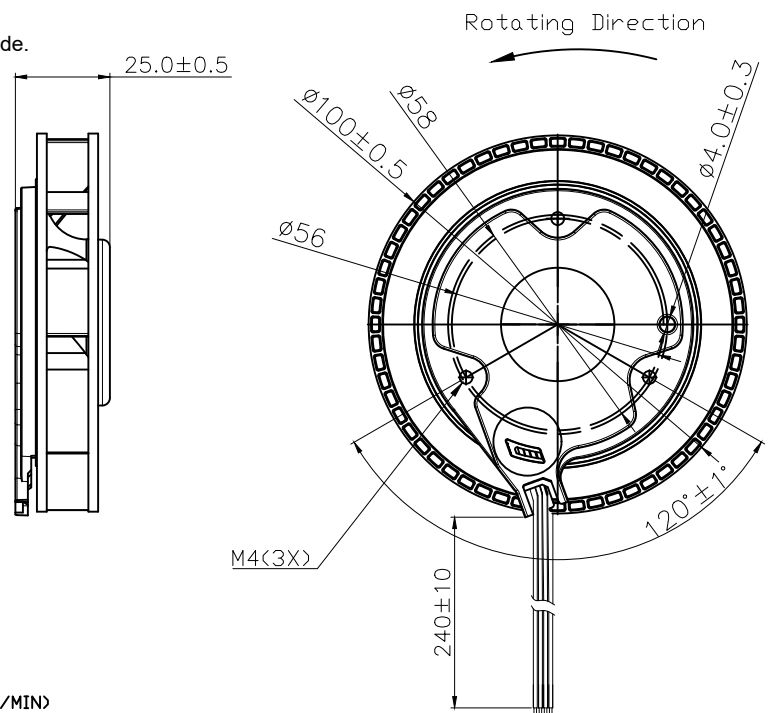
Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMC10025_12L	-FG/RD	B	12	7.0 to 13.2	0.10	1.20	2100	0.583	20.60	6.01	0.237	33.0	70000
FMC10025_12M	-FG/RD	B	12	7.0 to 13.2	0.30	3.60	3200	0.906	32.00	14.45	0.569	44.3	70000
FMC10025_12H	-FG/RD	B	12	7.0 to 13.2	0.65	7.80	4300	1.220	43.10	27.14	1.069	53.2	70000
FMC10025_12U	-FG/RD	B	12	7.0 to 13.2	1.10	13.20	5400	1.538	54.30	45.23	1.781	59.6	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ P & Q CURVE (AT RATED VOLTAGE):



■ DIMENSIONS DRAWING(Unit:mm)





DC BLOWER FANS



107x101x25 mm 12V

- * Material
Impeller&Frame: Plastic(UL 94V-0)
- * Lead wires: UL1007 AWG#26 or Equivalent
- * Impeller: 49 Blades
- * Rotational direction: CW view from inlet
- * Weight: 120g(4.24OZ)

Model		Bearing Type	Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Air Flow Max.		Air Pressure Max.		Acoustic Noise	Life Expectancy L10@40°C
Part No.	Signal	B.F.T.	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A	Hours
FMB10025_12H	-FG/RD	B	12	7.0 to 13.2	0.67	8.04	3400	0.638	22.54	23.14	0.911	52.0	70000
FMB10025_12U	-FG/RD	B	12	7.0 to 13.2	1.05	12.60	4000	0.750	26.50	36.15	1.423	54.8	70000

- * 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, 1m from inlet side.
- * All readings are typical values at rated voltage.
- * Specifications are subject to change without notice.

■ DIMENSIONS DRAWING(Unit:mm)

■ P & Q CURVE (AT RATED VOLTAGE):

