

FAN MOTORS



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Vision

Strength

Innovation

Service

Solutions

Quality

Success



 **NMB-MAT**


DC Axial Fans

1004KL	3
1204KL	3
1404KL	3
1604KL	3
1606KL	4
1608KL	4
1611RL	4
2004KL	4
2106KL	5
2404KL	5
2406KL	5
2408NL	5
2410ML	6
2410ML-X	6
2415KL	6
2810KL	6
3106KL	7
3108NL	7
3110KL	7
3112KL	7
3610KL	8
3610KL-X	8
3612KL	8
3615KL	8
FBA10J12L	9
4710KL	9
4712FL	9
4712KL	9
4715KL	10
4715KL- 3B	10
4715SL	10
FBA10B14L	10
FBA11J10M/14L	11
FBA12J12M	11
5015KL	11
5020KL	11
FBX14	12
5910PL	12
5920PL	12
6820PL	12

DC Motorized Impellers

101R057	13
175R069	13
190R071	13
220R071	13
225R099	14
250R100	14
280R125	14

DC Blowers

BM4515	15
FAL3F	15
BM5115	15
BM5125	15
BM6015	16
BM6025	16
BG0702	16
BG0703	16
FAL5F	17
BG0801	17
BG0903	17
BG1002	17
FAL6F	18
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AC Axial Fans

2412PS	19
3110PS	19
3115FS	19
3115PS	19
3610PS	20
4710PS	20
4715FS	20
4715MS	21
5915PC	21

Part Numbering System

	22
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Additional Products

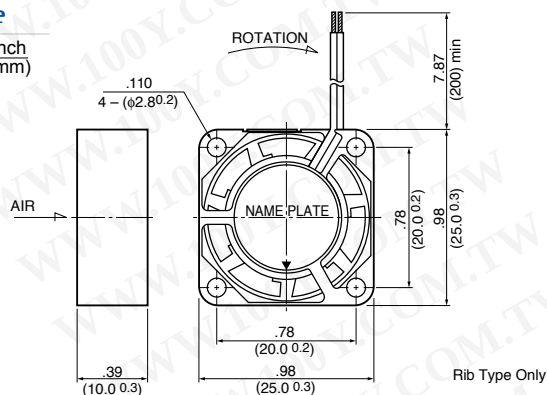
	23
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1004KL (25[□] × 10⁻¹) DC Volt: 5, 12 • CFM Range: 1.2 ~ 2.0

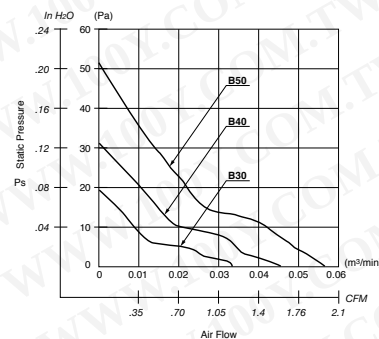
Outline

Units: inch
(mm)



Rib Type Only

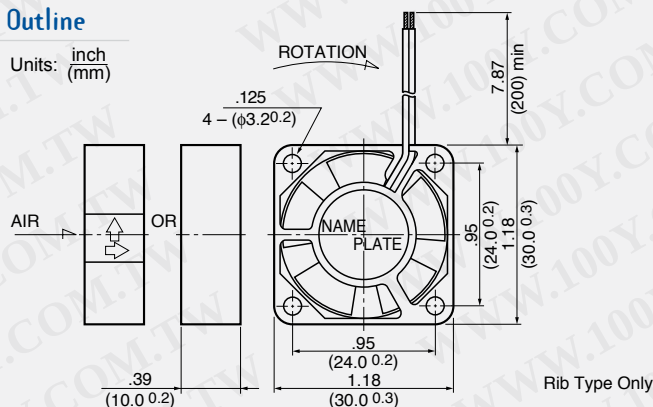
Characteristic Curves



1204KL (30[□] × 10⁻¹) DC Volt: 5, 12 • CFM Range: 2.7 ~ 3.8

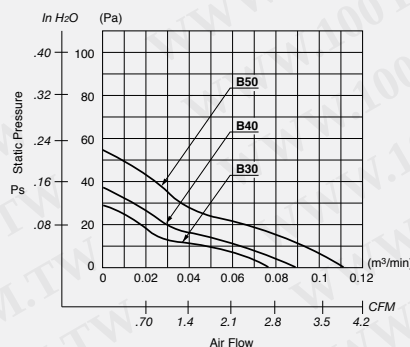
Outline

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(mm)



Rib Type Only

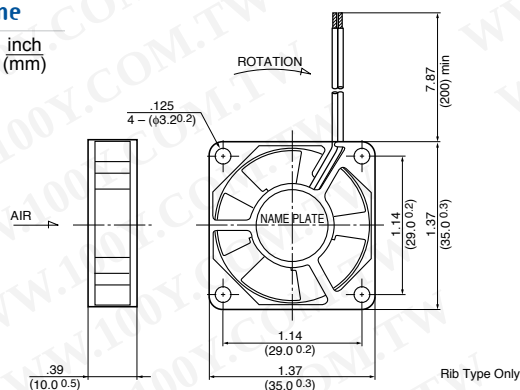
Characteristic Curves



1404KL (35[□] × 10⁻¹) DC Volt: 5, 12 • CFM Range: 3.0 ~ 5.6

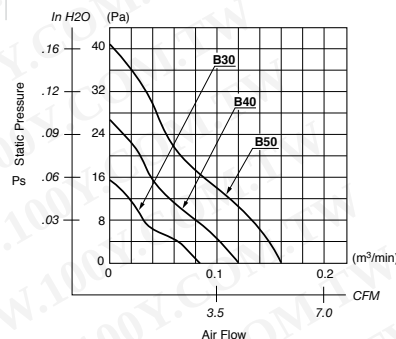
Outline

Units: inch
(mm)



Rib Type Only

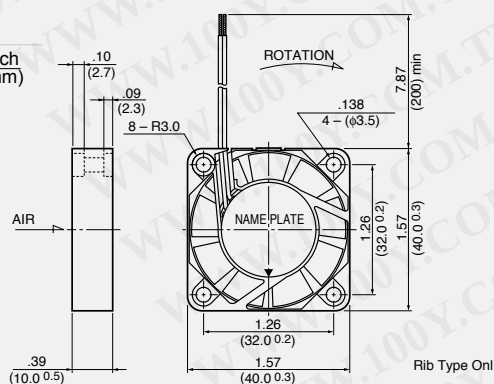
Characteristic Curves



1604KL (40[□] × 10⁻¹) DC Volt: 5, 12 • CFM Range: 4.2 ~ 6.0

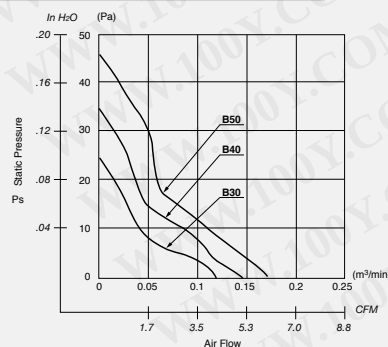
Outline

Units: inch
(mm)



Rib Type Only

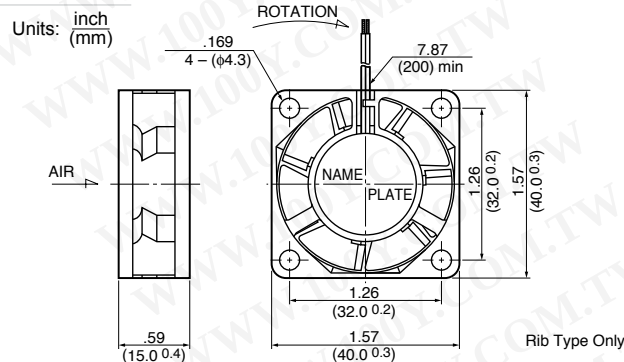
Characteristic Curves



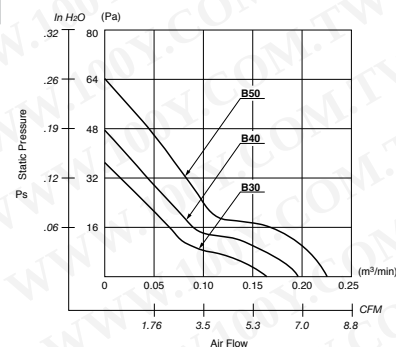


1606KL (40[□] x 15[□]) DC Volt: 5, 12, 24 • CFM Range: 6.0 ~ 8.1

Outline

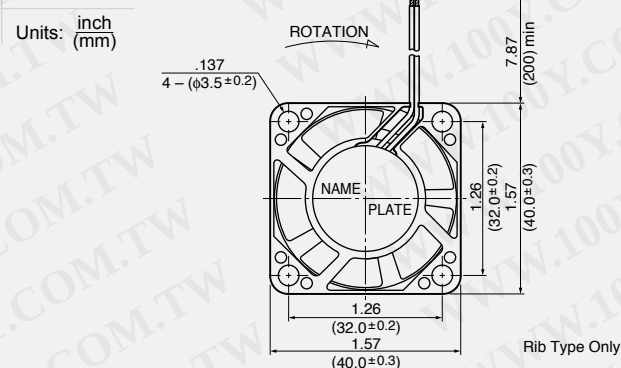


Characteristic Curves

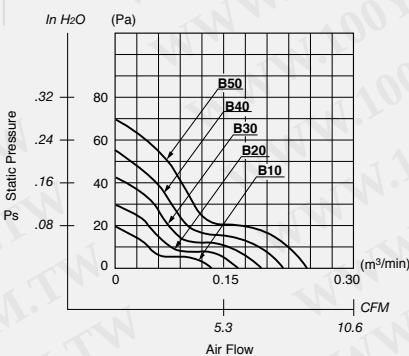


1608KL (40[□] x 20[□]) DC Volt: 5, 12, 24 • CFM Range: 4.9 ~ 9.5

Outline

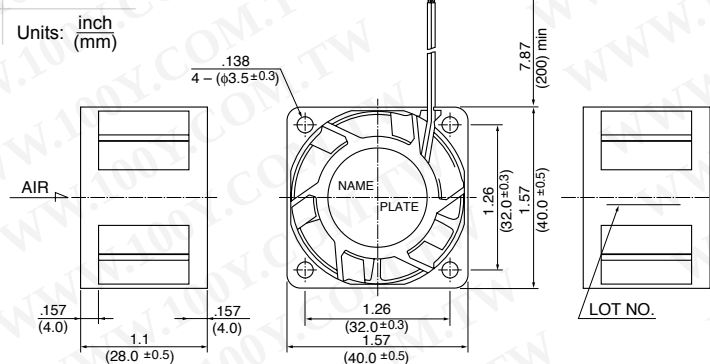


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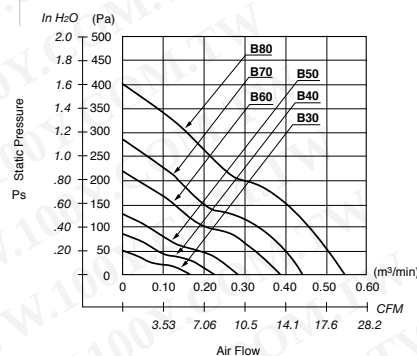


1611RL (40[□] x 28[□]) DC Volt: 12 • CFM Range: 6.0 ~ 19.4

Outline

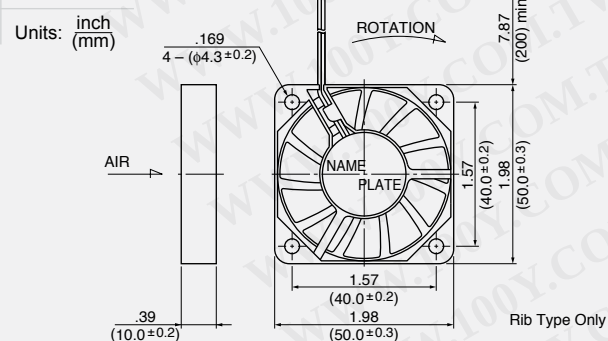


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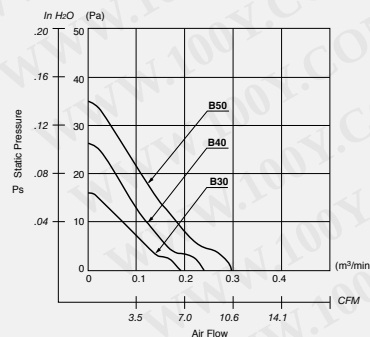


2004KL (50[□] x 10[□]) DC Volt: 5, 12 • CFM Range: 6.4 ~ 10.2

Outline



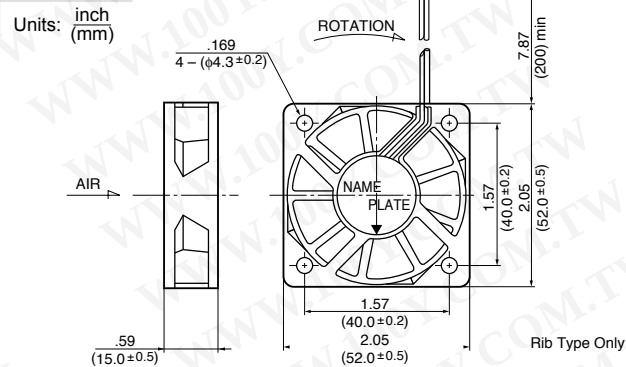
Characteristic Curves



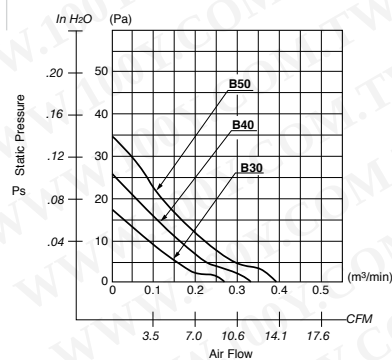


2106KL (52[□] x 15[□]) DC Volt: 12 • CFM Range: 9.9 ~ 14.1

Outline

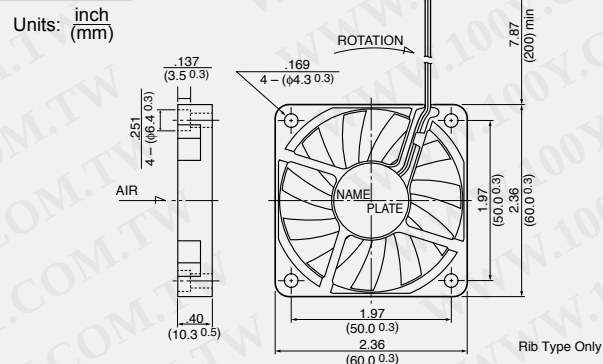


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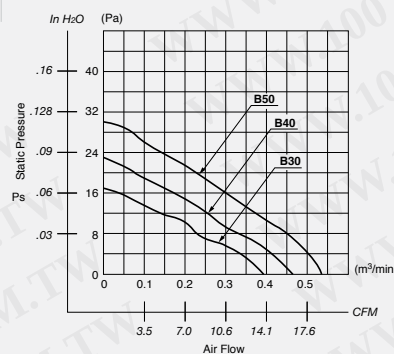


2404KL (60[□] x 10[□]) DC Volt: 12 • CFM Range: 13.7 ~ 19.0

Outline

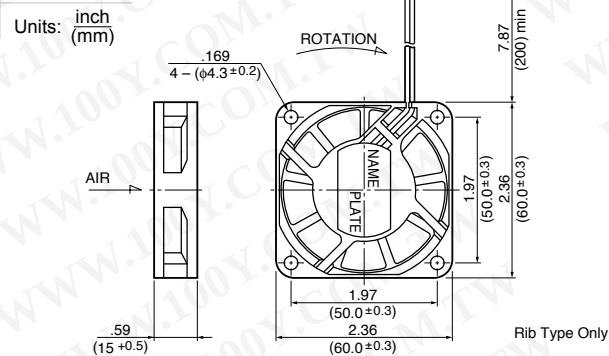


Characteristic Curves

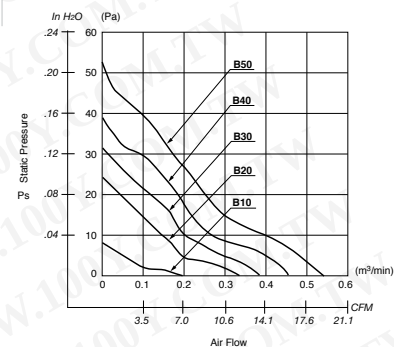


2406KL (60[□] x 15[□]) DC Volt: 12, 24 • CFM Range: 6.7 ~ 18.3

Outline

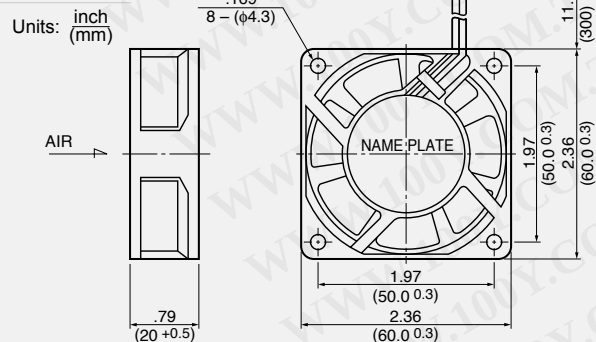


Characteristic Curves

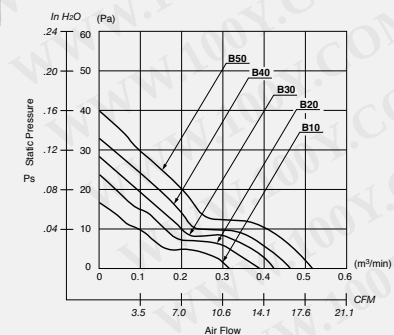


2408NL (60[□] x 20[□]) DC Volt: 12, 24 • CFM Range: 10.9 ~ 17.6

Outline



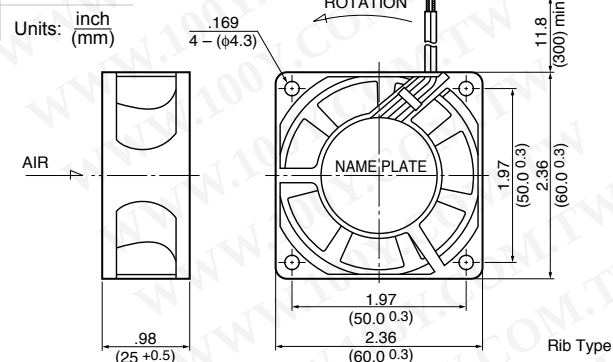
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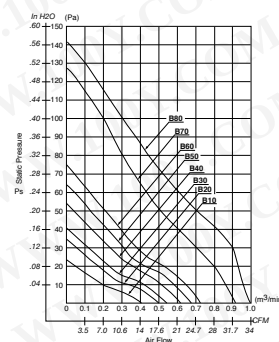


2410ML (60[□] × 25^L) DC Volt: 12, 24 • CFM Range: 13.7 ~ 37.0

Outline

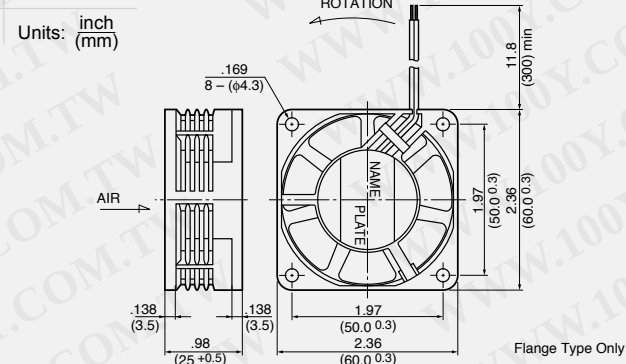


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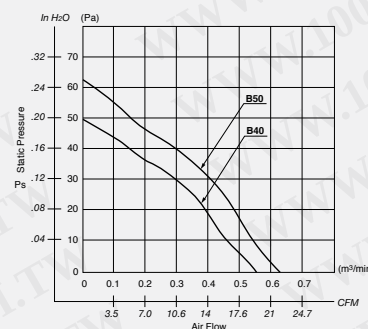


2410ML-X (60[□] × 25^L) DC Volt: 12 • CFM Range: 19.7 ~ 22.2

Outline

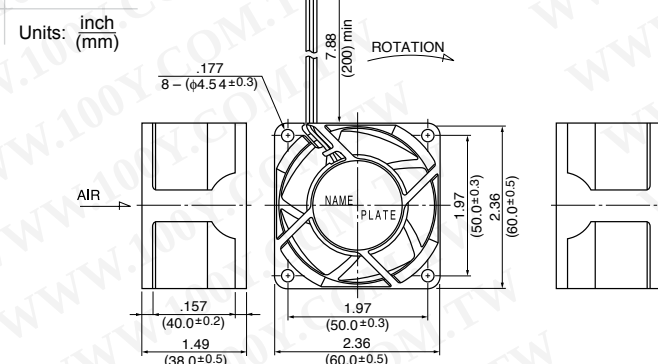


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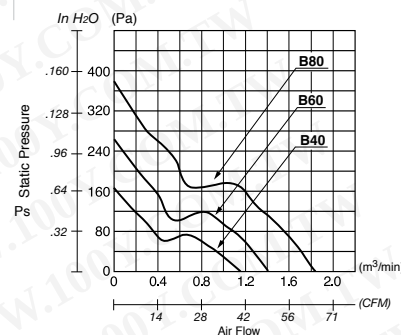


2415KL (60[□] × 38^L) DC Volt: 12 • CFM Range: 39.5 ~ 64.9

Outline

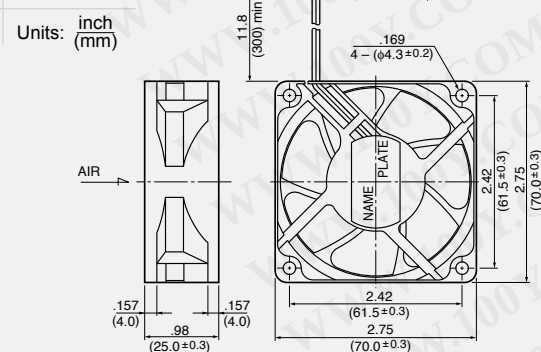


Characteristic Curves

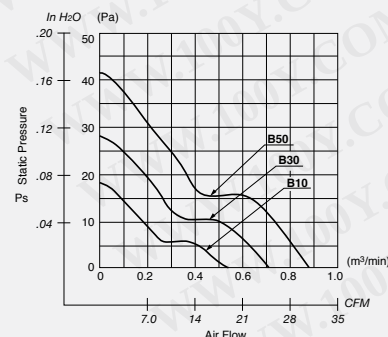


2810KL (70[□] × 25^L) DC Volt: 12 • CFM Range: 19.0 ~ 40.6

Outline



Characteristic Curves

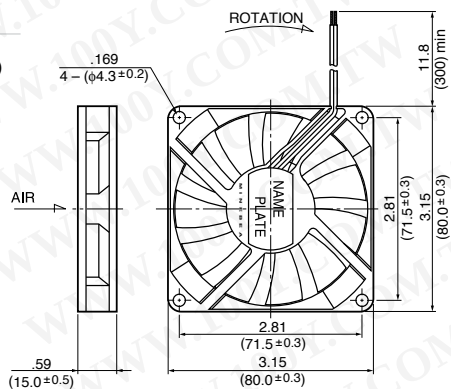




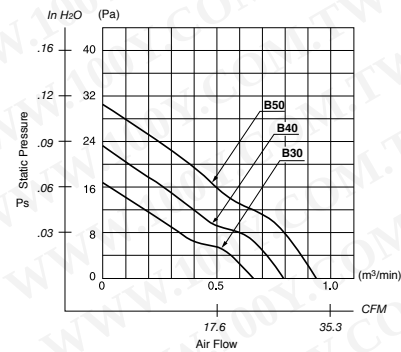
3106KL (80[□] × 15[□]) DC Volt: 12 • CFM Range: 23.3 ~ 32.8

Outline

Units: inch (mm)



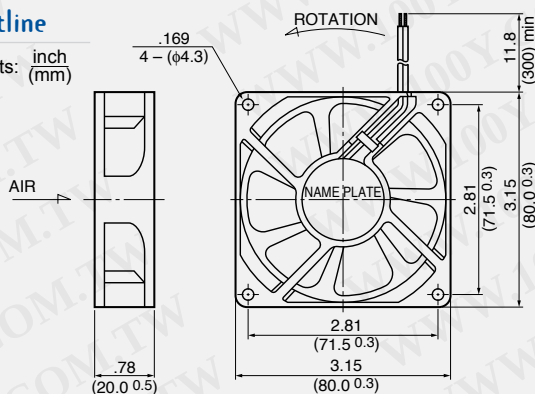
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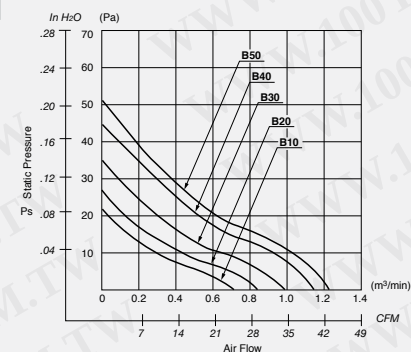
3108NL (80[□] × 20[□]) DC Volt: 12, 24 • CFM Range: 26.5 ~ 44.0

Outline

Units: inch (mm)



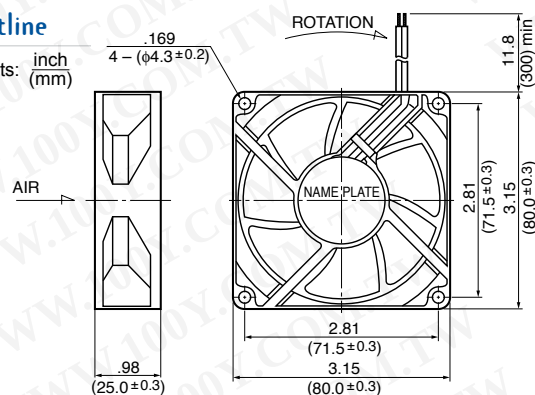
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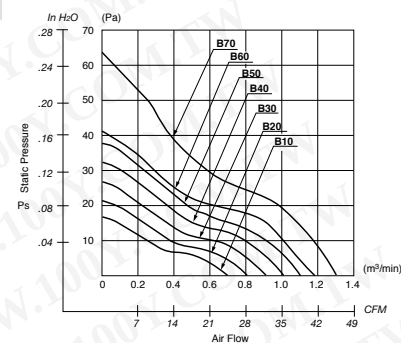
3110KL (80[□] × 25[□]) DC Volt: 12, 24 • CFM Range: 24.7 ~ 45.8

Outline

Units: inch (mm)



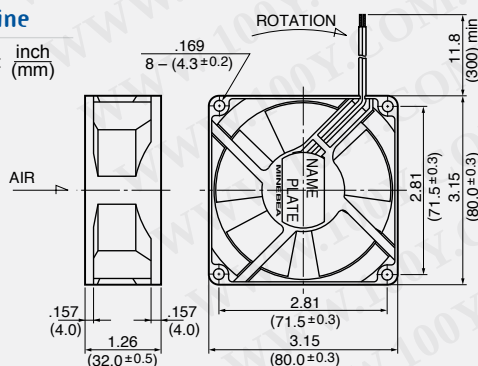
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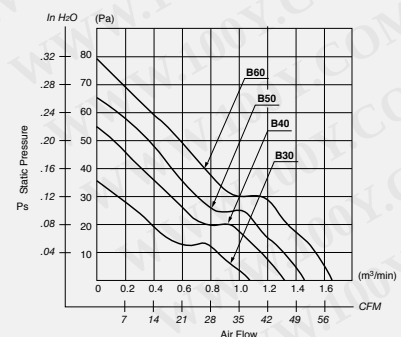
3112KL (80[□] × 32[□]) DC Volt: 12, 24 • CFM Range: 38.1 ~ 58.6

Outline

Units: inch (mm)

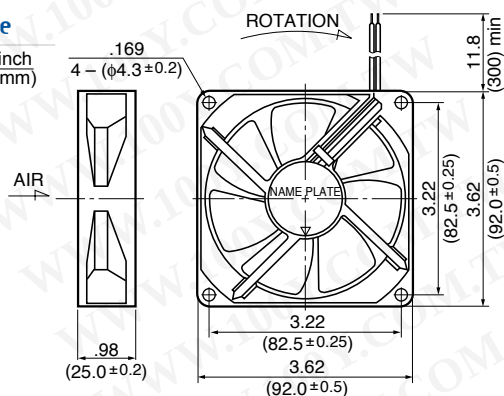


Characteristic Curves

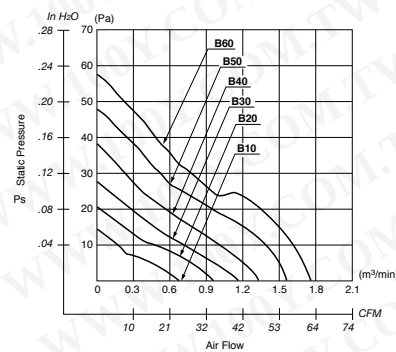


3610KL (92[□] x 25^L) DC Volt: 12, 24 • CFM Range: 26.5 ~ 61.8

Outline

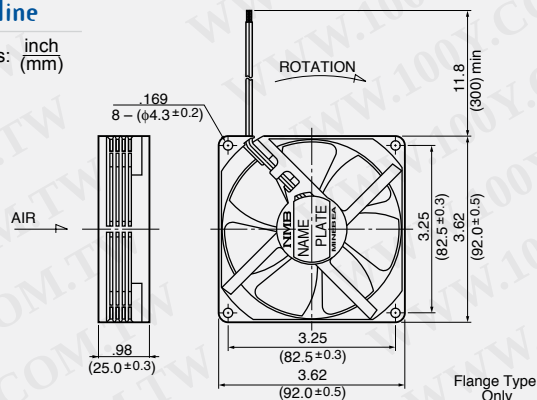
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Characteristic Curves

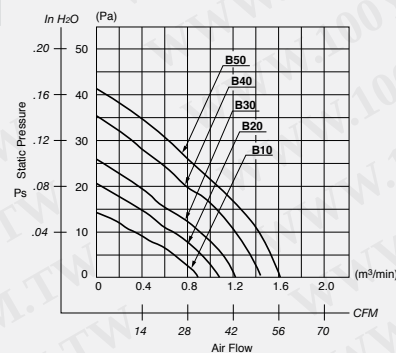


3610KL-X (92" x 25") DC Volt: 12, 24 • CFM Range: 31.4 ~ 62.8

Outline

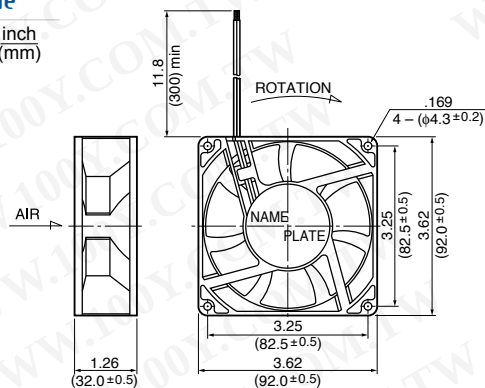
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Characteristic Curves

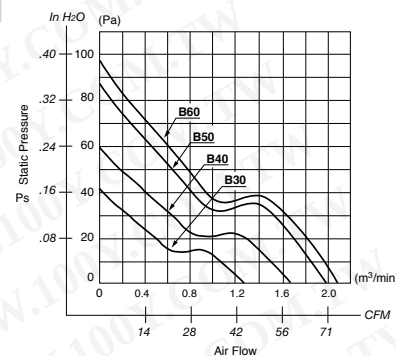


3612KL (92" x 32") DC Volt: 12, 24 • CFM Range: 47.3 ~ 70.5

Outline

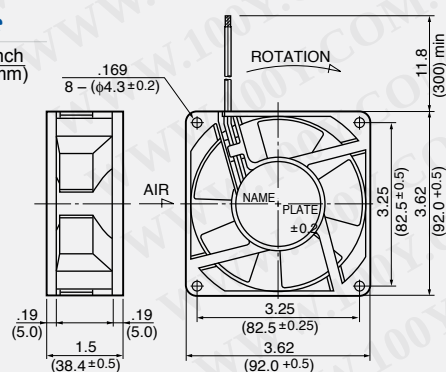
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Characteristic Curves

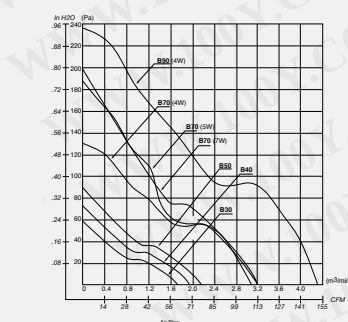


3615KL (92" x 38") DC Volt: 12, 24, 48 • CFM Range: 60.3 ~ 151.7

Outline

Units: $\frac{\text{inch}}{(\text{mm})}$ 

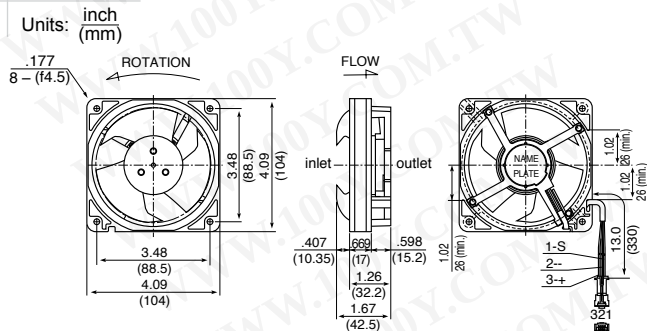
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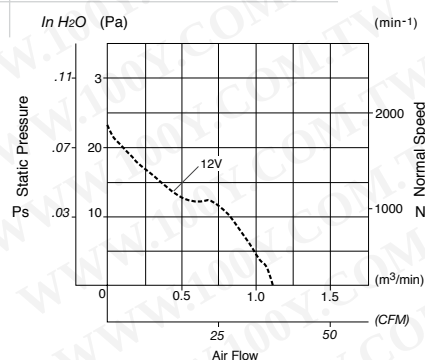
FBA10J12L (104[□] × 42^L) DC Volt: 12 • CFM Range: 38.8

Outline



Housing with solid corner type are available.

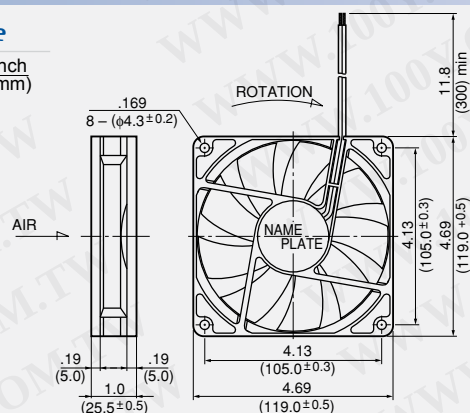
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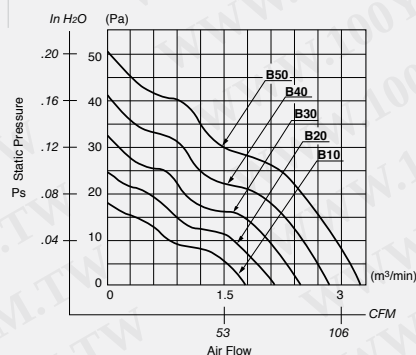
4710KL (119[□] × 25^L) DC Volt: 12, 24 • CFM Range: 63.5 ~ 114.7

Outline

Units: inch (mm)



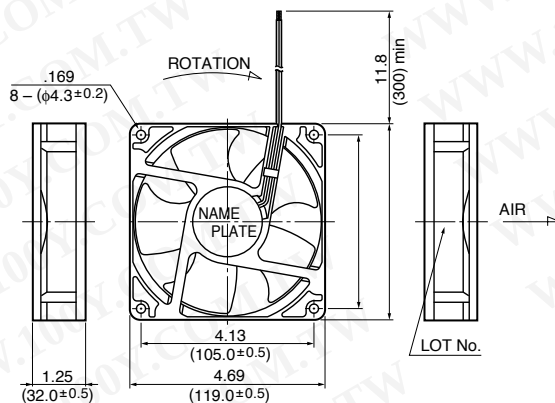
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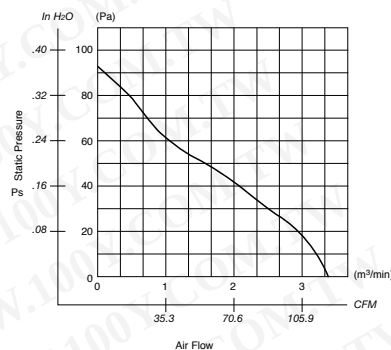
4712FL (119[□] × 32^L) DC Volt: 48 • CFM Range: 120.0

Outline

Units: inch (mm)



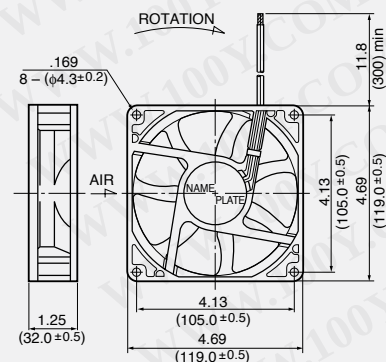
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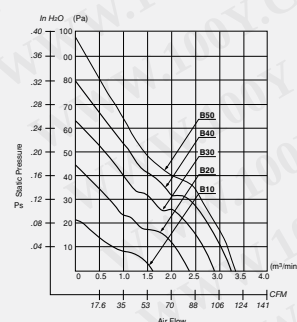
4712KL (119[□] × 32^L) DC Volt: 12, 24, 48 • CFM Range: 56.1 ~ 116.4

Outline

Units: inch (mm)



Characteristic Curves

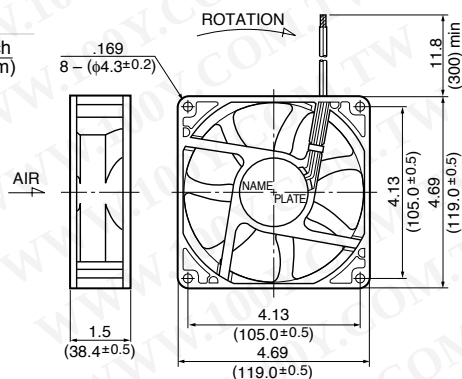




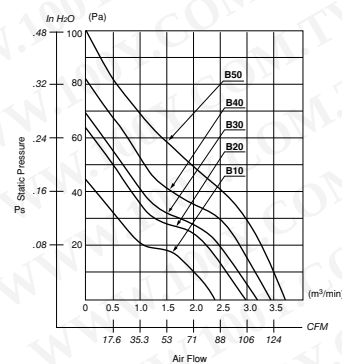
4715KL (119[□] x 38^L) DC Volt: 12, 24, 48 • CFM Range: 83.6 ~ 130.0

Outline

Units: inch (mm)



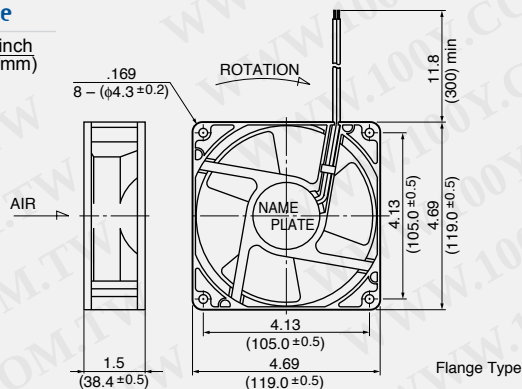
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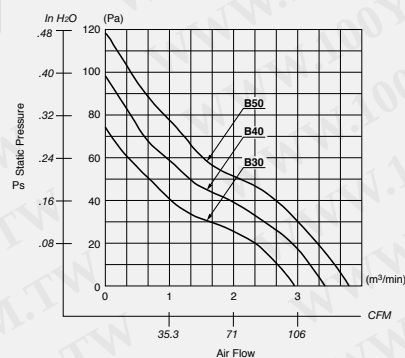
4715KL-3 BLADE (119[□] x 38^L) DC Volt: 12, 24, 48 • CFM Range: 105.0 ~ 132.0

Outline

Units: inch (mm)



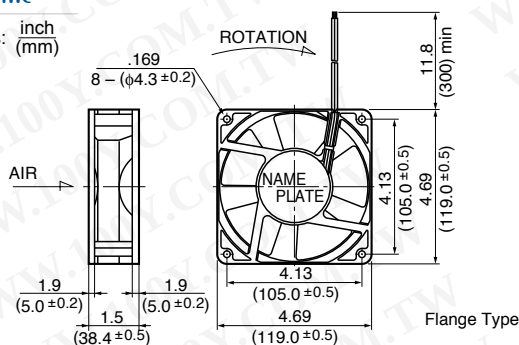
Characteristic Curves



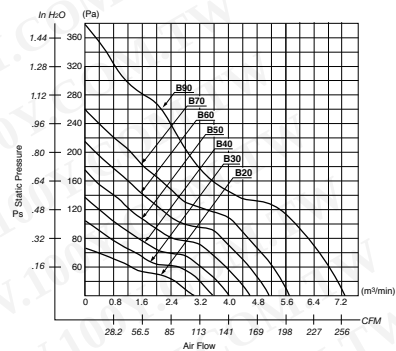
4715SL (119[□] x 38^L) DC Volt: 12, 24, 48 • CFM Range: 102.7 ~ 257.6

Outline

Units: inch (mm)



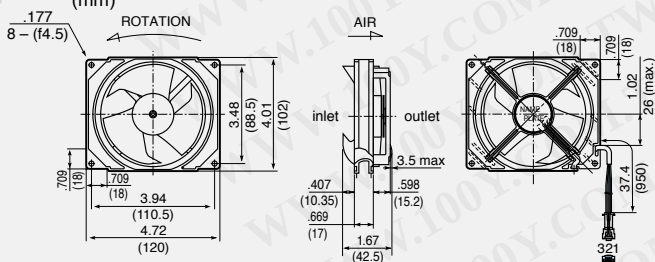
Characteristic Curves



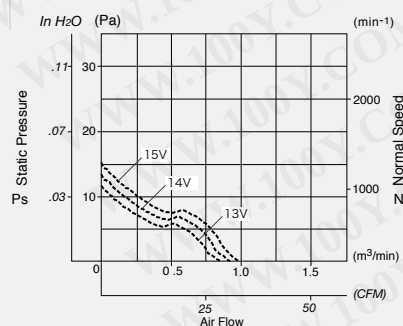
FBA10B14L (120[□] x 42^L) DC Volt: 14 • CFM Range: 32.1

Outline

Units: inch (mm)



Characteristic Curves



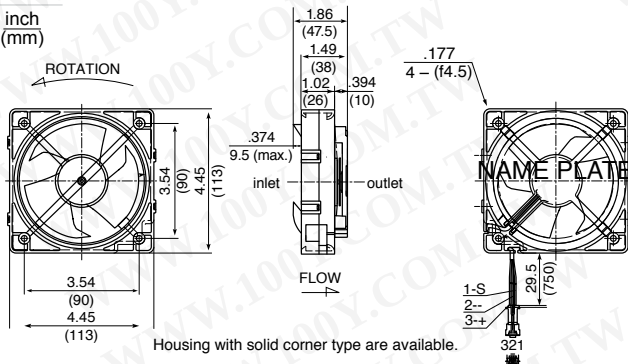
Housing with solid corner type are available.



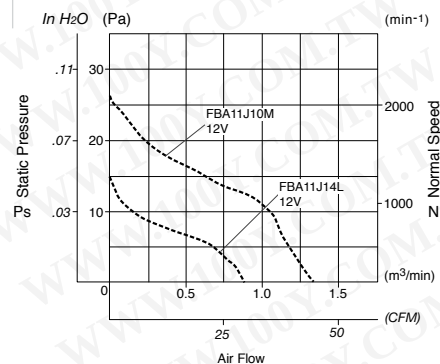
FBA11J10M/14L (113[□] × 47^L) DC Volt: 9, 14 • CFM Range: 36.0 ~ 39.5

Outline

Units: inch
(mm)



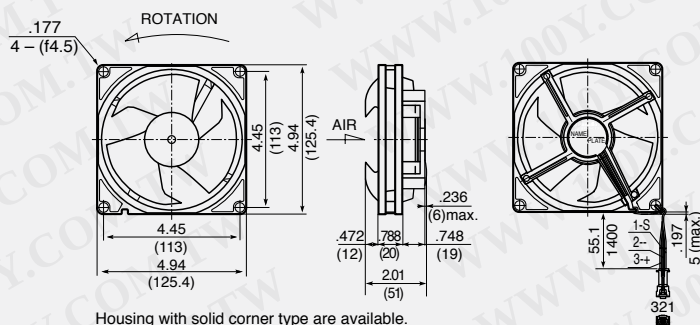
Characteristic Curves



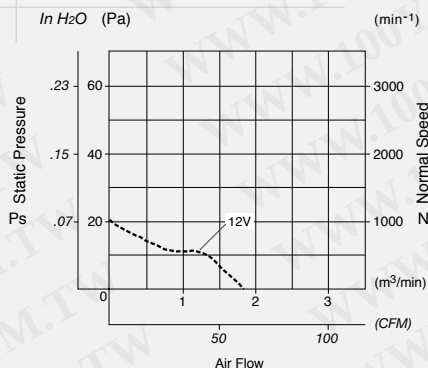
FBA12J12M (125.4[□] × 51^L) DC Volt: 12 • CFM Range: 65.3

Outline

Units: inch
(mm)



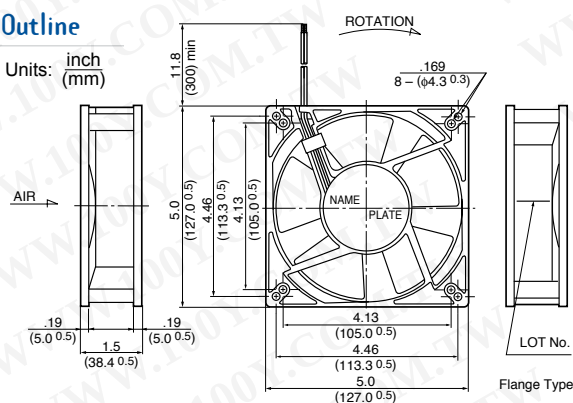
Characteristic Curves



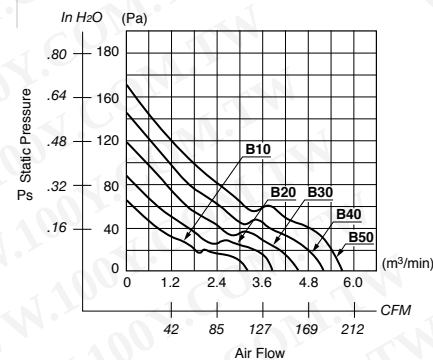
5015KL (127[□] × 38^L) DC Volt: 12, 24, 48 • CFM Range: 115.0 ~ 199.0

Outline

Units: inch
(mm)



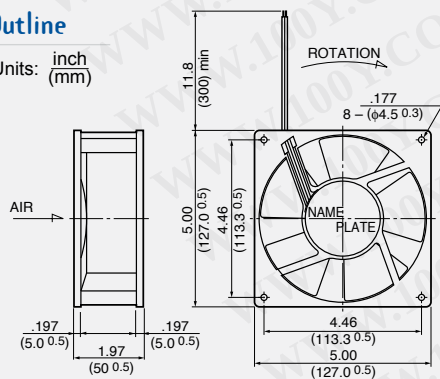
Characteristic Curves



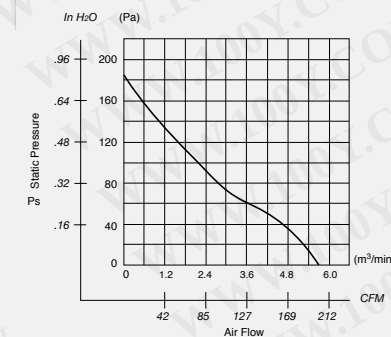
5020KL (127[□] × 50^L) DC Volt: 12 • CFM Range: 198.7

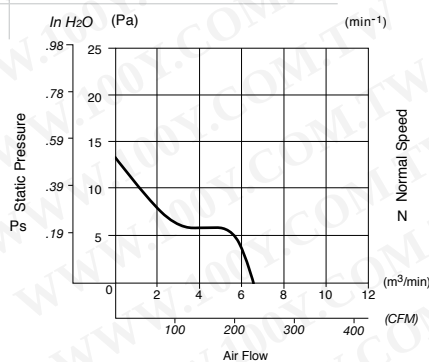
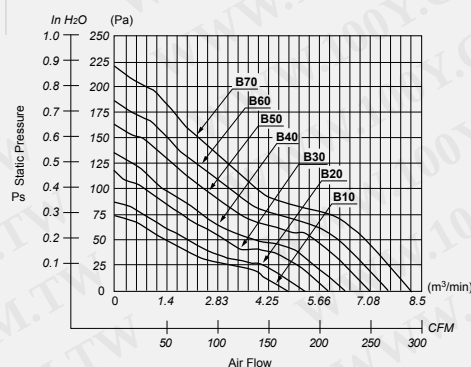
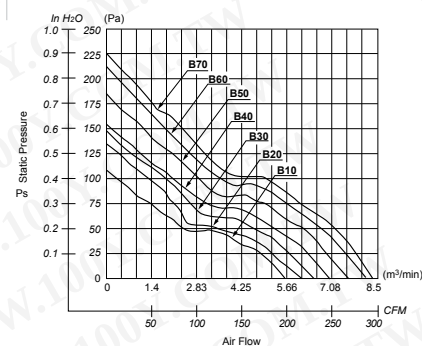
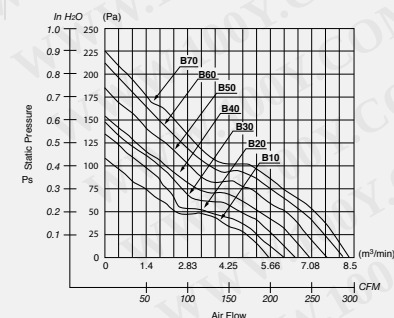
Outline

Units: inch
(mm)



Characteristic Curves



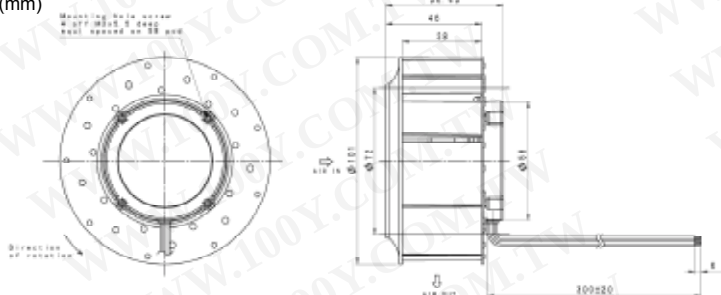
Units: $\frac{\text{inch}}{(\text{mm})}$ Units: $\frac{\text{inch}}{(\text{mm})}$ Units: $\frac{\text{inch}}{(\text{mm})}$ Units: $\frac{\text{inch}}{(\text{mm})}$ 



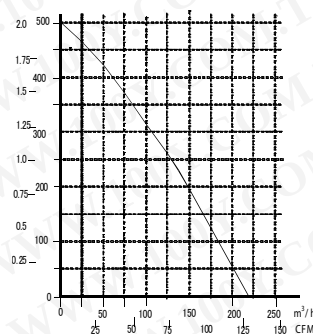
101R057 ($\varnothing 101 \times 57^L$) DC Volt: 24, 48 • CFM Range: 137.1

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



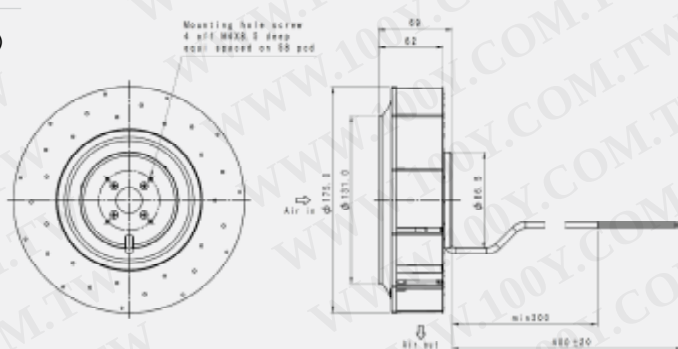
Characteristic Curves



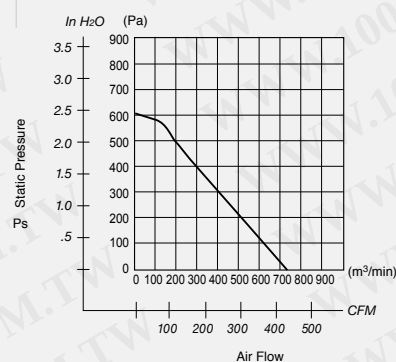
175R069 ($\varnothing 175 \times 69^L$) DC Volt: 24, 48 • CFM Range: 432.6

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



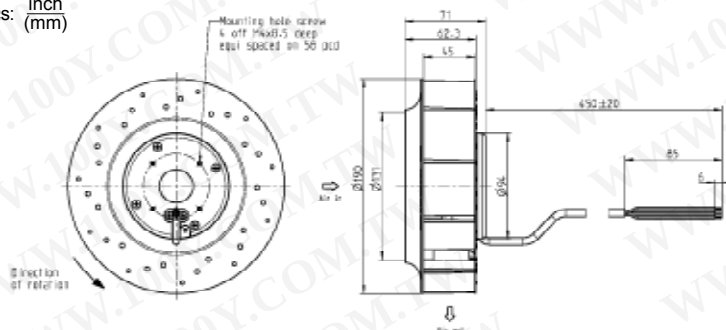
Characteristic Curves



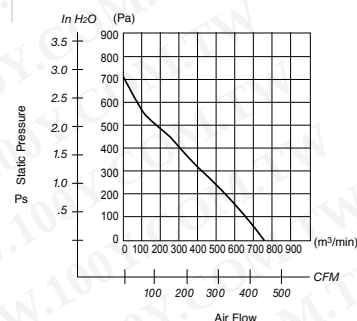
190R071 ($\varnothing 190 \times 71^L$) DC Volt: 24, 48 • CFM Range: 432.0

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



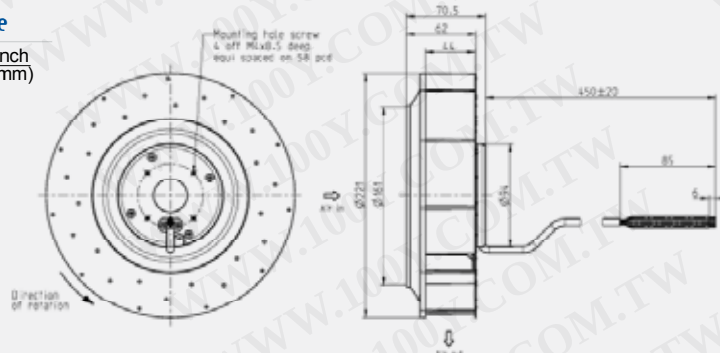
Characteristic Curves



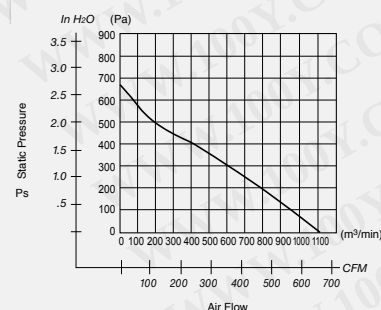
220R071 ($\varnothing 221 \times 71^L$) DC Volt: 24, 48 • CFM Range: 648.6

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



Characteristic Curves

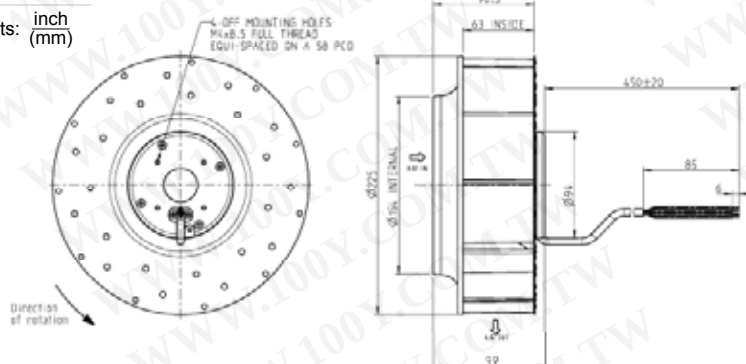




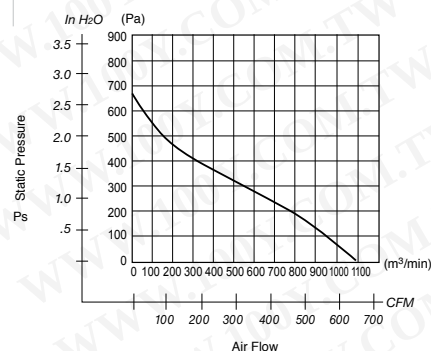
225R099 ($\varnothing 225 \times 99^L$) DC Volt: 24, 48 • CFM Range: 679.2

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



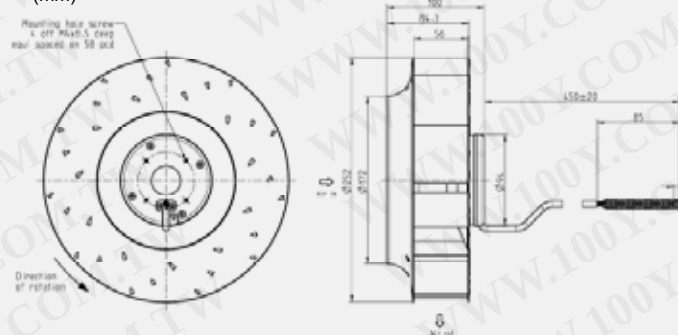
Characteristic Curves



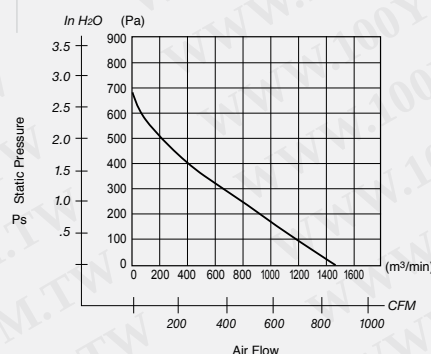
250R100 ($\varnothing 252 \times 100^L$) DC Volt: 24, 48 • CFM Range: 855.7

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



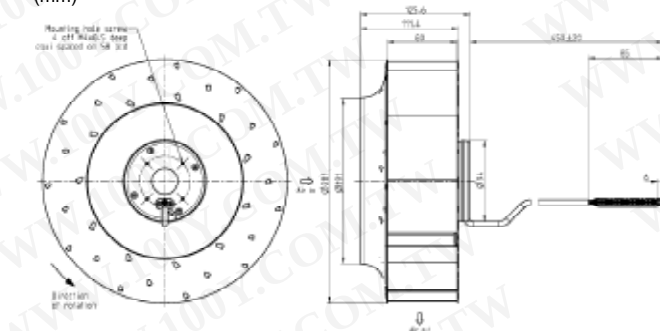
Characteristic Curves



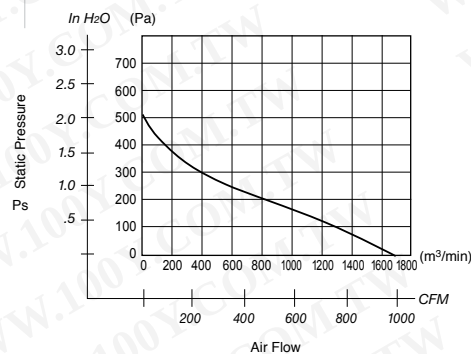
280R125 ($\varnothing 281 \times 125^L$) DC Volt: 24, 48 • CFM Range: 974.6

Outline

Units: $\frac{\text{inch}}{\text{mm}}$



Characteristic Curves

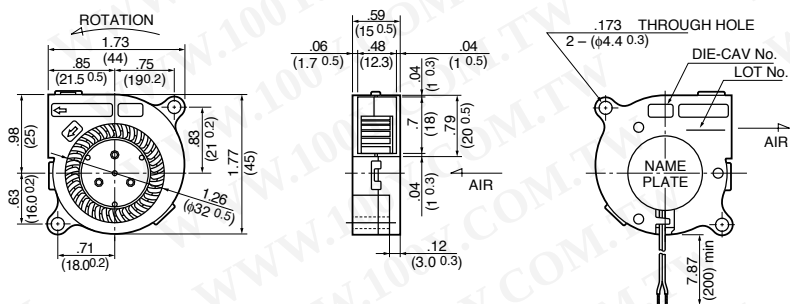




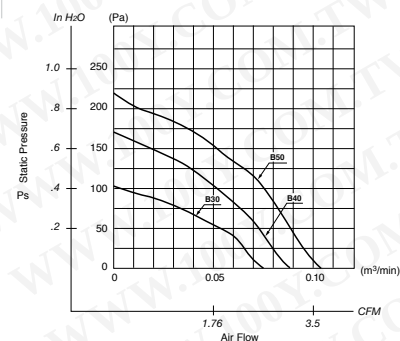
BM4515 (45[□] x 15^L) DC Volt: 12 • CFM Range: 2.6 ~ 3.5

Outline

Units: inch
(mm)



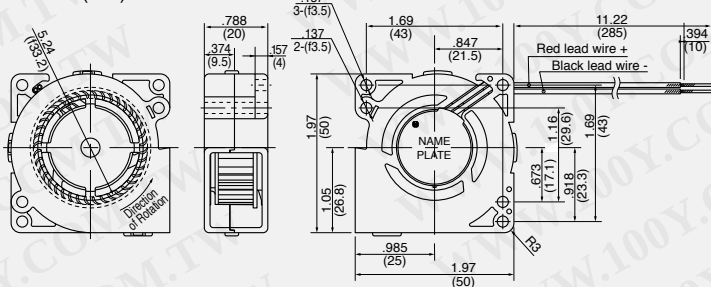
Characteristic Curves



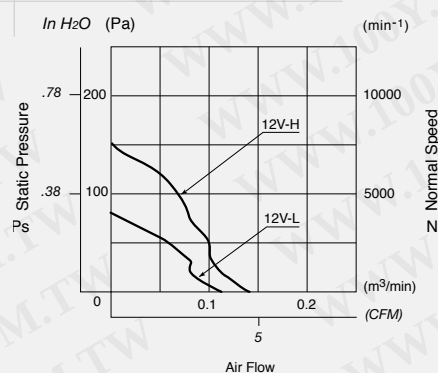
FAL3F (50[□] x 20^L) DC Volt: 5, 12, 24 • CFM Range: 3.95 ~ 4.87

Outline

Units: inch
(mm)



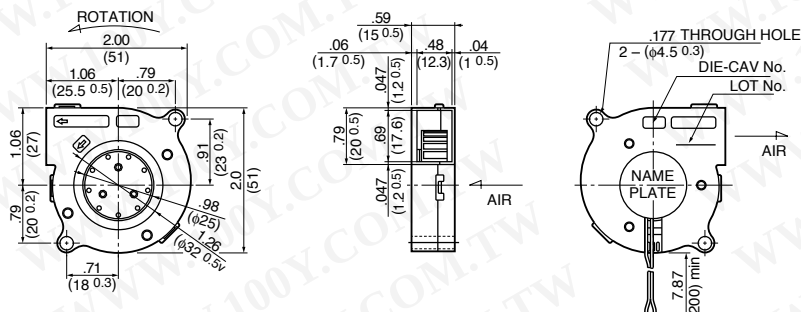
Characteristic Curves



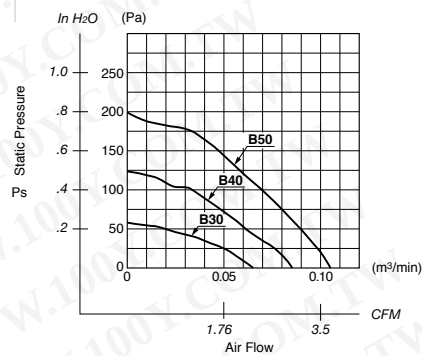
BM5115 (51[□] x 15^L) DC Volt: 12 • CFM Range: 2.1 ~ 3.5

Outline

Units: inch
(mm)



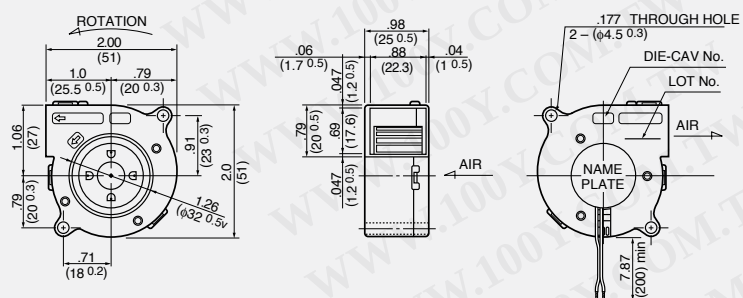
Characteristic Curves



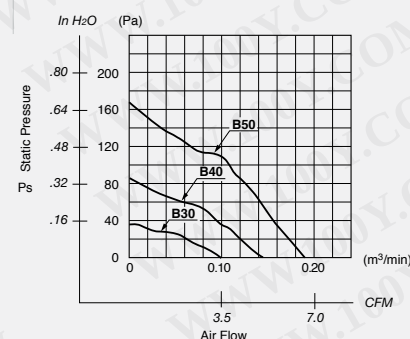
BM5125 (51[□] x 25^L) DC Volt: 12 • CFM Range: 3.5 ~ 6.7

Outline

Units: inch
(mm)



Characteristic Curves

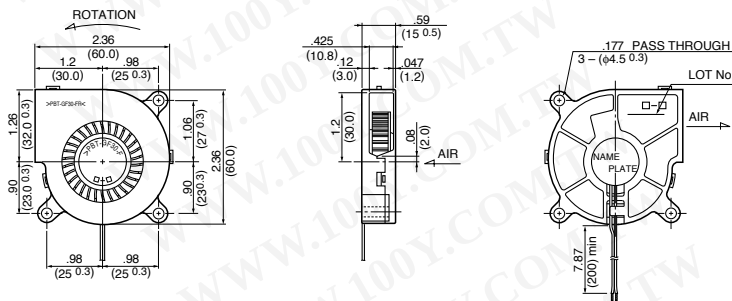




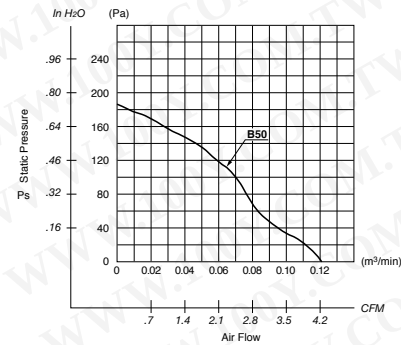
BM6015 (Ø60 x 15^L) DC Volt: 12 • CFM Range: 4.2

Outline

Units: inch (mm)



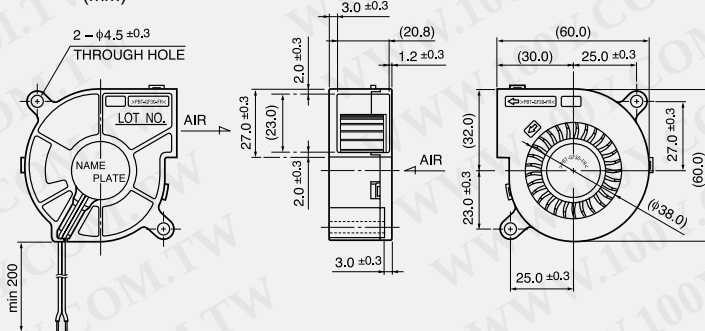
Characteristic Curves



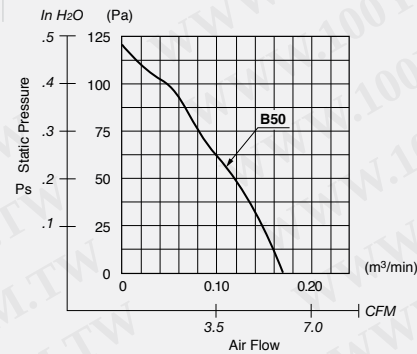
BM6025 (Ø60 x 25^L) DC Volt: 12 • CFM Range: 6.0

Outline

Units: inch (mm)



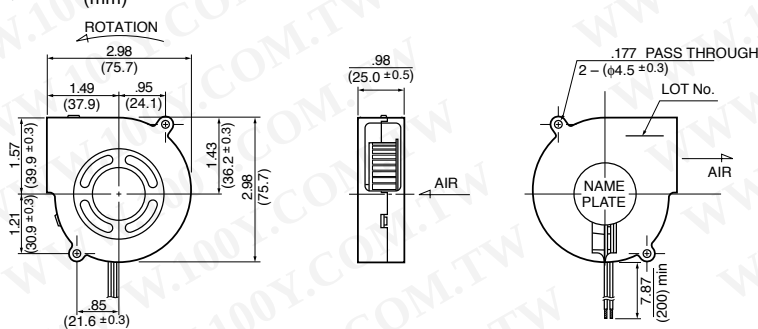
Characteristic Curves



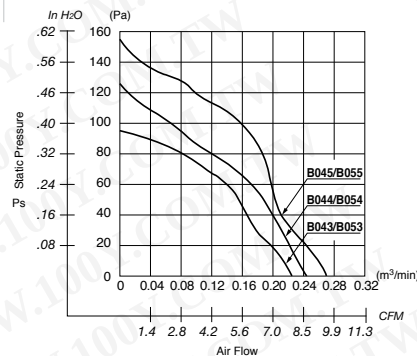
BG0702 (Ø75 x 25^L) DC Volt: 12, 24 • CFM Range: 7.76 ~ 9.50

Outline

Units: inch (mm)



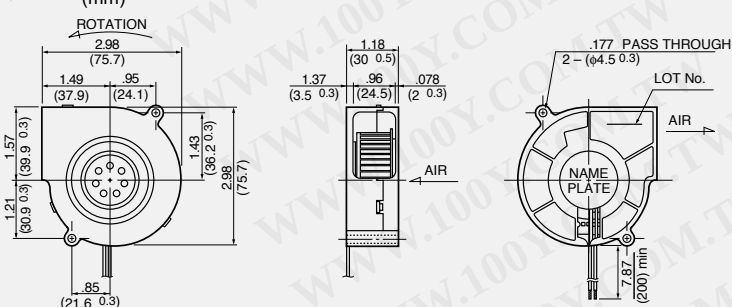
Characteristic Curves



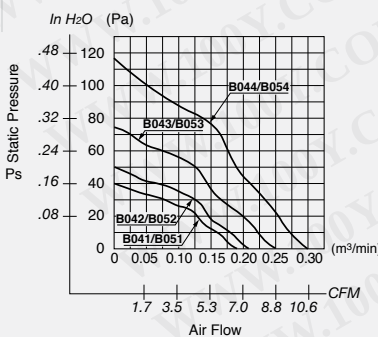
BG0703 (Ø75 x 30^L) DC Volt: 12, 24 • CFM Range: 6.7 ~ 10.6

Outline

Units: inch (mm)

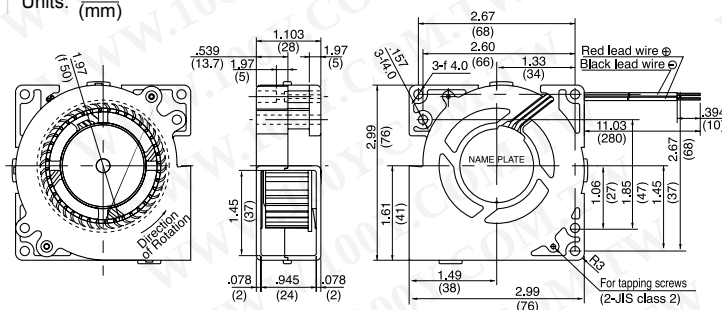


Characteristic Curves

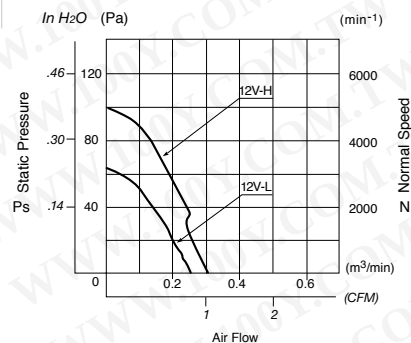


FALF5F (76[□] x 28^L) DC Volt: 12, 24 • CFM Range: 8.83 ~ 10.6

Outline

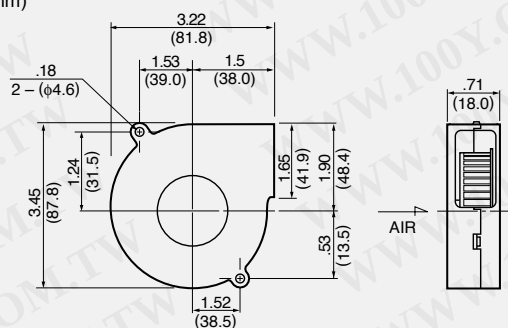
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

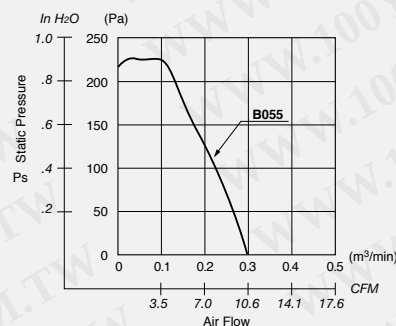


BG0801 (ø80 x 18^L) DC Volt: 24 • CFM Range: 10.2

Outline

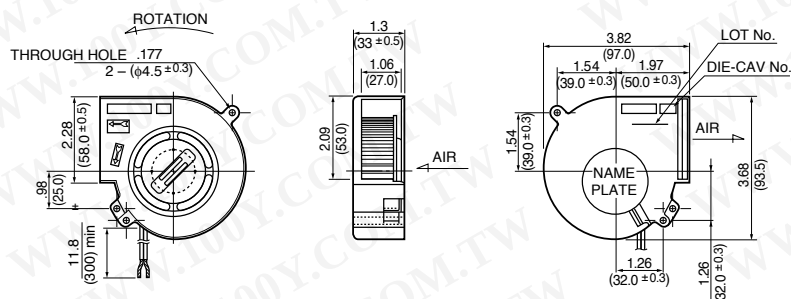
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

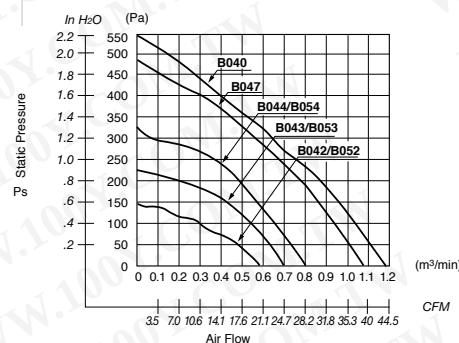


BG0903 (ø95 x 33^L) DC Volt: 12, 24 • CFM Range: 20.5 ~ 42.0

Outline

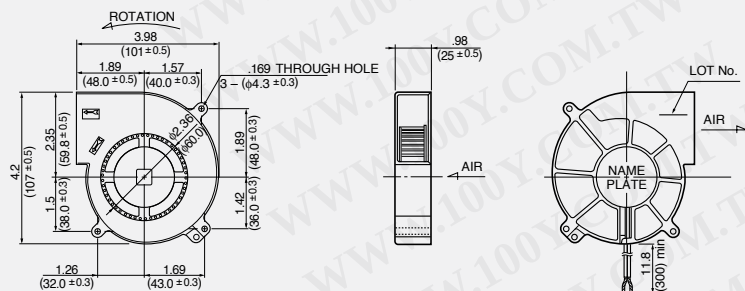
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

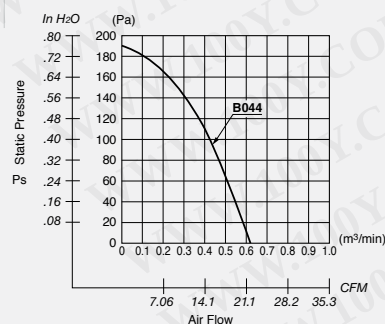


BG1002 (ø100 x 25^L) DC Volt: 12 • CFM Range: 21.9

Outline

Units: $\frac{\text{inch}}{(\text{mm})}$ 

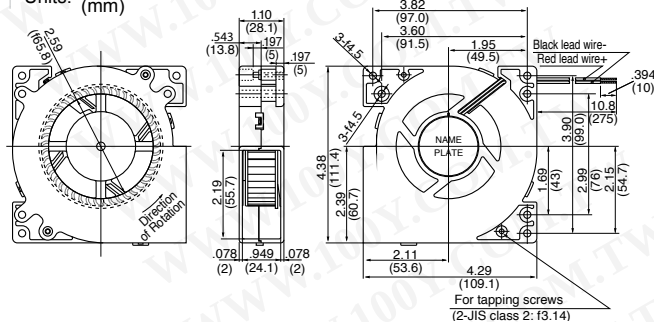
Characteristic Curves



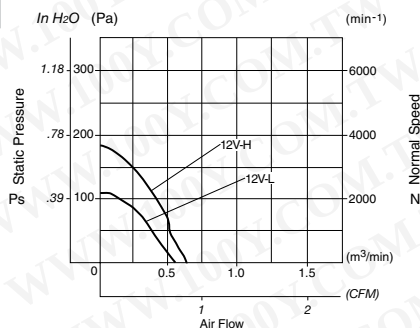


FALF6 (110" x 28.1") DC Volt: 12, 24 • CFM Range: 18.7 ~ 23.7

Outline

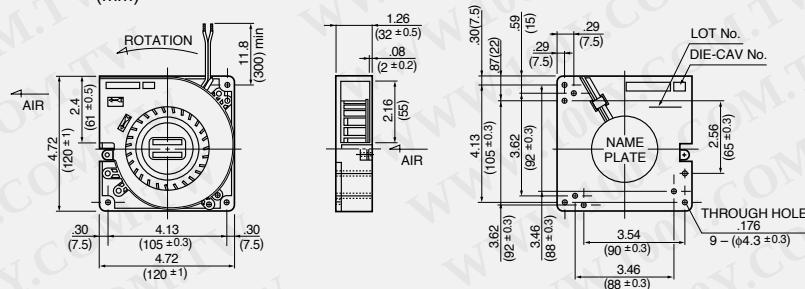
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

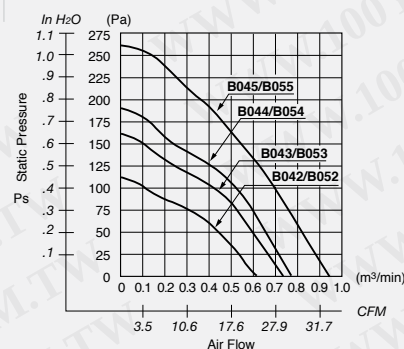


BG1203 (ø120 x 32^L) DC Volt: 12, 24 • CFM Range: 22.2 ~ 33.2

Outline

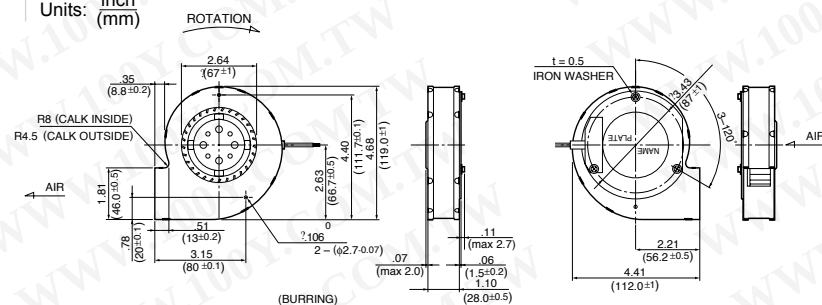
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

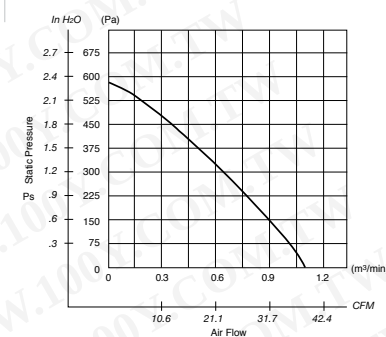


BL4447 (ø119 x 35^L) DC Volt: 12 • CFM Range: 38.8

Outline

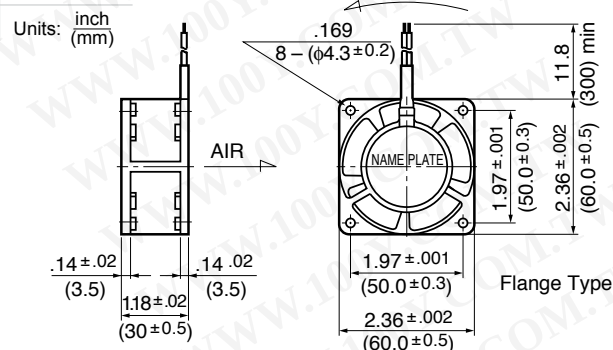
Units: $\frac{\text{inch}}{(\text{mm})}$ 

Characteristic Curves

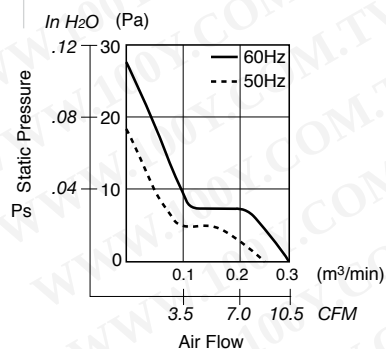


2412PS (60" x 30") AC Volt: 100, 115 • CFM Range: 7.0 ~ 9.1

Outline

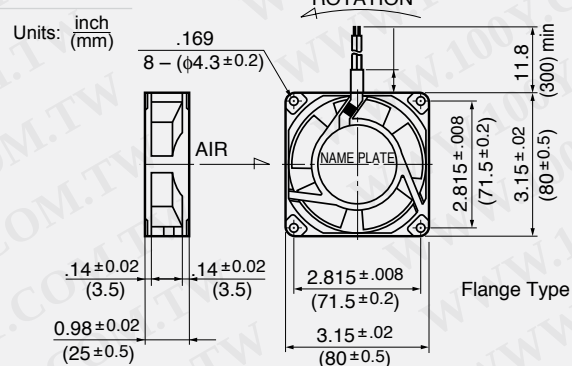


Characteristic Curves

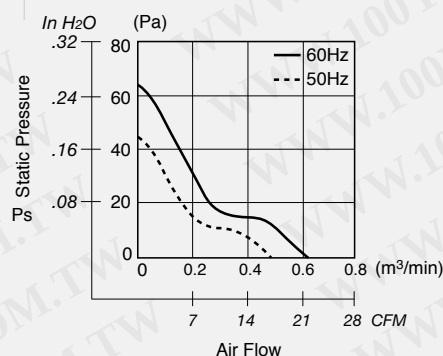


3110PS (80" x 25") AC Volt: 115 • CFM Range: 16.2 ~ 19.7

Outline

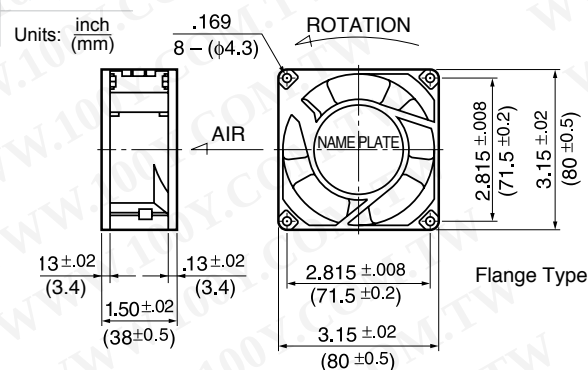


Characteristic Curves

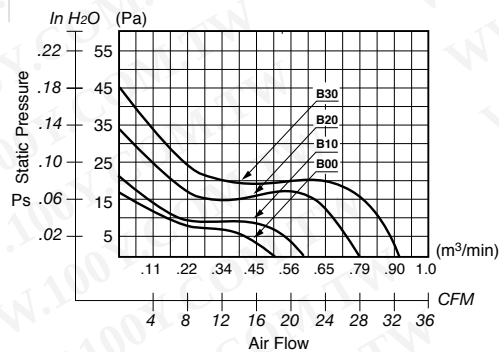


3115FS (80" x 38") AC Volt: 115, 230 • CFM Range: 18.0 ~ 33.0

Outline

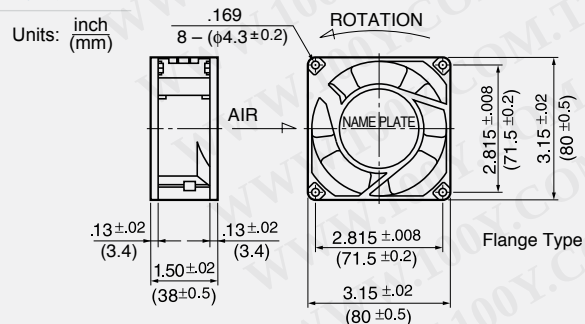


Characteristic Curves

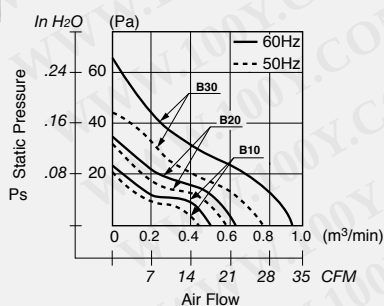


3115PS (80" x 38") AC Volt: 115, 230 • CFM Range: 17.6 ~ 32.0

Outline



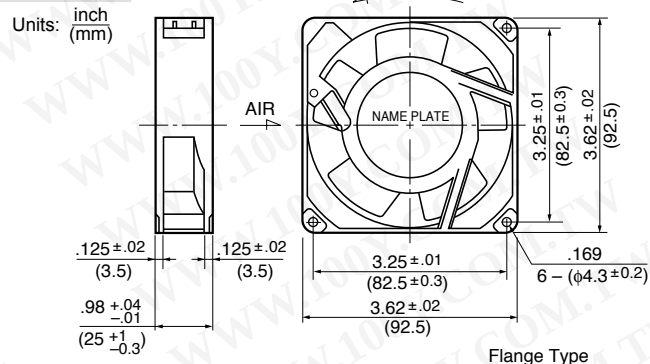
Characteristic Curves



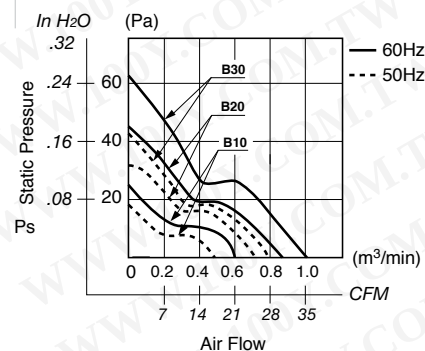


3610PS (92[□] x 25^L) AC Volt: 115, 230 • CFM Range: 16.0 ~ 34.5

Outline

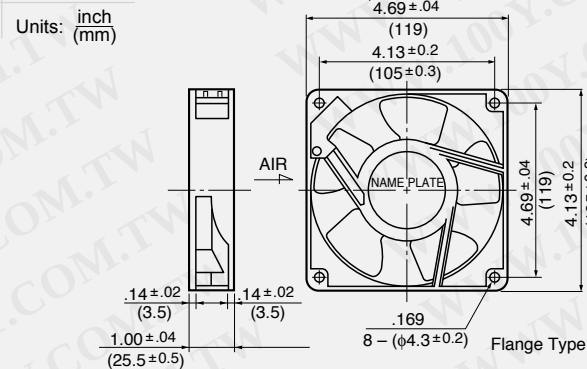


Characteristic Curves

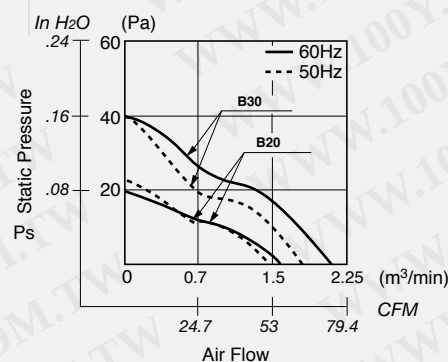


4710PS (119[□] x 25^L) AC Volt: 115, 230 • CFM Range: 49.4 ~ 70.6

Outline

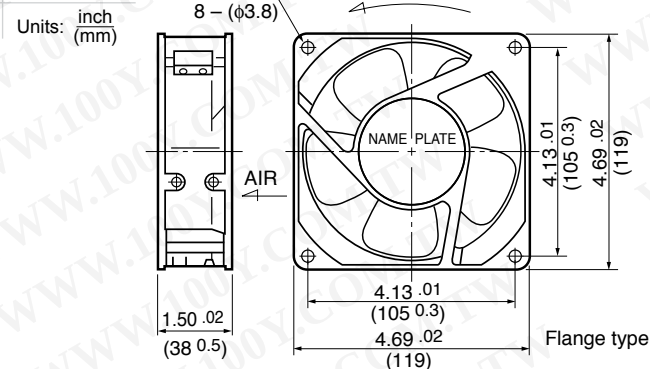


Characteristic Curves



4715FS (119[□] x 38^L) AC Volt: 115, 230 • CFM Range: 55.0 ~ 110.0

Outline

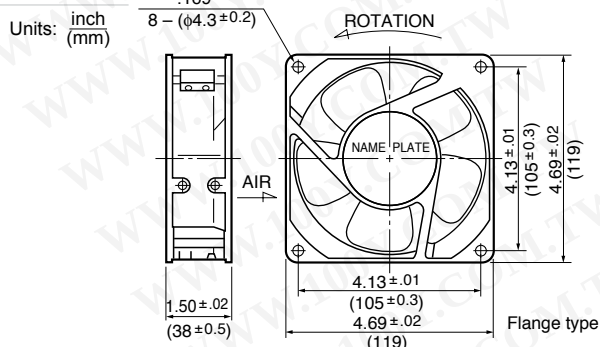


Characteristic Curves

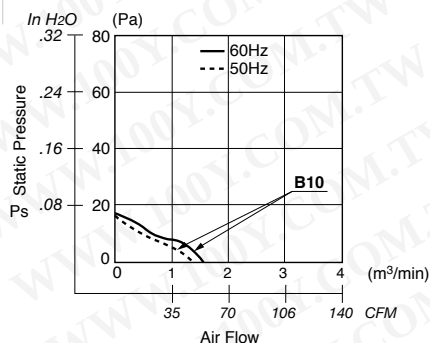
CURVE
NOT AVAILABLE

4715MS (119[□] × 38^L) AC Volt: 115, 230 • CFM Range: 45.9 ~ 102.0

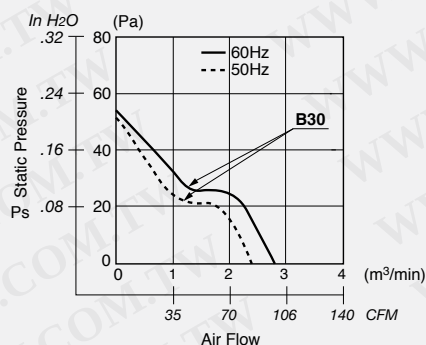
Outline



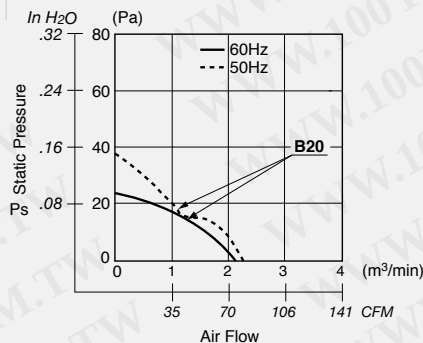
Characteristic Curves



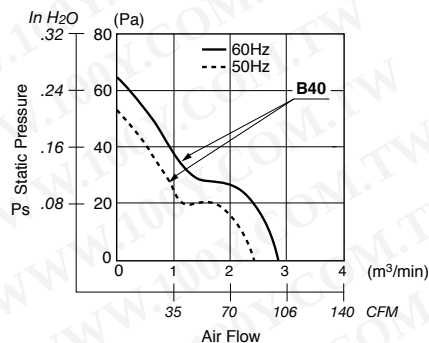
Characteristic Curves



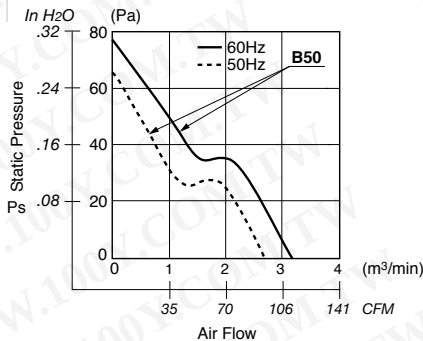
Characteristic Curves



Characteristic Curves

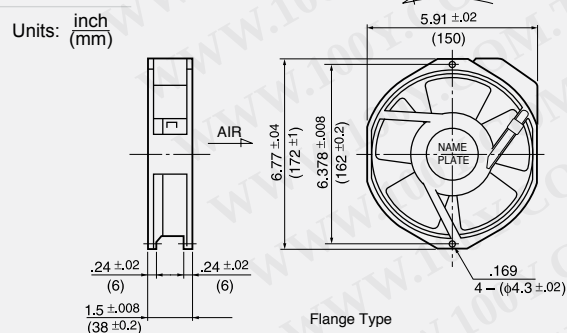


Characteristic Curves

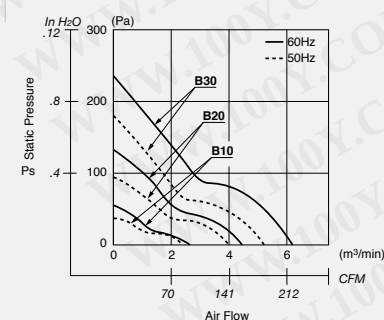


5915PC (150 × 172 × 38^L) AC Volt: 115, 230 • CFM Range: 84.7 ~ 212.0

Outline



Characteristic Curves



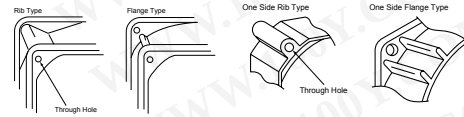


Part Numbering System

- Frame Size
 10:25mm
 12:30mm
 14:35mm
 16:40mm
 20:50mm
 21:52mm
 24:60mm
 28:70mm
 31:80mm
 36:92mm
 47:119mm
 50:127mm
 59:150mm
 68:172mm
- Overall Length (Thickness)
 04:10mm
 06:15mm
 08:20mm
 10:25mm
 12:32mm
 15:38mm
 20:50mm
- Series
 P Series
 M Series
 N Series
 K Series
 H Series
 S Series
 F Series
 R Series
- Motor Function
 Brushless Type DCM
- Input Voltage
 O: Standard Current
 C: Special Current
 D~Z: Special Current (A.B.O. are not used)
- Termination
 W: Lead Wires
 T: Terminal
 (Terminal option on 3610KL and 4715KL Series)

- | | | | | | | | | | | | | | |
|-----------|-----------|----------|----------|---|-----------|----------|---|----------|----------|----------|---|-----------|------------|
| 24
(1) | 10
(2) | M
(3) | L
(4) | - | 04
(5) | W
(6) | - | B
(7) | 1
(8) | 0
(9) | - | X
(10) | 00
(11) |
|-----------|-----------|----------|----------|---|-----------|----------|---|----------|----------|----------|---|-----------|------------|
- Bearing
 B: Ball Bearing
 S: Sleeve Bearing
 - Speed
 1<2<3<4<5<6<7<8
 low high
 - Special Control Function
 0: Standard Type
 9: Sensor Type
 7: Temperature Detecting Variable Speed Type/PWM Control Type
 - Temperature Detecting Variable Speed Type/Sensor Type
 5: 2-Speed Type/Sensor Type
 8: 2-Speed Type
 - Product Number

Item	Classification	Mounting Style
L:	Standard Model	Rib Type
P:	Standard Model	Flange Type
B:	Standard Model	Rib Type
E:	Standard Model	Flange Type
G:	Standard Model	Rib Type
D:	Standard Model	Flange Type
T:	Value Model	Rib Type
 - Value Model
 S: Value Model
 C: Value Model
 F: Value Model
 J: Value Model
 H: Value Model
 M: Value Model
 V: Value Model
 X: Vented Casing
 - Flange Type
 Rib Type
 Flange Type
 One Side Rib Type
 One Side Flange Type
 Rib Type
 Flange Type
 Flange Type
 - Individual Specifications
 Standard
 00: Standard
 01~99: Custom
 Sensor Type
 00: Locked Rotor Alarm Signal (Standard)
 01~49: Locked Rotor Alarm Signal (Custom)
 50: Tachometer Signal (Standard)
 51~99: Tachometer Signal (Custom)



BM Series Part Numbering System

- Series
 BM Series
- Size
 45: 45mm
 51: 51mm
 60: 60mm
- Thickness
 15: 15mm
 25: 25mm
- Input Voltage
 O: Standard Current
 C: Special Current
 D~Z: Special Current (A.B.O. are not used)
- Termination
 Lead Wire
- Bearing
 B: Ball Bearing
 S: Sleeve Bearing
- Speed
 1<2<3<4<5
 low high

- | | | | | | | | | | | | | |
|-----------|-----------|-----------|---|-----------|----------|---|----------|----------|----------|---|----------|------------|
| BM
(1) | 51
(2) | 15
(3) | - | 04
(4) | W
(5) | - | B
(6) | 3
(7) | 0
(8) | - | L
(9) | 00
(10) |
|-----------|-----------|-----------|---|-----------|----------|---|----------|----------|----------|---|----------|------------|
- Special Control Function
 0: Standard Type
 9: Sensor Type
 8: 2-Speed Type
 7: Temperature Detecting Variable Speed Type/PWM Control Type
 6: Temperature Detecting Variable Speed Type/Sensor Type
 5: 2-Speed Type/Sensor Type
 - Classification
 L-Standard Model/Rib Type
 T-Value Model/Rib Type
 - Individual Specifications
 Standard Type
 00: Standard
 01~99: Custom
 Sensor Type
 00: Locked Rotor Alarm Signal (Standard Type)
 01~49: Locked Rotor Alarm Signal (Custom Type)
 50: Tachometer Signal (Standard Type)
 51~99: Tachometer Signal (Custom Type)

BG Series Part Numbering System

- Series
 BG Series
- Size
 07: 75mm
 08: 80mm
 09: 95mm
 10: 100mm
 12: 120mm
- Thickness
 01: 18mm
 02: 25mm
 03: 30~33mm
- Bearing
 B: Ball Bearing
 S: Sleeve Bearing
- Input Voltage
 O: Standard Current
 C: Special Current
 D~Z: Special Current (A.B.O. are not used)
- Speed
 1<2<3<4<5
 low high
- Special Control Function
 0 0 0
 A B C
- Special Control Function
 O: Fix Speed Type
 2: 2-Speed Type
 V: Temperature Detecting Variable Speed Type
 P: PWM Control Type
- Thermistor Mounting Position
 O: No Thermistor
 T: Thermistor On PCB
- Output Signal
 O: No Signal
 L: Locked Rotor Alarm Signal
 S: Tachometer Signal
- Product Number
 00: Standard
 01~: Customized Standard
 T0: Standard Value
 T1~: Customized Value

Part Numbering System

- Frame Size
 24: 60mm
 31: 80mm
 36: 92mm
 47: 119mm
 59: 150mm
- Frame Thickness
 10: 25mm
 12: 30mm
 15: 38mm
- Series
 P Series
 M Series
 F Series
- Motor Function
 S: Shaded Pole
 C: Capacitor Run
- Input Voltage
 100V Class
 10: 100V
 12: 115V
 200V Class
 20: 200V
 22: 220V
 23: 230V
 24: 240V
- Termination
 W: Lead Wires
 T: Terminal
- Bearing
 B: Ball Bearing
- Speed
 1<2<3<4<5
 low high
- Protection
 0: Impedance Protected
 A: Thermal Protected
 (including 5915PC B30 only)
- Product Number
 A: Standard 115V, 230V & 240V
 B: Standard 100V, 200V & 220V
 D: Custom Casing 115V-230V
 K: Frameless
- Individual Specification
 00: Standard
 01~99: Custom

4715MS (119[□] x 38^L)

EMINEBEA.COM

NMB-MAT

General Specifications

Allowable Ambient Temperature Range:

- 10°C ~ +70°C (Operating)
- 40°C ~ +70°C (Storage)
- (non-condensing environment)

Motor Structure: Shaded Pole Induction Motor

Motor Protection: Impedance Protection

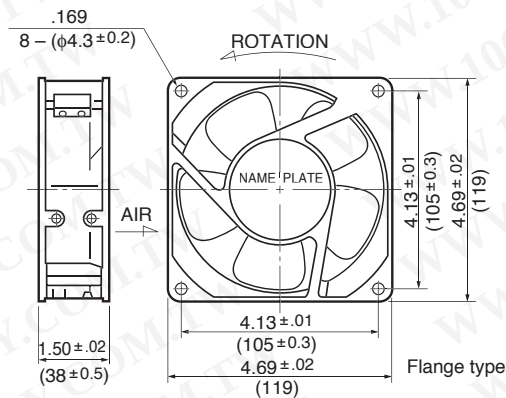
Expected Life

Failure Rate: 10%

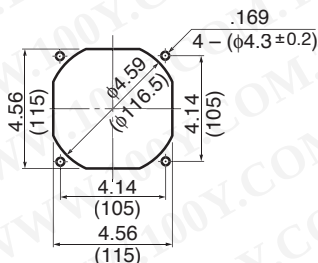
25°C 50,000 Hours

Outline

Units: inch
(mm)



Panel Cut-outs

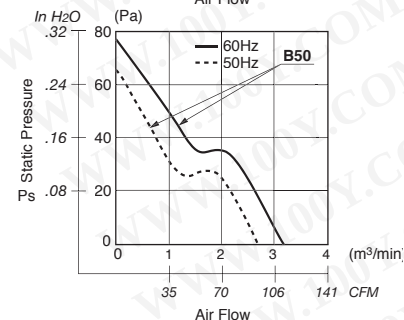
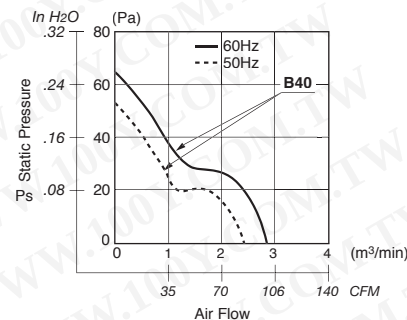
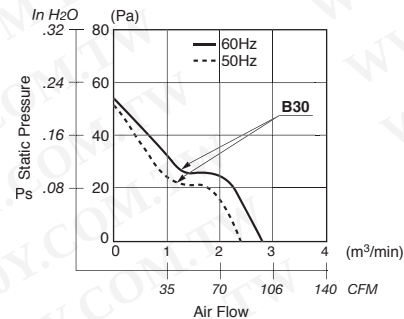
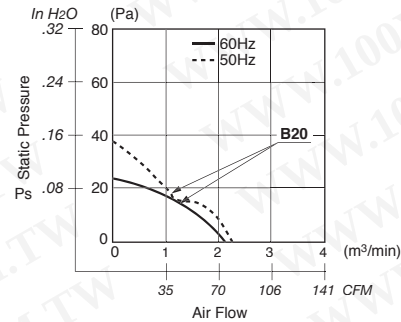
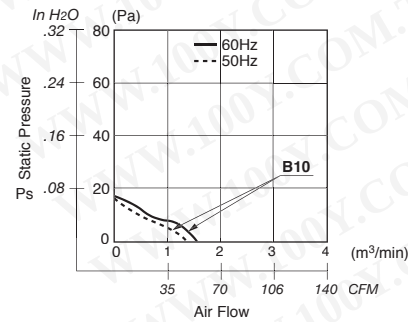


INLET SIDE / OUTLET SIDE

Material

- Casing : Aluminum
- Impeller : Polycarbonate (Glass Fiber-Containing)
- Bearing : Ball Bearings
- Lead Wire : AWG22, UL3266, CSA CLR52
- or Terminal : Faston #110 or equivalent

Characteristic Curves





4715MS (119[□] x 38^L)



NMB-MAT

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Specifications

MODEL	Rated Voltage	Frequency	Starting Voltage	Current	Input Power	Speed	Max. Air Flow		Max. Static Pressure		Noise	Mass
	(V)	(Hz)	(V)	(A)* ¹	(W) ^{+10% -20%}	(min ⁻¹)* ³	CFM* ²	(m ³ /min)* ³	in H ₂ O	(Pa)* ³	(dB)* ²	(g)
4715MS-10T-B50-B00	100	50	65	0.270	15.0	2600	88.25	2.50	.259	64.6	37.0	550
	100	60	65	0.230	14.0	2900	102.0	2.90	.306	76.4	41.0	550
4715MS-12T-B50-A00	115	50	65	0.250	15.5	2600	88.2	2.50	.259	64.6	37.0	550
	115	60	65	0.210	14.5	2900	102.0	2.90	.306	76.4	41.0	550
4715MS-20T-B50-B00	200	50	130	0.140	15.0	2600	88.25	2.50	.259	64.6	37.0	550
	200	60	130	0.120	13.0	2900	102.0	2.90	.306	76.4	41.0	550
4715MS-22T-B50-B00	220	50	145	0.120	14.0	2600	88.25	2.50	.255	63.7	37.0	550
	220	60	145	0.100	13.0	2900	102.0	2.90	.302	75.4	41.0	550
4715MS-23T-B50-A00	230	50	175	0.120	15.0	2600	88.2	2.50	.255	63.7	37.0	550
	230	60	175	0.100	14.0	2900	102.0	2.90	.283	70.5	41.0	550
4715MS-24T-B50-A00	240	50	140	0.110	14.0	2600	88.25	2.50	.255	63.7	37.0	550
	240	60	140	0.100	13.0	2900	102.0	2.90	.363	65.6	41.0	550
4715MS-10T-B40-B00	100	50	65	0.250	15.0	2450	85.0	2.40	.204	50.9	35.0	550
	100	60	65	0.220	13.0	2750	95.0	2.70	.251	62.7	39.0	550
4715MS-12T-B40-A00	115	50	75	0.220	15.0	2450	85.0	2.40	.204	50.9	35.0	550
	115	60	75	0.190	13.0	2750	95.0	2.70	.259	64.6	39.0	550
4715MS-20T-B40-B00	200	50	130	0.130	15.0	2450	85.0	2.40	.204	50.9	35.0	550
	200	60	160	0.110	13.0	2750	95.0	2.70	.255	63.7	39.0	550
4715MS-22T-B40-B00	220	50	145	0.110	14.0	2450	85.0	2.40	.216	53.9	35.0	550
	220	60	145	0.100	12.0	2750	95.0	2.70	.255	63.7	39.0	550
4715MS-23T-B40-A00	230	50	175	0.120	15.0	2450	85.0	2.40	.216	53.9	35.0	550
	230	60	175	0.100	13.0	2750	95.0	2.70	.255	63.7	39.0	550
4715MS-24T-B40-A00	240	50	140	0.100	13.0	2450	85.0	2.40	.204	50.9	35.0	550
	240	60	140	0.080	12.0	2750	95.0	2.70	.236	58.8	39.0	550
4715MS-10T-B30-B00	100	50	65	0.190	11.0	2400	81.0	2.30	.200	49.9	34.0	550
	100	60	65	0.170	10.0	2600	88.2	2.50	.204	50.9	37.0	550
4715MS-12T-B30-A00	115	50	75	0.160	11.0	2400	81.0	2.30	.200	49.9	34.0	550
	115	60	75	0.140	10.0	2600	88.2	2.50	.200	49.9	37.0	550
4715MS-20T-B30-B00	200	50	130	0.090	10.0	2400	81.0	2.30	.193	48.0	34.0	550
	200	60	130	0.080	10.0	2600	88.2	2.50	.185	46.0	37.0	550
4715MS-22T-B30-B00	220	50	145	0.090	11.0	2400	81.0	2.30	.197	49.0	34.0	550
	220	60	145	0.080	10.0	2600	88.2	2.50	.189	47.0	37.0	550
4715MS-23T-B30-A00	230	50	175	0.100	12.0	2400	81.0	2.30	.197	49.0	34.0	550
	230	60	175	0.080	11.0	2600	88.2	2.50	.208	51.9	37.0	550
4715MS-24T-B30-A00	240	50	140	0.090	12.0	2400	81.0	2.30	.197	49.0	34.0	550
	240	60	140	0.080	11.0	2600	88.2	2.50	.204	50.9	37.0	550
4715MS-10T-B20-B00	100	50	65	0.130	8.0	2100	76.5	2.00	.141	35.2	32.0	550
	100	60	65	0.120	8.0	1950	67.0	1.90	.098	24.5	30.0	550
4715MS-12T-B20-A00	115	50	75	0.100	7.0	2100	70.6	2.00	.141	35.2	32.0	550
	115	60	75	0.100	7.0	1950	67.0	1.90	.098	24.5	30.0	550
4715MS-20T-B20-B00	200	50	130	0.060	7.0	2100	70.6	2.00	.129	32.3	32.0	550
	200	60	130	0.060	7.0	1950	67.0	1.90	.082	20.5	30.0	550
4715MS-22T-B20-B00	220	50	145	0.060	7.0	2100	70.6	2.00	.125	31.3	32.0	550
	220	60	145	0.060	7.0	1900	67.0	1.90	.078	19.6	30.0	550
4715MS-23T-B20-A00	230	50	175	0.060	7.5	2100	70.6	2.00	.141	35.2	32.0	550
	230	60	175	0.060	7.5	1900	67.0	1.90	.086	21.5	30.0	550
4715MS-24T-B20-A00	240	50	175	0.060	8.0	2100	70.6	2.00	.153	38.2	32.0	550
	240	60	175	0.060	8.0	1900	67.0	1.90	.098	24.5	30.0	550
4715MS-10T-B10-B00	100	50	65	0.110	7.0	1350	45.9	1.30	.066	16.6	27.0	550
	100	60	65	0.110	6.5	1450	49.4	1.40	.066	16.6	28.0	550
4715MS-12T-B10-A00	115	50	75	0.090	6.0	1350	45.9	1.30	.062	15.6	27.0	550
	115	60	75	0.080	5.5	1450	49.4	1.40	.066	16.6	28.0	550
4715MS-20T-B10-B00	200	50	130	0.055	6.0	1350	45.9	1.30	.059	14.7	27.0	550
	200	60	130	0.050	5.0	1450	49.4	1.40	.059	14.7	28.0	550
4715MS-22T-B10-B00	220	50	145	0.050	6.0	1350	45.9	1.30	.059	14.7	27.0	550
	220	60	145	0.040	5.5	1450	49.4	1.40	.059	14.7	28.0	550
4715MS-23T-B10-A00	230	50	175	0.050	6.5	1350	45.9	1.30	.059	14.7	27.0	550
	230	60	175	0.045	6.0	1450	49.4	1.40	.059	14.7	28.0	550
4715MS-24T-B10-A00	240	50	175	0.050	6.5	1350	45.9	1.30	.062	15.6	27.0	550
	240	60	175	0.045	6.0	1450	49.4	1.40	.066	16.6	28.0	550

Rotation: Counterclockwise

Airflow Outlet: Air Out Over Struts

*1: Maximum Values in Free Air

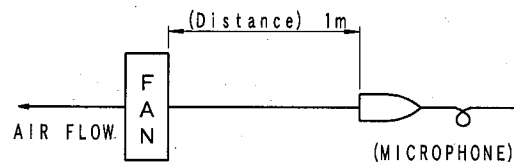
*2: Average Values in Free Air

*3: Minimum Values in Free Air

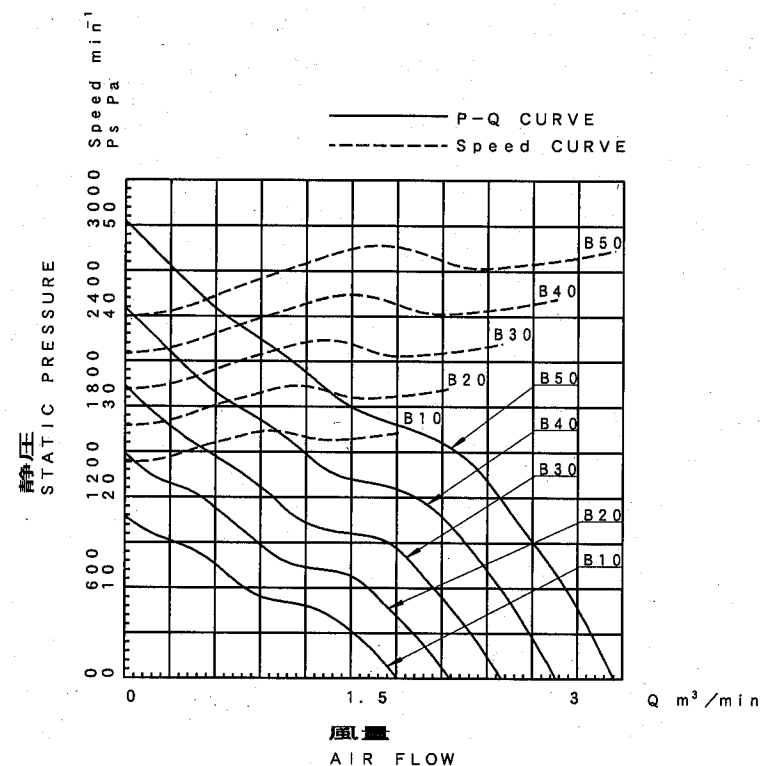
項目 (Items)		諸元 (Description)				
モーターの種類 (Motor Type)		DC ブラシレスモーター (DC Brushless Motor)				
定格 (Rating)						
定格時間 (Duty)		連続 (Continuous)				
定格電圧 (Rating Voltage) [V]		24				
対象型式 (Object Model)						
風量区分 (Air Flow Class)		B10	B20	B30	B40	B50
使用電圧範囲 (Operating Voltage) [V]		10 ~ 27.6				10 ~ 26
定格回転速度 ☆3 ☆4 (Speed) [min ⁻¹]	標準値 (Average)	1600	1900	2200	2500	2800
	最小値 (Minimum)	1400	1700	2000	2300	2600
最大風量 ☆1 ☆4 (Max Air Flow) [m ³ /min]	標準値 (Average)	1.80	2.15	2.50	2.85	3.25
	最小値 (Minimum)	1.50	1.85	2.20	2.55	2.90
最大静圧 ☆2 ☆4 (Max Static Pressure) [Pa]	標準値 (Average)	17.9	24.8	32.3	40.9	50.5
	最小値 (Minimum)	13.1	18.8	25.9	33.8	42.6
定格電流 ☆3 ☆4 (Current) [A]	標準値 (Average)	0.08	0.10	0.15	0.22	0.29
	最大値 (Maximum)	0.10	0.13	0.20	0.29	0.38
定格入力 ☆3 ☆4 (Input Power) [W]	標準値 (Average)	1.92	2.40	3.60	5.28	6.96
	最大値 (Maximum)	2.40	3.12	4.80	6.96	9.12
騒音 (Acoustical Noise) [dB] ☆3 ☆4		27.0	31.0	35.0	38.5	41.5

* 測定条件 (Measuring Conditions)

- 無響音室内で、かつ障害物のない大気中において測定する。
Measurement with in anechoic test chamber under free air condition.
- 測定機は、モーターの吸込側より 1 m の距離に位置する。
Microphone is placed at a distance of 1m on the axis of air intake side.
- 暗騒音は 16 dB 以下のこと。
Chamber back ground noise max 16dB
- 騒音は標準回転速度時。
Acoustical Noise at Average speed



特性曲線 (Performance Curves)



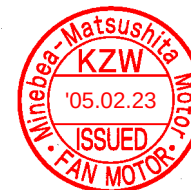
* 型式説明 (Description of Model Number)

4710KL-05W-BX0-B00

X : 風量区分 (Air Flow Class) 1<2<3<4<5

* NOTE

- ☆1 静圧 "0" の時 (At 0 Static Pressure)
- ☆2 風量 "0" の時 (At 0 Air Flow)
- ☆3 フリーエア時 (At Free Air)
- ☆4 室温 25℃において定格電圧印加時 (At Rating Voltage, At 25℃)



				ミネベア・松下モータ 株式会社 Minebea-Matsushita Motor Corporation				単位 UNIT mm 尺度 SCALE	材質 MATERIAL 表面粗サ SURF. ROUGH.	作成日 DATE 2002 ' 09 ' 11 品名 DESCRIPTION AUTO RESTART TYPE DC BRUSHLESS FAN		
				APPROVED	CHECKED	DRAWN						
				OTK	NKZW	YSD	一般公差 TOL	寸法 L	公差	熱処理 HEAT TREAT	品番 PART NO. (MODEL NO.) 4710KL-05W-BX0-B00	葉番 SHEET 1 / 3
								L ≤ 4	±0.1			
								4 < L ≤ 16	±0.2			
								16 < L ≤ 63	±0.3			
								63 < L ≤ 250	±0.5	表面処理 FINISH	図番 DRAWING NO. 4710KL-05W-BX0-B00	改訂 REV. A
								250 < L ≤ 1000	±0.8			
								角度 DEG	±0.5			
△ 05/02/15 ECN80168/A ABE TKTN												
符号 MARK	日付 DATE	変更事由 REASON	ECN NO.	担当 ENGINEER	承認 APPROVED							

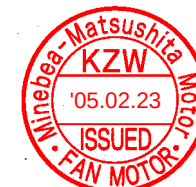
項目 (Items)	諸元 (Description)
規格 (Standard)	
絶縁抵抗 (Insulation Resistance)	DC 500V メガーにて 10MΩ 以上 (min 10MΩ by DC 500V Megger) フレームとリード線間 (Between Frame and (+) Terminal)
絶縁耐圧 (Dielectric Withstand Voltage)	AC 700V 1s ☆5 フレームとリード線間 (Between Frame and (+) Terminal)
期待できる寿命 (故障率10%) (Life Expectation (L10 Life))	25℃にて 100,000 時間 (100,000h at 25℃) 寿命とは、定格電圧印加時の電流値及び回転速度の どちらかが、以下の様になった状態とする 電流値 : 初期値 +15% 以上 回転速度 : 初期値 -15% 以下 (The motor life is decided as follows Current: more than +15% of initial value Speed: less than -15% of initial value)
許容環境温度範囲 (Allowable Ambient Temperature)	B50 Class : -10℃~+60℃ (Operating) B10~B40 Class : -10℃~+70℃ (Operating) ☆6 All Class : -40℃~+70℃ (Storage) ☆6 実用上さしつかえない状態で結露無きこと (No dew formation at operating and storage condition)
質量 (Mass: g)	180
保護方式 (Protection)	自動復帰方法 (Auto Restart) 逆接続防止 (Polarity Protection) ☆7
耐振動 (JIS C 0040 に準拠) (Vibration Test)	振幅 (Amplitude): 1.5mm 周波数 (Frequency): 10~55Hz X, Y, Z 3 方向各 1 時間 (1h in 3 Directions, "X, Y, Z" Each)
耐衝撃 (JIS C 0041 に準拠) (Shock Test)	加速度 (Acceleration of Gravity): 1000m/s ² 作用時間 (Time): 6ms X, Y, Z 3 方向各 1 回 (1 time in 3 Directions, "X, Y, Z" Each)
絶縁階級 (Insulation Class)	E 種 (UL: Class A)
回転方向 (Rotation)	銘板側から見て時計方向 (CW Viewed From Name Plate Side)
風吹き出し方向 (Air Flow Direction)	銘板側 (Air Out Over the Struts)
UL File No.	E89936
CSA File No.	LR65829
VDE File No.	1507300
生産国 (Producing Country)	JAPAN, CHINA

* NOTE

- ☆5 AC 500V、1 分を保証 (Guarantee AC 500V 1 min)
- ☆6 但し100 時間保存の24 時間常温放置にて実用上問題無きこと。
(To be free of defects on practical use after 100h of stored at -40℃~+70℃ and 24h to ambient humidity.)
- ☆7 使用電圧範囲内において赤線および、黒線を逆接続されても異常無きこと。
(Motor withstands reverse connection for positive and negative leads.)

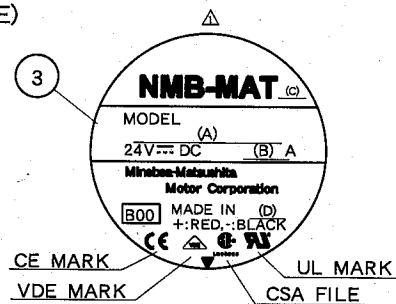
* 特記事項 (Additional Notice)

- 本仕様書に記載されていない項目で特に決める必要のある項目は事前に御連絡ください。
Any modification to these specifications requested by customer shall be negotiated between the manufacturer and the customer.
- 当仕様書満足範囲において性能向上等の為、部品等一部変更する場合があります。
The manufacturer reserves the right to change design, parts or manufacturing processes in order to improve the performance of the fan motor.
- 保管はできるだけ6 ヶ月以内とし、高温多湿の場所は避けてください。
Storage area should not be in high temperature, high humidity environment, and storage term shall be within 6 months as much as possible.
- 定格電圧において72 時間拘束されても焼損しません。
In case of locked rotor condition, the current shutdown feature of the fan motor protects the motor for 72h at the rated voltage.
- 納入品単体の故障により誘発される損害はご容赦いただきます。
We shall be free from compensation for any damage induced due to failure of fan motor.



				ミネベア・松下モータ 株式会社 Minebea-Matsushita Motor Corporation		単位 UNIT mm 尺度 SCALE		材質 MATERIAL		作成日 DATE 2002 ' 09 ' 11	
				APPROVED		CHECKED		DRAWN		品名 DESCRIPTION AUTO RESTART TYPE DC BRUSHLESS FAN	
△ ¹ 05/02/15 ECN80168/A				ABE		TKTN		寸法 L 公差		品番 PART NO. (MODEL NO.)	
符号 MARK				日付 DATE		変更事由 REASON		ECN NO.		2 / 3	
				担当 ENGINEER		承認 APPROVED		熱処理 HEAT TREAT		4710KL-05W-BX0-B00	
				OTK		NKZW		YSD		図番 DRAWING NO.	
								表面粗さ SURF. ROUGH.		改訂 REV.	
								表面処理 FINISH		A	
								公差 TOL		4710KL-05W-BX0-B00	
								角度 DEG			

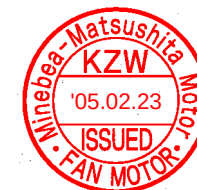
銘板表示 (NAME PLATE)



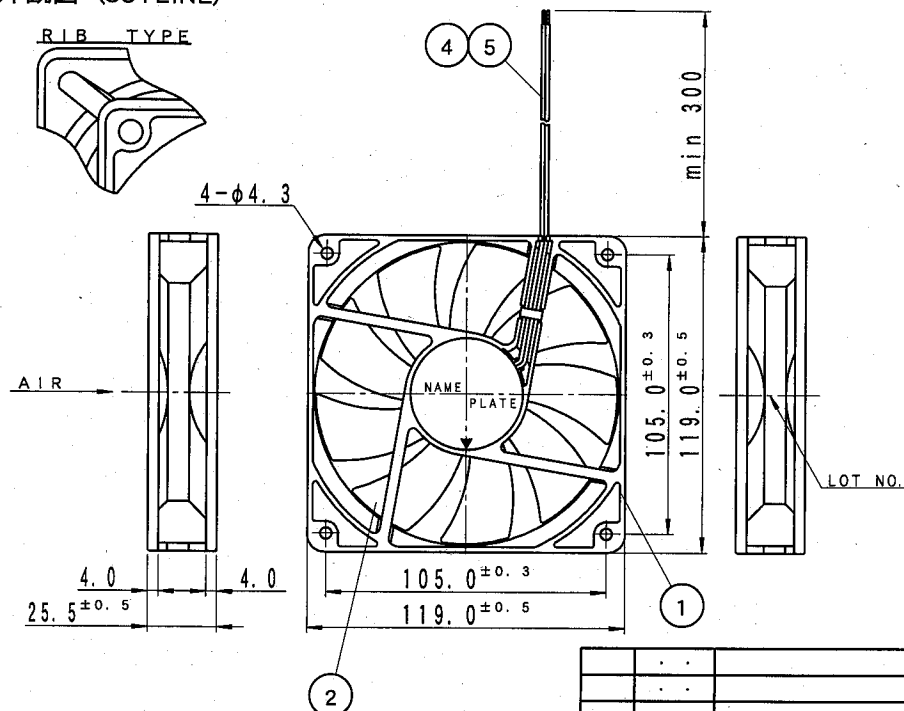
Object Model	(A)	(B)	(C)	(D)
	Model Name	Current	Factory ID	Producing Country
	4710KL-05W-B10	0.10	C: JAPAN 7: CHINA	JAPAN or CHINA
	4710KL-05W-B20	0.13		
	4710KL-05W-B30	0.20		
	4710KL-05W-B40	0.29		
	4710KL-05W-B50	0.38		

部品構成表 (PART LIST)

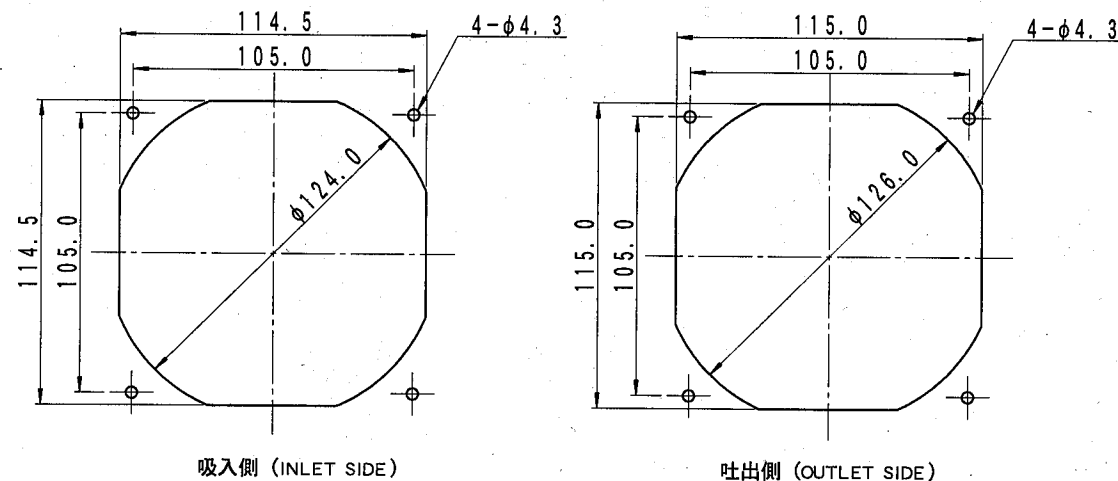
品番 ITEM NO.	品名 DESCRIPTION	材質 MATERIAL	個数 QTY	備考 REMARKS
1	ケーシング (CASING)	プラスチック PLASTIC BLACK UL 94V-0	1	
2	インペラー (IMPELLER)	プラスチック PLASTIC BLACK UL 94V-0	1	
3	銘板 (NAME PLATE)		1	
4	リード線 (LEAD WIRE)	UL1007 AWG24	1	赤 (+) (RED)
5	リード線 (LEAD WIRE)	UL1007 AWG24	1	黒 (-) (BLACK)
	軸受 (BEARING)	ボールベアリング (BALL BEARING)	2	



外觀図 (OUTLINE)



取付穴参考寸法 (PANEL OUT-CUTS)

[illegible]