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# MESSAGE FROM THE FOUNDER

# **66** Co-existence and Mutual Prosperity **55**





by Konosuke Matsushita Founder, Panasonic Corporation

## MARKETING MAP

Panasonic has set up businesses in various countries, securely building its reputation and brand value in the minds of its customers. Looking forward, in addition to continuous development in existing markets, we will explore new business in potential markets throughout other fast-growing regions aggressively.



## **Market Prospect**

#### **Hong Kong**

Hong Kong is a global business city and located in the heart of Asia, operation office of oversea marketing is set up there to play a vital role between markets and factories.

#### **South East Asia**

South East Asia continues its steady growth in upcoming decades with expected rising demand. In response to the expanding markets, Panasonic established its representative offices in Thailand, Indonesia, Malaysia, Vietnam and India respectively.

#### Middle East

Middle East is expected that living standard will rise rapidly over next decade. The representative office was established in Dubai for 20 years, we have been working closely together with our business partners to provide high level of service to customers.

#### **Latin America**

Latin America is one of the regions having long history with Panasonic business. We have been maintaining the products and services in high quality to the present markets. In addition, we continue to expand the business with new market development in the region.

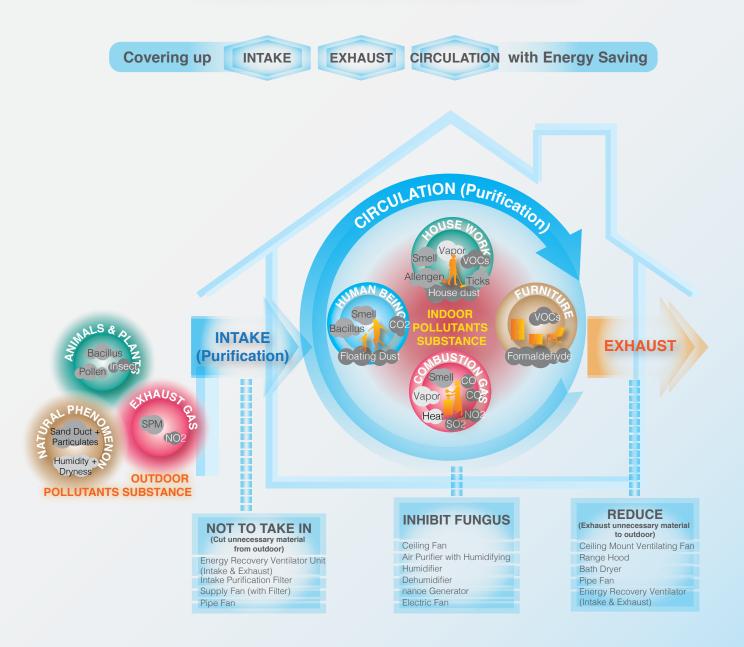
#### **Europe & Africa**

Europe and Africa would be potential markets for Panasonic in air-related business. To tap the potential of these market, we collaborate partnership with leading customers to explore new businesses.

# IAQ SOLUTIONS

Air is the substance which human being take the most into the body as compared with food and water. Moreover, we spend more than 70% of our time indoors that indoor air quality (IAQ) is essential to our daily life. Panasonic recognizes the importance of IAQ, we has been developing the technologies, solutions and products that can contribute the benefits to our living environment.

## IAQ (INDOOR AIR QUALITY) SOLUTIONS OF PANASONIC FOR WHOLE HOUSE



## **BUSINESS HISTORY**

## PRODUCT HISTORY

1918 1950 1956

Matsushita Electric Housewares Manufacturing Works Co. was established Sales of National electric fan in Japan started

Osaka Denki Seiki Co., Ltd was jointly incorporated by Matsushita Electric

Industrial Co., Ltd. And Nihon Denki Seiki Co., Ltd.

1958 Export of National electric fan to oversea markets started

1959 National mark adopted



Desk Fan

1950

3 Wide Blade



Ceiling Fan

1953







1962 1966

Osaka Denki Seiki Co., Ltd was renamed to Matsushita Seiko Co., Ltd English letter adopted in brand logo

1960 Ventilating Fan with shutter

1963 Ventilating Fan with Electric Shutter

1965 Automobile Fan

1964 Industrial Electric Fan







1978







1973 New logo and mark used

National



1970 High Pressure Ventilating Fan

Axial Flow Fan



1979

**Explosion Proof** Ventilating Fan



1981

1989

1993

1995

1996

1999

2004

2005

2008

International Fan Manufacturing Co., Ltd [IFCO] was set up in Hong Kong IFCO was renamed as Matsushita Seiko Hong Kong International Manufacturing co., Ltd [HIMCO]

1980 Room Fan (Louver Fan)

Desk Fan with Cassette Player

Mini Duct Fan

Mini Sirocco









Shunde Matsushita Seiko Co., Ltd [SHUMCO] was set up in China Beijing Great Wall Matsushita Seiko Air Conditioning Equipment Co., Ltd (BGMAC) was set up in China

Matsushita Seiko (Thailand) Co., Ltd. (THAMS) was set up in Thailand and then renamed to Panasonic Ecology Systems Thailand Co. Ltd. (PESESTH)

Set up Oversea Marketing Headquarter in HIMCO, which was renamed to Panasonic Ecology Systems Hong Kong Co., Ltd. (PESHK) in 2004

1990 Futon Dryer

1991 **Energy Recovery** Ventilator



1999 Dehumidifier



2003 Matsushita Seiko Co. Ltd. was renamed as Matsushita Ecology Systems Co., Ltd. (MESC)

> SHUMCO was renamed as Guangdong Matsushita Seiko Co., Ltd. [GDMESC] in 2003 and further changed to Panasonic Ecology Systems Guangdong Co. Ltd. (PESESGD) in 2006

National brand was unified as the brand Panasonic

**Panasonic** 

BGMAC was merged with PESESGD and renamed to PESESGD-BJ MESC was renamed as Panasonic Ecology Systems Co., Ltd. (PESES) 2003 Hybrid Tower Kazekamome



Wireless Remote Control Ceiling Fan



2004 Alleru Buster Air Purifier



2012 2018

Joined as a member of Panasonic Eco Solutions Company 100th anniversary of Panasonic

2010 Nance Generator



DC Electric Fan



(Nanoe Generator)

Air-e

## **IMPORTANT MILESTONES**

1958 Slide Fan (Living Fan)



Wall Fan

1965 Range Hood

1966 Reversible Ventilating Fan



Window Mount Ventilating Fan

Personal Air Circulator

1969 Ceiling Mount Ventilating Fan

Humidifier

















Air Curtain

Fan Coil Unit

Compact Axial Flow Fan

Roof Ventilator

Spot Cooler





1988

Pipe Fan

1982 Hand Dryer

1986 Desert Cooler

Simultaneous Exhaust/Intake Fan

Cabinet Fan



Water Pump













2005 Thermo Ventilator

2006 nanoe Air Purifier



2009 DC Ceiling Mount Ventilating Fan



2013

Mist Sauna



2014 Window Mount Thermo Ventilator



2015 DC Ceiling Fan



Ball Fan

2017 Mist Air Cooler



2019 Wide Range Electric Fan



To provide more pleasant and comfortable living spaces for people around the world, we will continue to develop a complete portfolio of ventilation products and systems for domestic application.

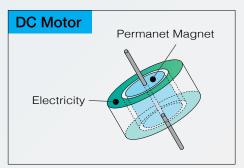
By combining our knowledge and experience, a diverse range of innovative ventilation products have been introduced to create high quality living environment, while offering value-added benefits to our customers.

## **Technology Highlight**

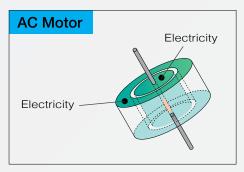
## DC (Direct Current) Motor DC Ceiling Mount Ventilating Fan

With customers becoming more environmentally aware than before, the demand for energy efficient product is rising. Panasonic has developed an AC (Alternative Current) direct-input DC (Direct Current) motor with unprecedented performance characteristics.

In conventional DC ventilating fan motors, the power and drive circuits are separated from the motor. The newly designed Panasonic motor encloses all electronic circuits in a molded casing that enhances energy efficiency and offers a longer operational life. Its energy efficiency is increased up to 96% as compared with conventional AC motor.



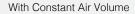
Stator uses electrical magnet while rotor uses permanent magnet

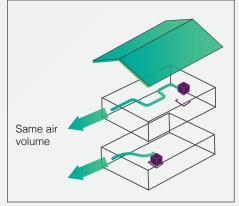


Stator & rotor both uses electrical magnet

## **Constant Airflow Ceiling Mount Ventilating Fan**

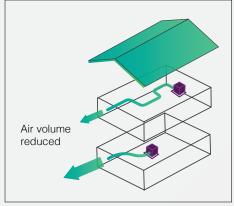
Currently, various models would be selected to fit different locations in your house to overcome static pressure induced by duct length and elbows. By using new technology, our latest product can fulfill airflow requirements regardless of the factors that may increase static pressure. When the fan encounters static pressure, its speed is automatically increased to ensure the rated airflow is achieved.





Air volume from same model with different duct length are same

#### Without Constant Air Volume



Air volume from same model with different duct length are different

# VENTILATION EQUIPMENT

## **Low Noise Design Ceiling Mount Ventilating Fan**

These fans adopt distinctive design of "Resonance-Noise-Absorption Structure".

It can minimize the transmission of noise from the blower to exterior, reducing the operation noise to incredibly low levels and to create a tranquil and silent environment for you.

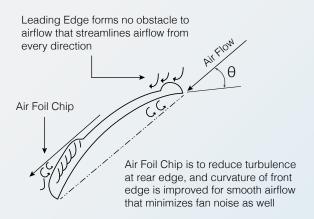
With the "Double Orifice" Structure, noise is effectively absorbed and reduced between the double orifice and casing.



## **Advanced Blade Design**Wall / Window Mount Ventilating Fan

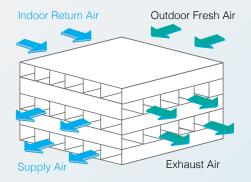
The blade design applies advanced aerodynamic principle that minimizes any obstacles against the airflow.

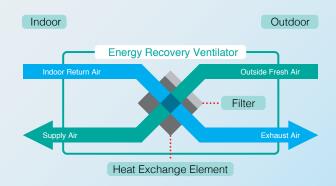




#### **Heat Exchange Technology Energy Recovery Ventilator**

Temperature differences between exhaust and intake air during balanced ventilation will increase the cooling load during hot seasons and the heating load during cold seasons. With our heat exchange mechanism, heat and moist are exchanged between the exhaust and supply's air stream. In summer, outside air supplied into the room is cooled down to a temperature close to that of indoors and vice versa in winter. It ensures energy saving by this exchange process.





# HOME APPLIANCE & BUSINESS SOLUTION

In response to the rapid growing demand for indoor air quality (IAQ), Panasonic, as a leading provider, has developed a full spectrum of products to satisfy the various needs and requirements of customers.

By applying our cutting edge technologies, we are able to enrich people's lives with improved indoor air quality. A variety of products were developed to achieve this, such as air purifier & ceiling fan.

## **Technology Highlight**

#### **Air Purifier**

#### nanoe

#### Air Purifier, Dehumidifier, Air Cooler and Electric Fan

nanoe<sup>™</sup> is long-life micro particles created from water, it can penetrate into fabrics thoroughly and reach in far corners to inhibit pollutants. As the ions are wrapped in water molecules that the effect is long-lasting. Furthermore, nanoe<sup>™</sup> is generated from condensed moisture in the air that water replenishment is not required.



## **Super Alleru-Buster Air Purifier, Dehumidifier, Air Cooler and Electric Fan**

Some of our Indoor Air Quality Appliances, such as Air Purifier and Dehumidifier, are equipped with anti-bacteria filters which consist of three features, Super alleru-buster, Anti-Bacteria Emzyme and Green Tea Catechin. These three filters can inhibit 99% of allergens and eliminate bacteria, keeping your room fresh and dry.



Phenolic Polymer • Polyphenol

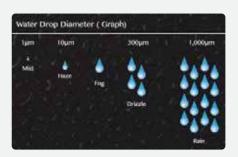
Absorb and inhibit allergens

Allergen

#### Mist Air Cooler

Differing from typical evaporation, Panasonic mist technology lower room temperature more effeciently. Small amount of water is pumped up inside the vessel by the rotation of the rotor and silky mist is generated by the crashing ring. The mist is evaporated and blown out of the vessel by airflow for absorbing warm air energy.

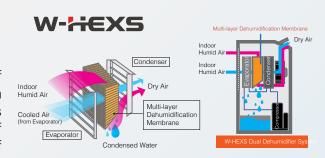
Size of mist particles generated by Panasonic mist technology is 6 times smaller than steam particles and 1000 times smaller than the cooling particles from typical evaporation.

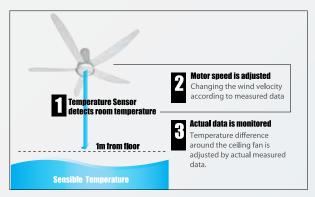




## W-HEXS(Dual Dehumidifier System) Dehumidifier

The multi-layer dehumidification membranes of W-HEXS enable additional air inlet direction, by which cool and hot air flow across for condensation. This process significantly improves power efficiently of dehumidification as compared with single air flow of conventional dehumidification system.

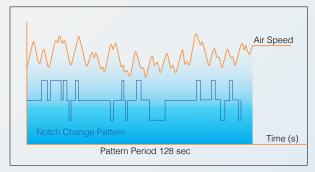




Depending on the room temperature, Auto Mode controls the fans to generate the most comfortable air velocity to human body.

# Auto Mode by Temperature Sensor Ceiling Fan and Electric Fan

Equipped with thermal sensor, auto mode can detect temperature changes and control the fan, generating the most comfortable air flow.



Speed notch toggles based on 1/f Yuragi pattern

### 1/f Yuragi Electric Fan

## 1/4 yuragi

Our sophisticated technology, the 1/f Yuragi on the Electric Fan, varies air velocity and simulates the pattern of natural breeze, bringing people a sense of refreshment and comfort. Incorporated with human-centered technology, the rhythm also maintains your external body temperature and keeps you in a relaxing physical condition.

# **EVENT HIGHLIGHT**



Hospitality Summit, Philippines (2019)



Product Seminar, Taiwan (2019)



Fan Ventilation Showroom, Indonesia (2019)



MCE Asia, Singapore (2018)



REVAC Expo, Malaysia (2018)



Product Seminar, Mynamar (2018)



Product Seminar, Taiwan (2018)



The Future of Living Expo, Hong Kong (2018)



Press Conference, UAE (2018)



Smart Solution Center, Thailand (2017)



Product Seminar, Vietnam (2017)



Asian Building Technologies, Hong Kong (2016)

# CORPORATE SOCIAL RESPONSIBILITIES

As a company with Corporate Special Responsibility at the core, we will never forget to set the environmental protection as our priority goal to achieve besides product innovation and customers satisfaction.

Under normal circumstances, Panasonic's products are not mandatory to comply with the Restriction of Hazardous Substances (RoHS) regulation for their markets. Nevertheless, we recognize our responsibility to the society and therefore, commit ourselves to conforming to the RoHS requirements. We have invested a lot of resources and implement such pro-environmental policy. In 2006, we were proud to announce that all our products follow the RoHS regulations.

In addition, Panasonic has demonstrated its commitment to providing quality air to the environment, and was finally certified under the standards of ISO14001 Environmental Management and ISO9001 Quality Management.





ISO9001 Certificate

ISO14001 Certificate



Charity Marathon, Hong Kong (2008-2019)



Our care for the Earth has been proven by the newly-launched products or parts, such as DC motor, Auto Mode for ceiling fan, HP motor, etc. They are characterized by functions that help enhance energy conservation.

In the age of information, we understand the importance of information security. We have acquired ISO27001, the Information Security Management in 2009. It further shows our commitment to protecting the right of our customers.

In response to our commitment to contributing the society, Panasonic also involves in a wide scale of CSR-related activities around the world.

## OUR SUPPORTS

#### WEB COMMUNICATION



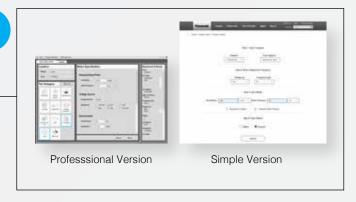
To cope with the rapid development of worldwide network, we have launched a newly-designed web site in 2019. It provides a platform for us to communicate with our customers worldwide, and in an effective manner.

In addition, to ensure our online information can be accessible to persons with disabilities, our new web site meets the requirement of Panasonic Web Accessibility Manual to cater for the needs of persons with disabilities.

#### PRODUCT SELECTION PROGRAM ●

This program provides a tool for customers to select applicable models of ventilation products by simply inputting the required criteria.

There are professional version and simple version for different applications.





#### HOME VENTILATION

This program allows their customers to understand the possible air problems in a house.

#### PRODUCT SEMINAR / TRAINING ●

To further enhance our value as a leading provider of indoor air quality products, we continuously provide various types of semi-nar and training to our business partner so the highest standard of the services can be maintained.



# PRODUCT INDEX

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## PRODUCT OVERVIEW

#### **Ceiling Mount Ventilating Fan**



- DC motor & AC motor with thermal cut-off
- Fan size (L x W x H)mm: 170 x 170 x 180 376 x 376 x 250mm
- Louver size mm: 240 310 mm
  Duct size mm: 100/150 mm
  Capacities: 80 800 m³/h
  Static pressure: 90 340 Pa
- IPX2
- Insulation class : E
- Material: metal (galvanized steel)/plastic (ABS)
- Auto operation by motion sensor (model: FV-24JR2)
- AMCA certified ,IEC standard compliance, GSO certified ESMA, KUCAS,SASO, SONCAP

#### **Cabinet Fan**



- Long life condenser motor with thermal cut-off
- Twin flow fan (Sirocco fan)
- Fan Size(L x W x H)mm: 290 x 291 x 184 809 x 1052 x 370mm
- Duct Size mm: 100 250mm
  Capacities: 145 5300 m³/h
  Static pressure: 135 600 Pa.
- IPX2
- Insulation class : E
- Material: galvanized steel enhancing high durability.
- Models licensed to bear the AMCA certified seal: FV-12NS3, FV-15NS3, FV-18NS3, FV-28NS3, FV-25NS3, FV-25NS3, FV-25NS3

#### **Compact Axial**



- AC motor with thermal cut-off
- Fan size(L x W x H)mm: 280 x 280 x 260 554 x 554 x 530mm
- Capacities: 550 6522 m<sup>3</sup>/h
- Static pressure: 115 800 PaMaterial: Steel/Alminum
- Ambient temperature range of from -10°C to 40°C
- IPX2
- Insulation Class : B



SOUND

## PRODUCT OVERVIEW

#### **Industrial Type**





• Fan size (L x W x H)mm: 327 x 327 x 171 - 760 x 760 x 320mm

Capacities: 1150 - 10920 m³/h
Static pressure: 47 - 140 Pa

• Type: shutter/no shutter

• Insulation class: E

• Materia: metal (Steel SGCC)

• IEC standard compliance, GSO certified, ESMA, KUCAS, SASO, SONCAP

 Models licensed to bear the AMCA certified seal: FV-25GS5, FV-30GS5, FV-35GS5, FV-40GS5, FV-45GS4, FV-50GS4, FV-60GS4

#### Mini Sirocco



• AC motor with thermal cut-off

• Fan size (Lx W x H)mm: 180 x 180 x 120 - 330 x 330 x 250mm

Duct size mm: 100 - 200mm
Capacities: 144 - 1590 m³/h
Static pressure: 70 - 437 Pa

• Insulation class : E

• Material: metal (Steel SGCC)

• Two speed selection FY-16CG1, FY-17CG1, FY-19CG1, FY-21CG1, FY-21CT1

• IPX2

#### **Wall Mount Ventilating Fan**









• AC motor with thermal cut-off

• Fan size (L x W x H)mm: 170 x 170 x 99 - 402 x 409 x 128mm

• Capacities: 75 - 1200 m<sup>3</sup>/h

• IPX4 (outside) rating

• Insulation class : E

• Material: metal /plastic (ABS)

• Type: Bathroom Series / Filter Series (kitchen) / Automatic Shutter Series / Automatic Shutter Louver Series / Reversible Louver Series / Metallic Series

• IEC standard compliance, GSO certified, ESMA, KUCAS, SASO, SONCAP

Models licensed to bear the AMCA certified seal: FV-15AST1, FV-20AU9T, FV-25AU9T, FV-30AU9T, FV-20AL9T, FV-25AL9T, FV-30AL7T, FV-20AS2, FV-25AS2, FV-30AS2, FV-20AS2 05, FV-25AS2 05, FV-30AS2 05



SOUND

## PRODUCT OVERVIEW

#### Window Mount Ventilating Fan



- AC motor /HP with thermo cut-off
- Fan size(L x W x H)mm: 210 x 210 x 92 224 x 224 x 194mm
- Duct size mm: 186 250 mm
- Capacities From 145 480 m<sup>3</sup>/h
- IPX4 (outside) rating
- Insulation class E
- Type: High Pressure Deluxe Series/Electric Shutter Series/Cord-operated Shutter Series

SOUND

- Able to fix on glass plate of thickness: 3 25mm(FV-15WH3T/FV-20WH3T)
- Material : Plastic
- IEC standard compliance, GSO certified, ESMA, KUCAS, SASO, SONCAP
- Models licensed to bear the AMCA certified seal: FV-15WH3T, FV-20WH3T, FV-15WA1, FV-20WA1, FV-15WU4, FV-20WU4

#### Air Curtain



- AC motor With thermal cut-off
- Size mm: 900/1200/1500 mm
- Capacities: 920 2450 m<sup>3</sup>/h
- Material: Steel plate/Steel SGCC/Resin ABS/Glass fiber
- Insulation Class: B/F
- Type: Basic series, Remote control series, Sensor series
- IEC Standard Compliance, GSO Certified, ESMA, KUCAS, SASO, SONCAP

#### **Water Pump**



- Type: Peripheral/Centrifugal
- Capacity: 5L/Min to 154L/min
- Total head: 5m to 47.5m
- Stainless steel impeller/Brass Impeller
- Material: SUS steel motor shaft
- Output wattage [kW] : 0.37(0.5HP) 1.5(2.0HP)
- Linsulation class:F
- IEC standard compliance
- IP54
- Ambient Temperature: -10°C to 50°C

GSO - Gulf Standards organization ESMA - Emirati standards Mark ABS - Acrylonitrile butadiene styrene KUCAS: Kuwait Conformity Assurance Scheme SONCAP: Standard Organisation of Nigeria Conformity Assessment Program



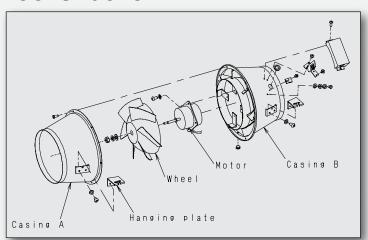
Single Phase Series & Three Phase Series



Single Phase FY-25DSF2NET FY-28DSM2NET FY-35DSM2NET **FY-40DSL2NET FY-40DSH2NET FY-45DST2NET** 

Three Phase FY-40DTL2BET FY-40DTH2BET FY-45DTT2BET FY-45DTH2BET

#### Construction



## Main components and materials

Components name	Material	Standard		
Casing A	SPCC,SPHC	JIS G 3141		
Wheel	A5052	JIS H 4000		
	PP	JIS K 6747		
	SPHC	JIS G 3141		
Motor				
Casing B Assy.	SPCC,SPHC	JIS G 3141		
Hanging plate	SPHC	JIS G 3141		

## **Specification**

		Rated			Air Vo	olume	Cur	rent	Int	out		Ν	loise Le	vel (dB	)		Wheel	\\/-:	Duct
MODEL No.	Power Volatage (V)		Number of Poles	Hi/Lo	(m <sup>3</sup>	³/h)	(/	4)	(\	٧)	Side o	f Body	Inlet	Side	Outle	t Side	Diameter	Weight (kg)	Size
	5 4 4 4 7	(V)			50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	(cm)	cm) (N9)	(mm)
FY-25DSF2NET	Single-phase	220-240V	4	Hi	600	720	0.19	0.17	34	38	41.0	42.0	51.0	54.0	50.5	53.5	25	4.7	Ø200
TT ZODOLZIVET	Olligie-priase	220-240V	7	Lo	550	650	0.14	0.12	27	29	39.5	41.5	49.0	52.0	48.5	51.5	20		0200
FY-28DSM2NET	Single-phase	220-240V	4	Hi	1194	1224	0.25	0.28	51	62	44.5	45.5	54.5	55.5	54.0	55.0	28	8.5	Ø250
TT EODOMENTET	Omgio pridoo	LLO L 101	4	Lo	1050	1062	0.24	0.26	55	61	42.0	43.0	52.0	53.0	51.5	52.5	20	0.0	
FY-35DSM2NET	FY-35DSM2NET Single-phase	220-240V	4	Hi	2016	2154	0.42	0.57	95	131	45.5	46.5	56.5	57.5	56.0	57.0	35	13.0	Ø300
	omigio pridoc			Lo	1782	1830	0.38	0.50	87	113	43.0	44.0	54.0	55.0	53.5	54.5			
FY-40DSL2NET	Single-phase	220-240V	4	Hi	3228	3528	0.94	1.3	204	281	56.0	56.5	68.0	68.5	67.5	68.0	40	20.0	Ø350
	amgra prince			Lo	3084	3186	0.86	1.1	194	245	54.0	54.5	66.0	66.5	65.5	66.0			
FY-40DSH2NET	Single-phase	220-240V	4	Hi	3504	4128	1.1	1.8	256	401	55.5	56.5	67.5	68.5	67.0	68.0	40	22.0	Ø350
	3 7 7			Lo	3444	3822	1.0	1.6	233	348	53.5	54.5	65.5	66.5	65.0	66.0			
FY-45DST2NET	Single-phase	220-240V	4	Hi	4968	5940	1.9	2.8	428	643	59.5	61.0	69.5	71.0	69.5	71.0	45	37.0	Ø400
	0 1			Lo	4206	5790	1.7	2.7	398	615	58.0	60.5	68.0	70.5	68.0	70.5			
FY-40DTL2BET	Three-phase	380V	4	Hi	3396	3840	0.48	0.65	241	381	56.0	56.0	68.0	68.0	67.5	67.5	40	18.0	Ø350
				Lo	3330	3660	0.42	0.59	237	334	54.0	54.0	66.0	66.0	65.5	65.5			
FY-40DTH2BET	Three-phase	380V	4	Hi	3426 3264	3912 3666	0.57	0.66	250	372	56.0	57.0	68.0	69.0	67.5	68.5	40	19.0	Ø350
				Lo Hi	5004	6000	0.45	0.58 1.2	220 421	331 638	55.0	56.0	67.0	68.0	66.5	67.5			
FY-45DTT2BET	Three-phase	380V	4		4860	5886	1.1 0.93	1.2	397	614	61.0	63.0	71.0	73.0	71.0	73.0	45	36.0	Ø400
				Lo Hi	5454	6522	1.2	1.4	511	758		62.5 65.0	70.5	72.5 72.5	70.5	72.5 72.5			
FY-45DTH2BET	Three-phase	380V	4	Lo	5250	5789	1.2	1.4	482	730	59.0 58.5	64.5	68.5 68.0	72.5	68.5 68.0	72.0	45	37.0	Ø400
				LÜ	5250	3/89	1.1	1.3	402	/30	J0.5	04.5	00.0	12.0	00.0	72.0			

Note: In above table, the values are tested 230V for Single-phase Models, and 380V for Three-phase Msetsdadition:

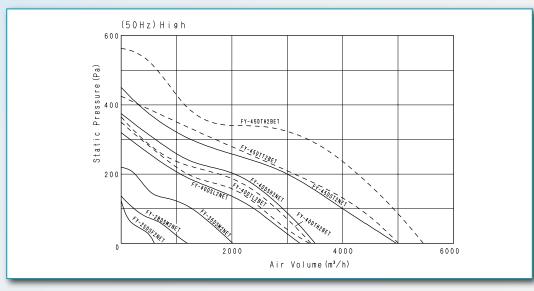
1. The values of air volume are measured at 0 static pressure (Pa) by the chamber method.

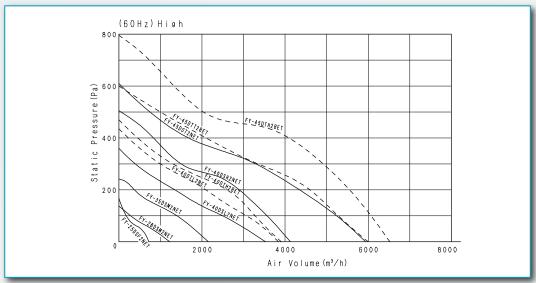
• Use in the f

- 2. The values of Current and Input are in the free load condition.
- 3. The values of noise level are measured at 0 static pressure (Pa) and at the following positions. (When ducts are connected on both inlet and outlet side.) Side of fan body: 1.5m apart from the fan body (excluding the noise of outlet side)
- Inlet side : 1.5m apart from the inlet of the fan (excluding the noise of outlet side)
  Outlet side : 1.5m angle 45° apart from outlet side (excluding the noise of inlet side) Add 2dB to the values above for the noise levels apart from 1.0 m.
- 4. Specifications above indicate the values under the condition of normal temperature (20 degrees Cetsicsa)use corrosion in a short term.
- · Use in the following conditions
- Handling air and Ambient air: -10 to +40 deg C, relative humidity
- Do not use the product in the places such as outdoor (where rain water splashes), where water splashes, steam is always generated,
- corrosive gas may be generated, or chemicals may be used.

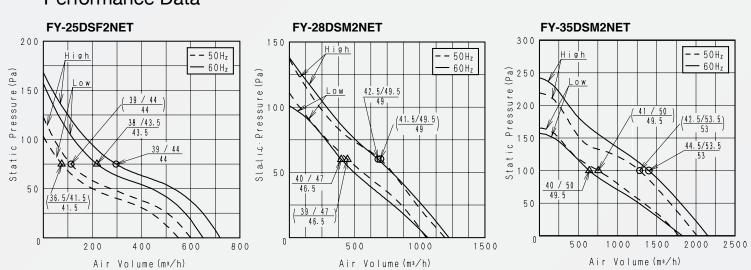
  Do not use the product in the places such as pools or hot springs where the chemicals such as chlorine are used. It has high possibility

Comprehensive selection chart

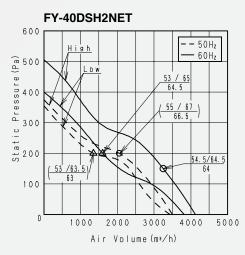


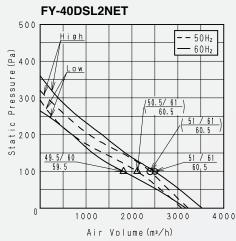


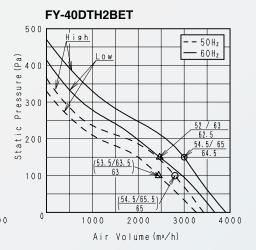
#### Performance Data

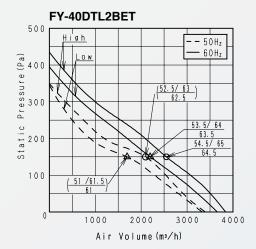


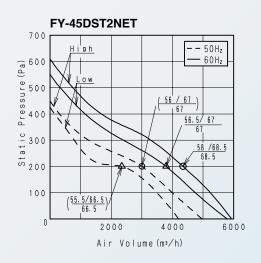
#### Performance Data

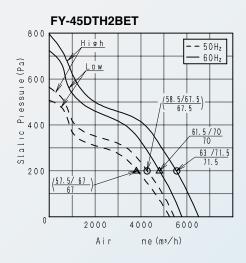


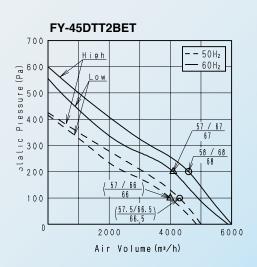




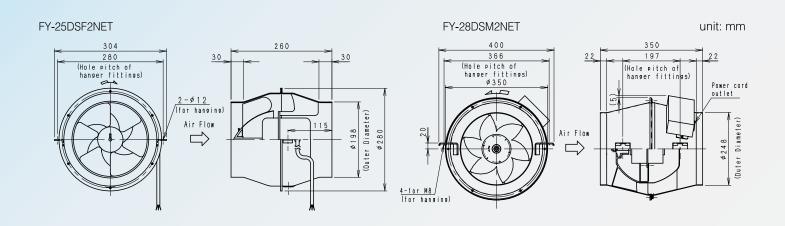




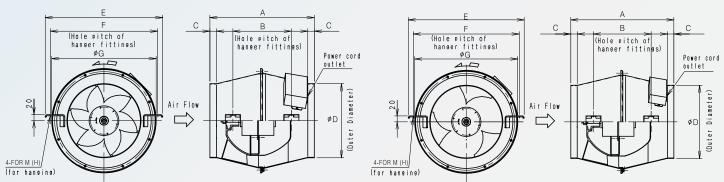




#### Dimension

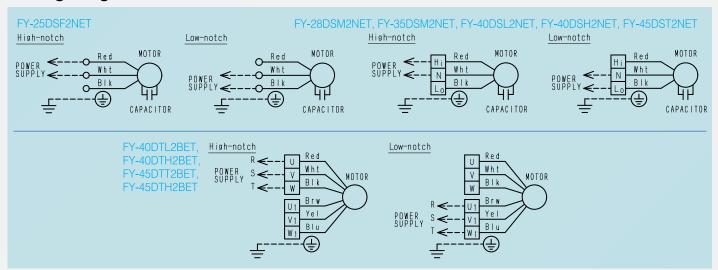


FY-35DSM2NET, FY-40DSH2NET, FY-40DSL2NET, FY-40DTH2BET, FY-40DTL2BET, FY-45DST2NET, FY-45DTT2BET



	Α	В	C	D	E	⊢	G	Н
FY-35DSM2NET	410	206	21.5	298	460	426	415	8
FY-40DSH2NET	480	206	26	347	525	491	480	8
FY-40DSL2NET	480	206	26	347	525	491	480	8
FY-40DTH2BET	480	206	26	347	525	491	480	8
FY-40DTL2BET	480	206	26	347	525	491	480	8
FY-45DST2NET	540	218	25.5	395	588	554	546	10
FY-45DTH2BET	540	218	25.5	395	588	554	546	10
FY-45DTT2BET	540	218	25.5	395	588	554	546	10

### Wiring Diagram



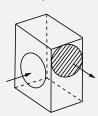
Single Phase Series & Three Phase Series

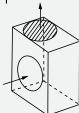


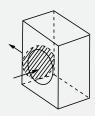
Single Phase	
FY-10CG1	FY-17CG1
FY-12CG1	FY-19CG1
FY-14CG1	FY-21CG1
FY-16CG1	

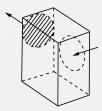
Three Phase FY-21CT1

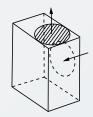
Adoption of square casing satisfies various need of installing pattern

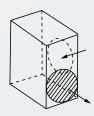




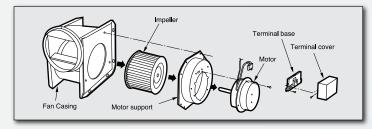








### Construction



## Main components and materials

Components name	Material	Standard
Fan Casing	SGCC	JIS G 3302
Impeller	SGCC	JIS G 3302
Motor support	SGCC	JIS G 3302
Motor		

## **Specification**

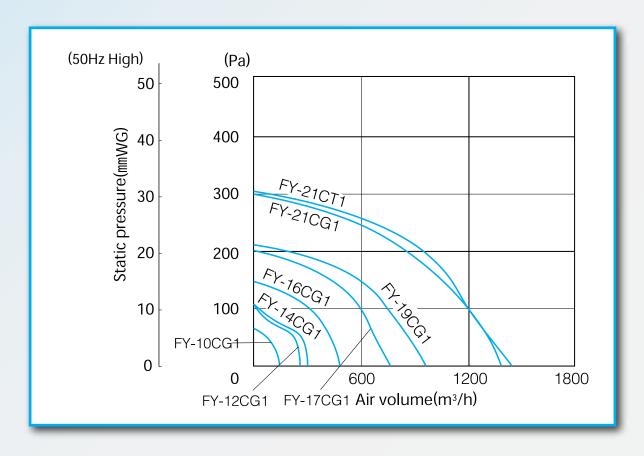
				UT	FAN S		AIR VOLUME					E(dB)			IMPELLER	WEIGHT	SUCTION	DISCHARGE DUCT
			(\	V)	(mi	n <sub>-1</sub> )	(m <sup>3</sup>	<sup>2</sup> /h)	Casin	g side	Suctio	n side	Dischar	ge side	DIAMETER	(kg)	SIZE	SIZE
	MODEL N	о.	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	(cm)	(1.9)	(mm)	(mm)
	FY-10CG1		11	13	980	970	144	143	32	32	38	38	38	38	10	3.1	Ø100	Ø100
ш	FY-12CG1		21	22	760	725	258	242	34	32	39	38	39	38	12	3.6	Ø150	Ø150
S	FY-14CG1		30	40	930	870	308	284	39	36	44.5	41.5	44.5	41.5	12	3.8	Ø150	Ø150
표	EV 40004	Hi	49	59	1080	1060	495	470	43.5	42.5	50	49	50	49	15	5.3	Ø150	Ø150
Ш		Lo	41	40	875	805	365	335	38	36	44.5	42.5	44.5	42.5	13	5.5		
	EV 17001	Hi	87	95	920	850	763	722	46	44.5	51	49	51	49	18	8.8	⊘200	
<u>N</u>	FY-17CG1	Lo	74	79	815	730	640	593	42.5	40	47	45	47	45	10	0.0		Ø200
$\overline{S}$		Hi	117	143	1110	1100	947	931	50.5	50	55.5	55	55.5	55	18	9.4	~ 000	
	FY-19CG1	Lo	109	127	1030	985	821	791	49	48	54	53	54	53		5.4	⊘200	Ø200
	FY-21CG1	Hi	240	340	1325	1430	1420	1540	57	59	61	63	61	63	20	15	Ø200	
	F1-21CG1	Lo	220	300	1230	1180	1260	1230	56	54	59.5	58.5	59.5	58.5			Ø <b>200</b>	∅200
THREE PHASE	FY-21CT1	Hi	253	370	1355	1485	1450	1590	57.5	59.5	61.5	63.5	61.5	63.5	20	14.5	Ø200	Ø200
HE	FY-21011	Lo	177	228	1070	1030	1090	1020	51.5	50	55.5	54	55.5	54	20	14.5	<i>∞</i> 200	2200

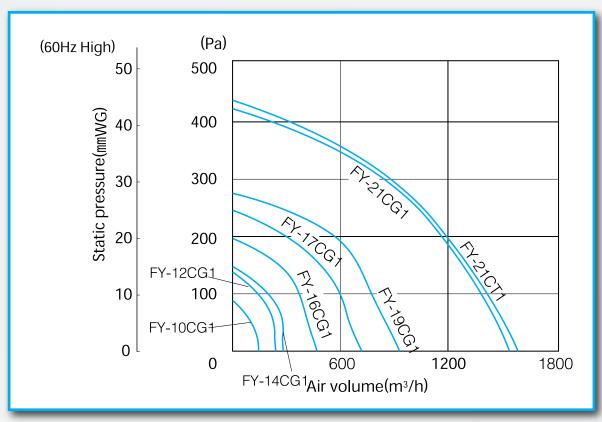
- 1. Power consumption is expressed as open value.
- 2. Air volume is measured using the Chamber method (JIS B 8330 or JIS C 9603) at 0Pa static pressure.
- 3. Noise: Suction side Noise at 1.5m at suction side. Casting side Noise at 1.5m on the side of a machine body. Discharge side Noise at 1.5m orthogonally at discharge side.

#### Cautions:

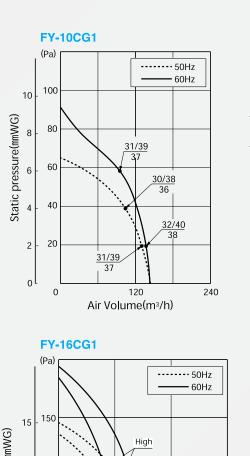
- Don't use it for ventilation at a site generating heat, oily smoke, steam and/or moisture. (Environmental condition:-10°C~+40°C, relative humidity below 85%)
- Install a door 600×600mm or more for maintenance purpose.
- Install a leak breaker or a motor breaker on the source site. A control panel such as a contact switch relay is required for three phase power source.
- In cold air supply to indoor during winter and at any other occasion susceptible to dew drop, heat insulation is required.
- It is recommended to use a commercially available filter at the suction side to avoid dust and/or oil waste attachment on a blade.
- Install it on a horizontal direction.
- Do not perform parallel operation of more than one unit on a switch, for it may result in motor failure.

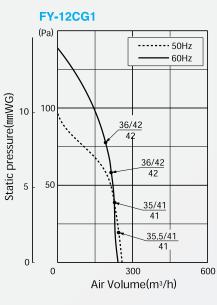
Comprehensive selection chart

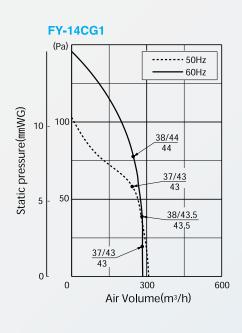


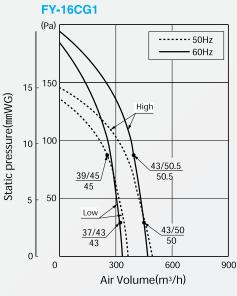


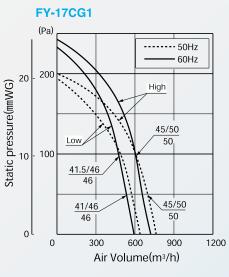
#### Performance Data

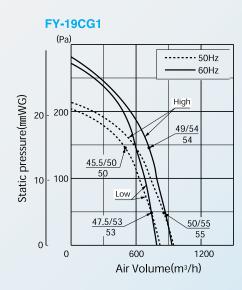


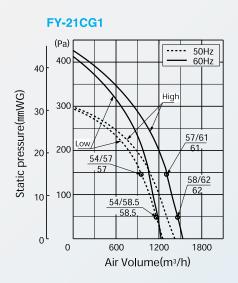


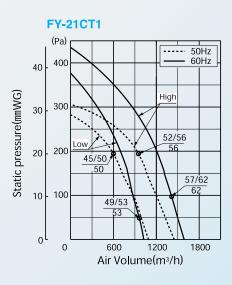










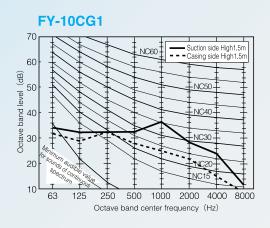


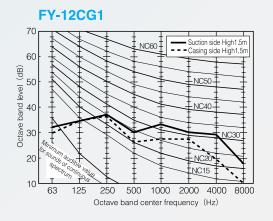
A figure on the curve indicates a noise level (dB).

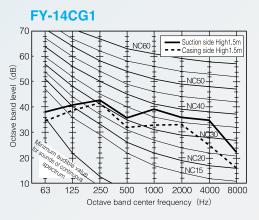
It is calculated as Casing side/Suction side.

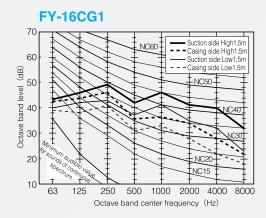
Discharge side

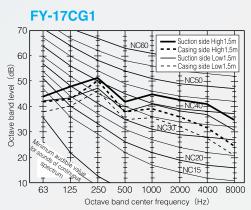
NC Curve 50Hz

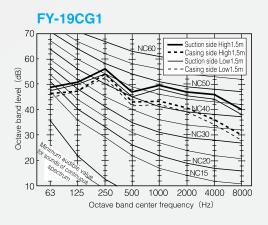


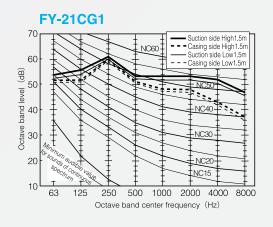


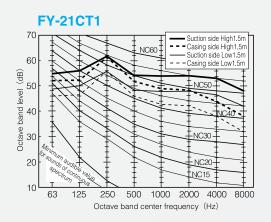




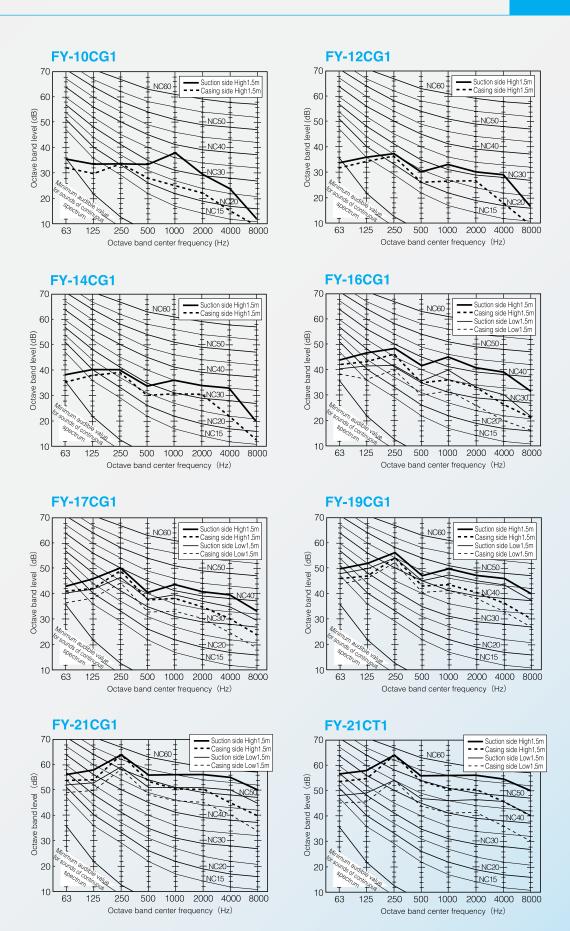




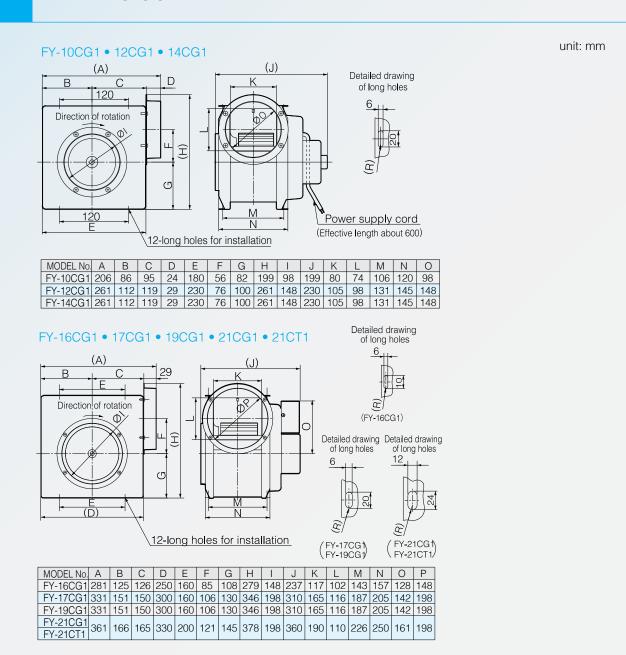




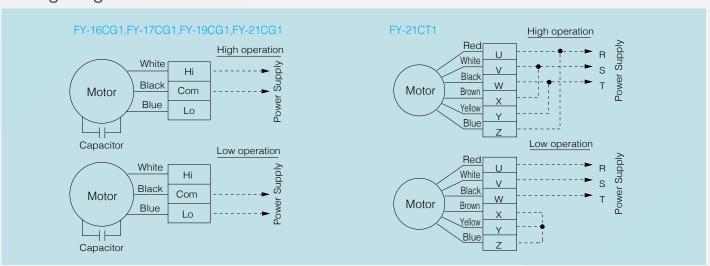
NC Curve 60Hz



#### Dimension



### Wiring Diagram



## **ACCESSORIES**

## Pipe Hood



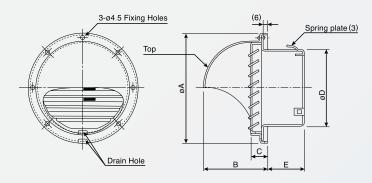
With Net Without Net

FV-MGX100P FV-MCX100P FV-MGX150P

- High strength adopt 0.5mm thickness SUS 304 stainless steel
- Excellent anti-rust capability hood part coated with metallic silver paint prevent oxidation of material
- Easy installation 3pcs of spring clip facilitate duct / pipe connection
- 2.5mm x 2.5mm net keep out ingress of small particles and insects from outside (FV-MGX100P & FV-MGX150P)
- It is recommended to use pipe hood with net at intake terminal while without net at exhaust.

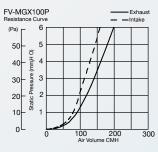
#### **Dimension**

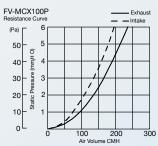
Unit: mm

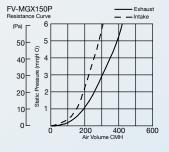


Model	A	В	С	D	E
FV-MGX100P	141	79	20	97	48
FV-MGX150P	190	106	23	147	53
FV-MCX100P	141	79	20	97	48
FV-MCX150P	190	106	23	147	53

#### **Performance Data**







FV-M( Resistar						-		Exhaust	t
(Pa)	Г	6	·		Г		7	7	1
50	Ļ	5	;  <u> </u>	-			/	γ_	
40	L	Static Pressure (mmH O)	ıL			ĺ	$\perp$		
		e (min				1	/		
30	r	essure			/	7			
20	H	atic P	₽		1	/			
10	F	ਲੱ 1	-	1	$\swarrow$				
0	L		ئسا						
Ů			0		00 Air Volu		00 1H	60	)()

Specification											
Model No.	Diameter of Applicable Pipe [mm]	Material	Dimension of Net [mm]								
FV-MGX100P	100	Stainless Steel	2.5 x 2.5								
FV-MGX150P	150	Stainless Steel	2.5 x 2.5								
FV-MCX100P	100	Stainless Steel	-								
FV-MCX150P	150	Stainless Steel	-								

## **ACCESSORIES**

### Vent Cap



With Net Without Net

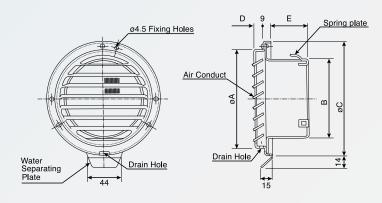
FV-VGX100P FV-VCX100P FV-VCX150P

- High strength adopt 0.5mm thickness SUS 304 stainless steel
- Easy installation 3pcs of spring clip facilitate duct / pipe connection
- 2.5mm x 2.5mm net keep out ingress of small particles and insects from outside (FV-VGX100P & FV-VGX150P)
- It is recommended to use vent cap with net at intake terminal while without net at exhaust.

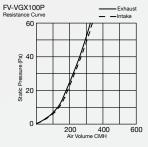
#### **Dimension**

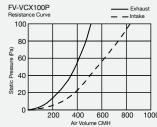
Unit : mm

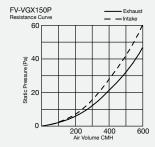
## Performance Data

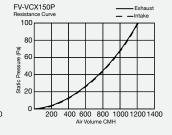


Model	A	В	С	D	E
FV-VGX100P	120	97	145	13	47
FV-VGX150P	169	147	195	18	52
FV-VCX100P	120	97	145	13	47
FV-VCX150P	169	147	195	18	52







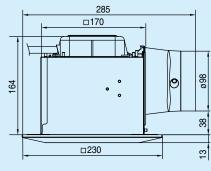


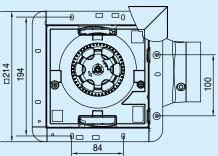
Specification			
Model No.	Diameter of Applicable Pipe [mm]	Material	Dimension of Net [mm]
FV-VGX100P	100	Stainless Steel	2.5 x 2.5
FV-VGX150P	150	Stainless Steel	2.5 x 2.5
FV-VCX100P	100	Stainless Steel	-
FV-VCX150P	150	Stainless Steel	-

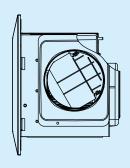
**Super Quiet Series** 

## **Product Dimension**

**UNIT: mm** 









Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



### **FV-17CU8**

- Super low noise design
- Long life ball bearing motor
- Taper blade sirocco fan
- Resonance-Noise-Absorption Structure
- Reverse flow prevention shutter
- Pre-installed power cord

Speci	ificatio	n											
Madal	Voltore	F	CFN										
Model V	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	RPM	Watts*	Watts**
	220V	60Hz	CFM	41	28	25					815	11.4	10
FV-17CU8	220 V	00112	Sones	0.3	0.5	0.6					013	11.4	10
V-17000	040\/	EOLI-	CFM	48	40	37					920	10.1	10.5
	240V	50Hz	Sones	0.3	0.4	0.6					830	12.1	10.5

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values are located to the performance of the

shown are for installation type B: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

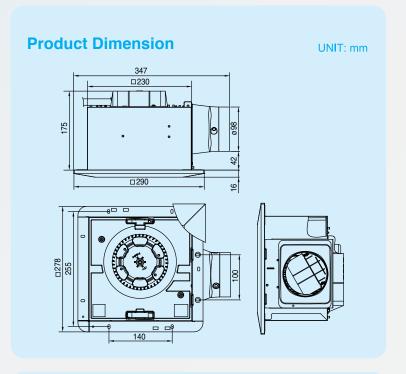
<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**Super Quiet Series** 



## **FV-24CU8 / FV24CD8 FV-24CH8**

- · Super low noise design
- Long life ball bearing motor
- Taper blade sirocco fan
- Resonance-Noise-Absorption Structure
- · Reverse flow prevention shutter
- · Pre-installed power cord





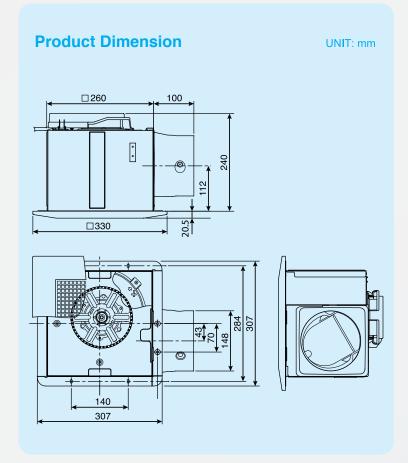
Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Speci	Specification													
Na1 -1	Voltage	Frequency	CFN											
Model			inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	RPM	Watts*	Watts**	
	220V	60Hz	CFM	77	66	64	44				640	16.5	15.5	
FV-24CU8 240V	220V	00112	Sones	0.4	0.4	0.6	1.5				040	10.5	13.3	
	50Hz	CFM	87	77	74	50				680	14.9	14		
	240 V	DUNZ	Sones	0.5	0.7	0.7	1.5				080	14.9	14	
	220V	60Hz	CFM	94	79	77	58				750	17.6	16.5	
FV-24CD8	220V	00112	Sones	0.6	0.7	0.7	1.5				750	17.0	10.5	
1 4-24000	240V	50Hz	CFM	104	90	85	63				800	18.8	17.5	
	2 <del>4</del> 0 V	SUFIZ	Sones	8.0	0.9	1.0	1.6				000	10.0	17.5	
	220V	60Hz	CFM	105	93	91	75	47			810	23.4	22	
FV-24CH8	220V	OUTZ	Sones	0.8	0.9	1.0	1.3	2.2				23.4	22	
1 4-240110	040\/	F01.1-	CFM	115	109	93	71	21			000	00.7	22	
	240V	50Hz	Sones	1.2	1.2	1.2	1.3	1.8			880	23.7	22	

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels. \* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Super Quiet Series





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



### **FV-27CH9**

- · Super low noise design
- Long life ball bearing motor
- · Taper blade sirocco fan
- Resonance-Noise-Absorption Structure
- · Pre-installed power cord
- · 2 speed selectable

Spe	cifica	tion												
Madal	Valtaga	_		(	CFM/SOI	NE AT ST	ATIC Pres	sure (ps-	inches of	H <sub>2</sub> O)		RPM Wa	*	**
Model	voitage	Frequency	Speed	inches of H₂O	0	0.1	0.125	0.25	0.375	0.5	0.625		watts	watts
	220V	60Hz	Hi	CFM	180	160	154	117	76	34		578	36	33
FV-27CH9	2200	OUNZ	П	Sones	1.0	1.1	1.3	1.7	2.5	2.5	_		30	33
FV-210H9	240V	FOL I-	Hi	CFM	198	179	172	128	78	28	_	618	38	34
		240V 50Hz		Sones	1.4	1.5	1.6	1.8	2.6	2.6	_	010	38	34

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard

<sup>301.</sup> Values shown are for installation type B: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

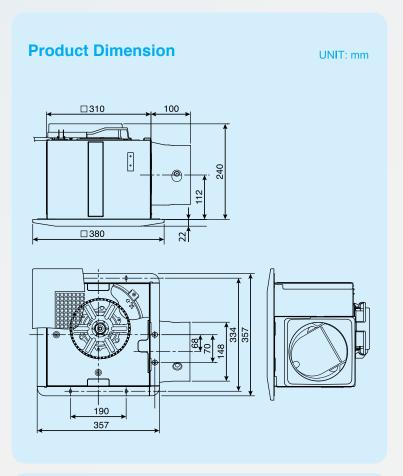
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**Super Quiet Series** 



### **FV-32CD9**

- · Super low noise design
- Long life ball bearing motor
- Taper blade sirocco fan
- Resonance-Noise-Absorption Structure
- · Pre-installed power cord
- · 2 speed selectable





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

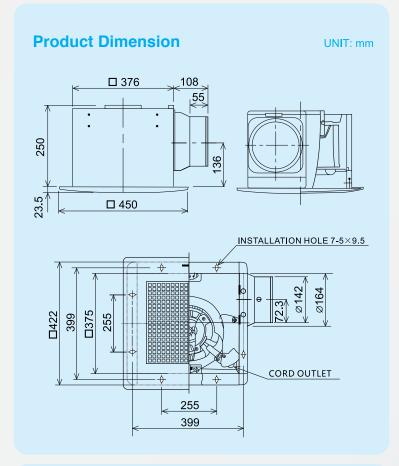
Spe	cifica	tion													
Madal	V-14			C	CFM / SONE AT STATIC Pressure (ps-inches of H <sub>2</sub> O)										
Model	voitage	Frequency	Speed	inches of H₂O	0	0.1	0.125	0.25	0.375	0.5	0.625	RPM	Watts*	Watts	
	220V 6	60Hz	Hi	CFM	229	201	195	159	123	86	49	609	53	48	
FV-32CD9	220V	V 60HZ		Sones	1.2	1.3	1.4	1.7	2.2	2.7	3.3	609	53	40	
	EOLI-	Hi	CFM	257	236	230	192	147	99	53	668	57	50		
	240V	40V 50Hz	"	Sones	1.6	1.7	1.8	1.9	2.5	3.0	3.6	000	5/	50	

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are foundness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Tree inlet hemispherical sone levels

<sup>301.</sup> Values shown are for installation type B: Free inlet hemispherical sone levels.  $^{\star}$  the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Standard Series





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



## FV-38CD8/ **FV-38CD8 05**

- · High-Low speed selectable
- Condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- · High performance sirocco fan

Spe	Specification															
Madal	Vallana			(	CFM / SONE AT STATIC Pressure (ps-inches of H <sub>2</sub> O)											
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	RPM	Watts*	watts
FV-38CD8	220V	60Hz	Hi	CFM	356	334	329	305	273	236	199	162	125	670	100	98
FV-30CD0	2200	0002	П	Sones	3.4	3.5	3.6	3.7	3.9	4.2	5.1	5.7	6.2	670	109	96
FV-38CD8	240V	50Hz	Hi	CFM	387	367	362	336	305	259	212	165	117	730	119	104
FV-38CD8 05	240V	SUHZ	"	Sones	4.0	4.1	4.2	4.3	4.4	4.7	5.3	5.7	6.2	730	119	104

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard

<sup>301.</sup> Values shown are for installation type B: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

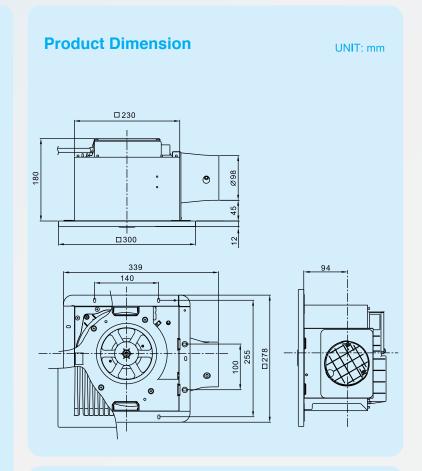
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

DC Motor Series



### FV-24JR2

- · DC (Direct Current) motor
- · Auto operation by motion sensor
- · Constant airflow
- · Variable air volume
- Delay timer (15 minutes)
- · Resonance Noise Absorption Structure





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Spec	Specification															
Madal	Vallana			C			VA/ - 11 - 3									
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	RPM	Watts*	watts
	220V	60Hz	Hi	CFM	88	88	88	88	63	34	5		-	853	10	8
EV 04 ID0		OUTZ	П	Sones	0.7	1.0	1.0	1.3	1.7	1.8	3.1			000	10	0
FV-24JR2 240V		FOL I-	5011-	CFM	88	88	88	88	63	34	5		_	050	10	
	24UV	40V 50Hz	Hi	Sones	0.7	1.0	1.0	1.3	1.7	1.8	3.1			853	10	8

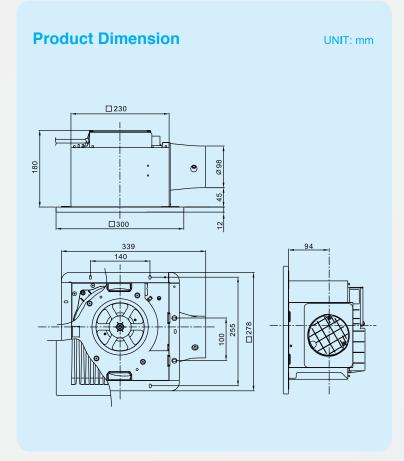
Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

## **CEILING MOUNT VENTILATION FAN**

DC Motor Series





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



#### FV-24JA2

- DC (Direct Current) motor
- Constant airflow
- · Variable air volume
- Delay timer (15 minutes)
- · Resonance Noise Absorption Structure

Spe	cifica	tion														
Model	Valtaga	_		C	CFM/S	ONE A	T STATI	C Pres	sure (ps	-inches	of H <sub>2</sub> O	)			*	**
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	RPM	Watts	Watts**
	220V	60Hz	Hi	CFM	88	88	88	88	63	34	5			000	40	
FV-24JA2	2200	ООПИ	П	Sones	0.6	0.9	1.0	1.4	1.6	1.9	3.2		_	839	10	8
1 V-240A2	240V 50Hz	EOU-	Hi	CFM	88	88	88	88	63	34	5	_	_	839	10	8
	240V	3UПZ	"	Sones	0.6	0.9	1.0	1.4	1.6	1.9	3.2	_	_	039	10	0

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

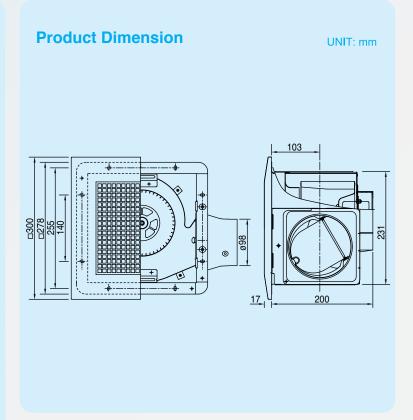
#### **CEILING MOUNT VENTILATION FAN**

**Metal Series** 



## **FV-24CMU1/** FV-24CMH1

- · All metal structure design
- · Long life ball bearing motor
- · Metallic components within air stream provides extra safety against fire
- · Reverse flow prevention shutter





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Speci	ification	1											
Model	Voltore	_	CF	M/SON	E AT ST	ATIC Pre	ssure (p:	s-inches	of H <sub>2</sub> O)				**
Model	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	RPM	Watts*	Watts**
	220V 60H	60Hz	CFM	55	40	37	20		_	_	495	13	12
FV-24CMU1	220V	00112	Sones	0.3	0.7	0.8	1.6				495	13	12
FV-24GIVIUT	240V	50Hz	CFM	55	44	41	24	_	_	_	F60	1.1	10
	24UV	3UHZ	Sones	0.3	0.8	1.0	1.4		_	_	562	14	13
	220V	60Hz	CFM	94	85	83	72	54	_	_	681	25	23
FV-24CMH1	2201	OUNZ	Sones	1.0	1.4	1.5	1.9	2.3		_	001	20	23
FV-24CIVITI	240V	50Hz	CFM	108	98	95	77	44		_	750	07	0.5
	240V	SUHZ	Sones	1.4	1.8	1.9	2.1	2.2			753	27	25

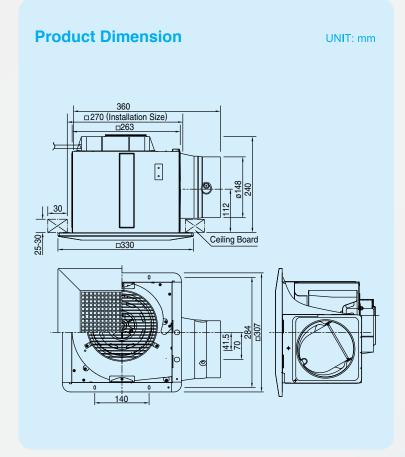
Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels.

the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H₂O.

the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

## **CEILING MOUNT VENTILATION FAN**

**Metal Series** 





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the Ceiling Mount Type models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



#### FV-27CMH1

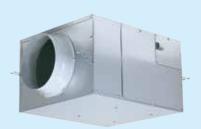
- · All metal structure design
- Long life ball bearing motor
- · Metallic components within air stream provides extra safety against fire
- · Reverse flow prevention shutter

Spec	ificatior	า											
Model	Valtana	_	CF	M/SON	E AT ST	ATIC Pres	ssure (ps	s-inches	of H <sub>2</sub> O)				**
Model	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.625	RPM	Watts*	Watts**
	220V	60Hz	CFM	208	184	178	144	108	79		045	40	40
FV-27CMH1	2200	00112	Sones	1.6	1.7	1.7	2.3	3.2	3.5		615	46	43
1 V-27 OIVII 11	240V	50Hz	CFM	219	194	188	150	110	70		669	46	43
	240 V	3002	Sones	1.9	1.9	2.0	2.4	3.4	3.1		009	40	43

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft shutter. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels.

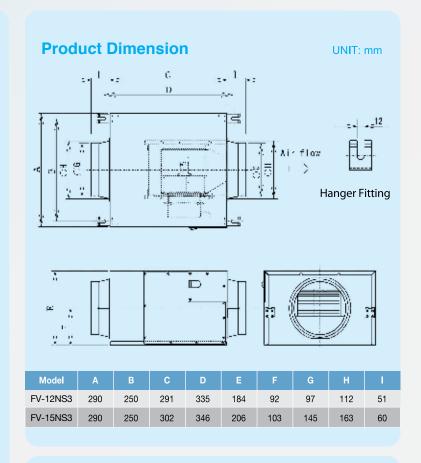
<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Single Phase Series



## **FV-12NS3/ FV-15NS3**

- · Long life condenser motor with thermal cut-off
- · Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- · Embedded terminal box
- · Noise absorption material adopted
- Compact size





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the low noise series cabinet fan models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Spe	cifica	tion															
Model	Vallana			(	CFM/S	ONE /	AT STA	TIC Pr	essure	(ps-in	ches o	f H <sub>2</sub> O)					
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	RPM	Watts <sup>*</sup>	Watts**
	220V	60Hz	Hi	CFM	114	105	102	87	65			-			1,460	26	23
FV-12NS3	2200	0UПZ	П	Sones	1.5	1.4	1.4	1.3	1.4			-			1,400	20	20
FV-12N33	240V	50Hz	Hi	CFM	102	90	86	67	39			_			1,342	27	22
	2400	SUFIZ	П	Sones	2.0	1.7	1.6	1.4	1.5			-			1,042	21	22
	0001/	60Hz	1.15	CFM	200	183	177	149	118	83		-	-		1,520	45	42
	220V	60HZ	Hi	Sones	2.7	2.5	2.4	2.3	2.2	2.0		-	_		1,520	45	42
FV-15NS3	0.40\/	5011-	118	CFM	193	177	172	139	94	20		-	_		1,373	47	37
	240V	50Hz	Hi	Sones	3.7	3.4	3.2	2.6	2.5	2.8		-	-		1,3/3	4/	3/

Performance certified is for installation type D: Ducted inlet, Ducted outlet.

Performance ratings do not include the effects of appurtenances (accessories). Speed (RPM) shown is nominal.

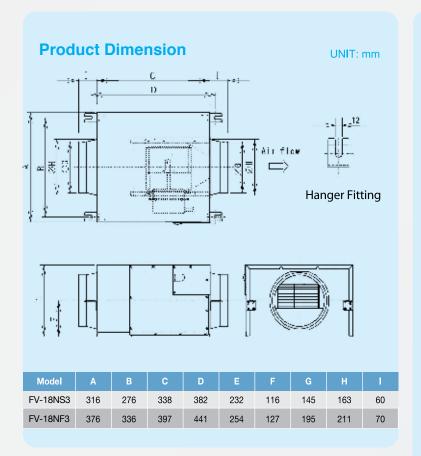
Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation Type D: ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction.

<sup>\*</sup> the Watts rating is only for IACA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

\*\* the Watts rating is only for IACA test method and it has the static pressure of 0 inch of H<sub>2</sub>O.

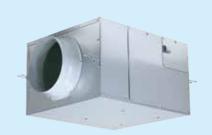
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Single Phase Series





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the low noise series cabinet fan models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



## **FV-18NS3/ FV-18NF3**

- · Long life condenser motor with thermal cut-off
- · Twin flow fan (sirocco fan)
- · Fan casing with tapered scroll
- Embedded terminal box
- · Noise absorption material adopted
- Compact size

Spe	cifica	tion															
Model	Valtana			C	CFM/S	ONE A	AT STA	TIC Pr	essure	(ps-in	ches o	f H <sub>2</sub> O)					
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	RPM	watts	Watts**
	220V	60Hz	Hi	CFM	274	261	258	241	222	196	137		_		1,470	80	73
FV-18NS3		OUFIZ	П	Sones	3.3	3.1	3.0	2.9	2.7	2.6	2.7		-		1,470	80	73
1 V-101055	240V	50Hz	Hi	CFM	281	263	259	232	200	163	34		-		1,342	84	68
	240V	3UFIZ	П	Sones	4.8	4.4	4.4	3.8	3.4	3.0	2.9		_		1,042	04	00
	0001/	COLI-	1.13	CFM	417	399	395	373	347	318	237		_		1,420	128	119
FV-18NF3	220V	60Hz	Hi	Sones	4.0	3.9	3.9	3.9	3.6	3.5	3.4		_		1,420	120	113
I V-TOINES	0.40\/	5011-	118	CFM	429	406	400	381	344	290	78		_		1,327	135	104
	240V	50Hz	Hi	Sones	5.6	5.4	5.4	5.1	4.6	4.3	4.2		_		1,327	133	104

Performance certified is for installation type D: Ducted inlet, Ducted outlet.

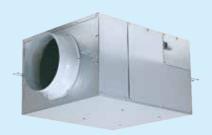
Performance ratings do not include the effects of appurtenances (accessories). Speed (RPM) shown is nominal.

Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation Type D: ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

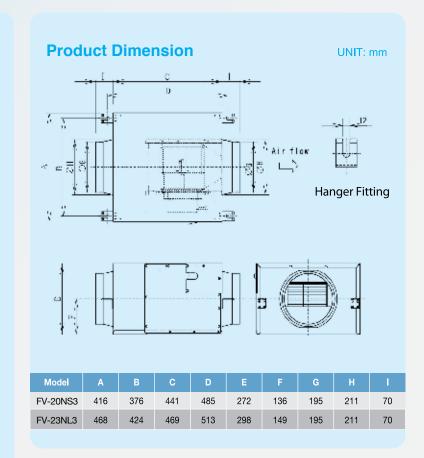
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Single Phase Series



## **FV-20NS3/ FV-23NL3**

- · Long life condenser motor with thermal cut-off
- · Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- · Noise absorption material adopted
- Compact size





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the low noise cabinet fan series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

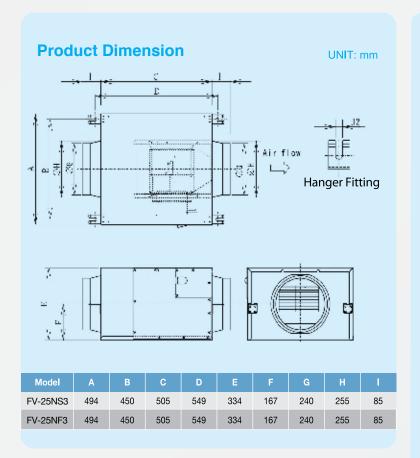
Spec	cifica	tion															
Model	Valtana			C	CFM/S	ONE A	AT STA	TIC Pr	essure	(ps-in	ches o	f H <sub>2</sub> O)					**
Model	voitage	Frequency	Speed	inches of H₂O	0	0.1	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	RPM	Watts	Watts**
	0001/	0011	111	CFM	469	459	456	444	433	413	354	275	-	-	1,380	170	159
FV-20NS3	220V	60Hz	Hi	Sones	4.0	4.0	3.9	3.8	3.9	4.0	4.1	4.2	-	-	1,360	170	159
FV-20IN53	240V	50Hz	Hi	CFM	517	500	495	464	424	382	265	110	-	-	1,328	175	135
	240 V	30112	1 11	Sones	6.0	5.8	5.8	5.4	5.1	4.8	4.5	4.5	-	_	1,320	173	100
	220V	60Hz	Hi	CFM	655	642	640	625	611	597	555	505	440	-	1,400	350	310
FV-23NL3	2200	00112	111	Sones	6.0	6.0	5.9	5.9	5.7	5.7	5.8	5.8	5.8	_	1,400	330	310
rv-23INL3	240V	50Hz	Hi	CFM	688	670	664	642	614	579	493	388	199	-	1,342	347	260
	2407	JUHZ	111	Sones	8.8	8.6	8.4	8.1	8.0	7.6	7.2	6.7	6.6	_	1,342	347	200

Performance certified is for installation type D: Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Speed (RPM) shown is nominal Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation Type D: ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of HzO.

\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Single Phase Series





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the low noise series cabinet fan models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



## FV-25NS3 / **FV-25NF3**

- · Long life condenser motor with thermal cut-off
- · Twin flow fan (sirocco fan)
- · Fan casing with tapered scroll
- Embedded terminal box
- Noise absorption material adopted
- Compact size

Spe	cifica	tion															
Model	Valtaga	_		(	CFM/S	ONE A	AT STA	TIC Pr	essure	(ps-in	ches o	f H <sub>2</sub> O)				*	**
Model	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	RPM	watts	Watts**
	220V 60H		Hi	CFM	940	924	919	899	877	857	790	710	610	502	1,380	460	425
FV-25NS3	2200	00HZ	П	Sones	7.1	7.1	7.1	7.0	6.8	6.8	6.7	6.7	6.7	6.9	1,360	400	423
1 4-251455	240V	50Hz	Hi	CFM	963	938	935	906	868	822	719	567	395	_	1,305	481	370
	2400	SUFIZ	П	Sones	10.1	9.8	9.7	9.3	9.2	8.8	8.0	7.5	8.2		1,000	401	370
	0001/	60Hz	Hi	CFM	1,016	1,000	995	975	954	933	875	803	710	590	1.420	680	520
EV OFNEO	220V	60HZ	"	Sones	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.6	7.5	7.5	1,420	060	520
FV-25NF3	240V	50Hz	Hi	CFM	1,057	1,048	1,040	1,010	972	922	811	660	473		1,330	E07	400
	2407	SUFIZ	П	Sones	12.1	11.9	11.5	11.1	10.6	9.8	8.7	8.7	10.3	_	1,330	537	430

Performance certified is for installation type D: Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation Type D: ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction.

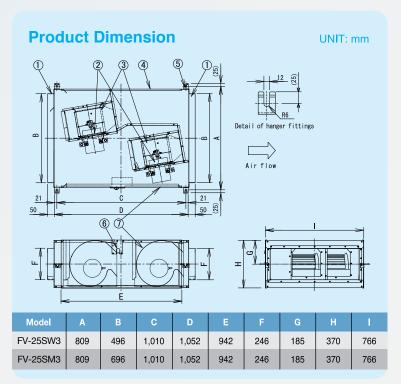
\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

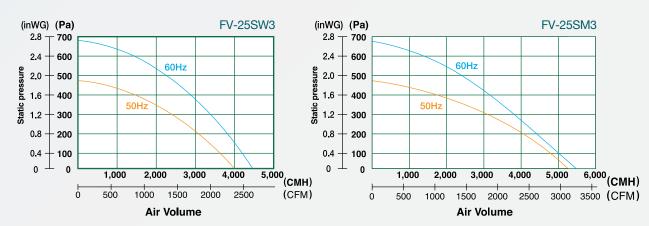
Three Phase Series



- Long life condenser motor with thermal cut-off
- Twin flow fan (sirocco fan)
- · Fan casing with tapered scroll
- Embedded terminal box
- · Noise absorption material adopted
- Compact size



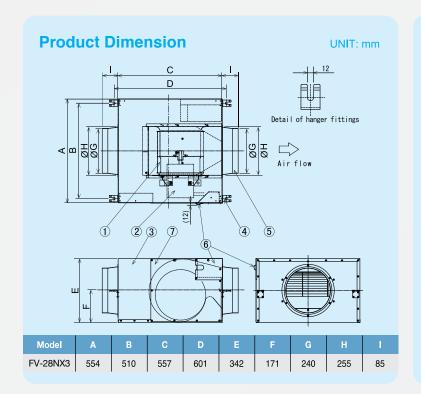
#### Performance Data [380V 50/60Hz]



Specific	cation										
Model No.	Phase	Voltage [V]	Frequency [Hz]	Consumption [W]	RPM [min <sup>-1</sup> ]	Air Vo	olume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-25SW3	3	380	50	940	1,375	4,000	2,354	43	60	250 x 500	250
FV-200VV0	3	300	60	1,450	1,530	4,500	2,648	45	00	250 X 500	250
FV-25SM3	3	380	50	1,180	1,345	5,200	3,060	45	60	250 x 700	250
FV-200IVIO	3	300	60	1,750	1,470	5,500	3,237	46	00	230 X 700	250

Note: The value in specification tables are representative characteristic value at 380V 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

Three Phase Series

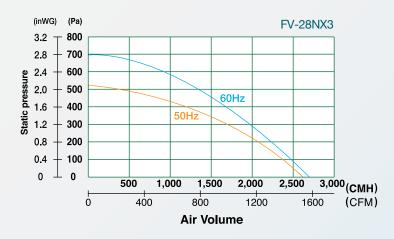


#### **FV-28NX3**



- Long life condenser motor with thermal cut-off
- · Twin flow fan (sirocco fan)
- Fan casing with tapered scroll
- Embedded terminal box
- · Noise absorption material adopted
- Compact size

#### Performance Data [380V 50/60Hz]



Specific	cation										
Model No.	Phase	Voltage [V]	Frequency [Hz]	Consumption [W]	RPM [min <sup>-1</sup> ]	Air Vo	olume [CFM]	Noise [dB(A)]	Weight [kg]	Duct Size [mm]	Impeller Diameter [mm]
FV-28NX3	3	380	50	600	1,295	2,600	1,530	44	28	ø250	280
5	•		60	840	1,380	2,650	1,560	45			

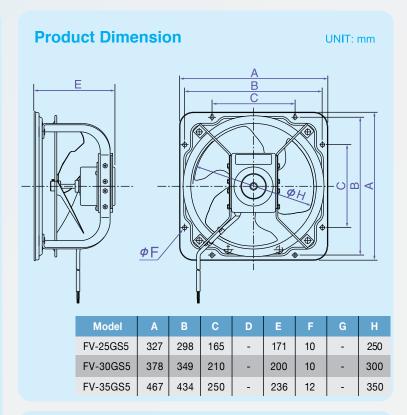
Note: The value in specification tables are representative characteristic value at 380V 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

**High Pressure Series** 



## FV-25GS5 / FV-30GS5 FV-35GS5

- · Single phase
- · Reversible by adjusting wiring and blade
- Bell mouth construction with distinctive wave-shaped blade
- · Durable powder coating
- High performance motor with thermal cutoff
- Ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional Shutter available





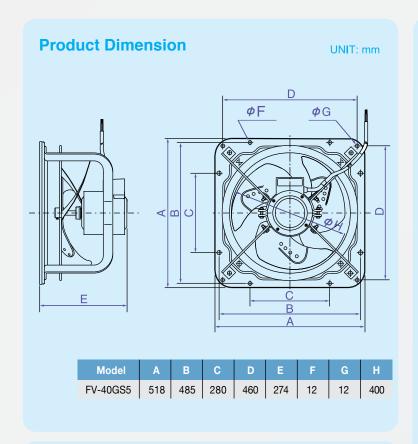
Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the industrial series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Specif	ficatio	n											
	.,	_		CFM/S0	ONE AT ST	ATIC Pres	sure (ps-in	ches of H <sub>2</sub>	2O)				
Model	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.05	0.075	0.1	0.125	0.25	0.375	RPM	Watts*	Watts**
	2201/	COLI-	CFM	788	742	715	686	647	-	-	1570	61	57
FV-25GS5	220V	60Hz	Sones	4.9	4.7	4.5	4.5	4.6	-	-	1570	01	31
FV-23G33	2401/	V 50Hz	CFM	701	657	633	600	565	187	-	1400	48	44
	240V	30112	Sones	3.8	3.6	3.6	3.5	3.6	8.6	-	1400	40	44
	0001	COL 1-	CFM	1308	1247	1217	1184	1153	772	-	1460	129	119
FV-30GS5	220V	60Hz	Sones	9.0	9.0	9.1	9.0	9.1	9.4	-	1400	129	119
FV-30G35	240V	50Hz	CFM	1177	1119	1090	1058	1026	561	243	1315	106	98
	2400	SUFIZ	Sones	5.5	5.5	5.6	5.6	5.8	11.1	12.0	1315	106	96
	0001/	001.1-	CFM	1850	1788	1752	1712	1669	1456	600	1640	178	161
EV 05005	220V	60Hz	Sones	11.9	11.6	12.0	12.4	13.6	14.6	13.4	1040	170	101
FV-35GS5	240V	50Hz	CFM	1615	1548	1506	1458	1411	1147	390	1405	120	100
	2400	30HZ	Sones	8.6	8.2	8.2	8.0	8.0	12.6	13.4	1435	130	122

Performance certified is for installation type A: Free Inlet, Free Outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels. \* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H₂O.

\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**High Pressure Series** 





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the industrial series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



#### **FV-40GS5**

- Single phase
- Reversible by adjusting wiring and blade
- Bell mouth construction with distinctive wave-shaped blade
- · Durable powder coating
- High performance motor with thermal cutoff
- Ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- · Optional Shutter available

Speci	ficati	on											
Model	Voltage	Frequency		CFI	M/SONE A	T STATIC I	Pressure (p	s-inches o	of H <sub>2</sub> O)		DDM	14/-44-4	\\\-44-**
Wodei	voitage	Frequency	inches of H <sub>2</sub> O	0	0.05	0.075	0.1	0.125	0.25	0.375	RPM	Watts*	Watts**
	220V	60Hz	CFM	2677	2581	2535	2488	2440	2170	2050	1550	294	270
EV 4000E	2200	60HZ	Sones	20.0	20.0	19.7	19.4	19.3	18.9	19.9	1550	294	270
FV-40GS5	240V	50Hz	CFM	2135	2067	2035	2000	1965	1800	1480	1440	164	151
	24UV	30HZ	Sones	9.0	8.5	8.7	8.7	8.7	13.0	14.2	1440	104	131

Performance certified is for installation type A: Free Inlet, Free Outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

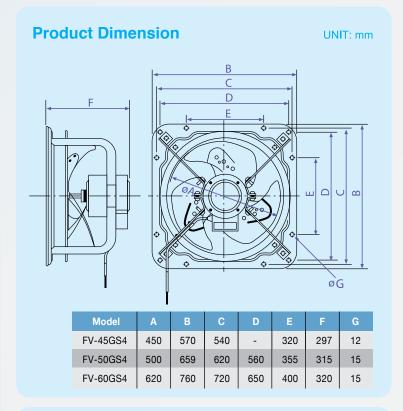
<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**High Pressure Series** 



## FV-45GS4 / FV-50GS4 / FV-60GS4

- · Single phase
- · Reversible by adjusting wiring and blade
- Bell mouth construction with distinctive wave-shaped blade
- · Durable powder coating
- High performance motor with thermal cutoff
- Ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional Shutter available





Panasonic Ecology Systems Co., Ltd. certifies that the industrial series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

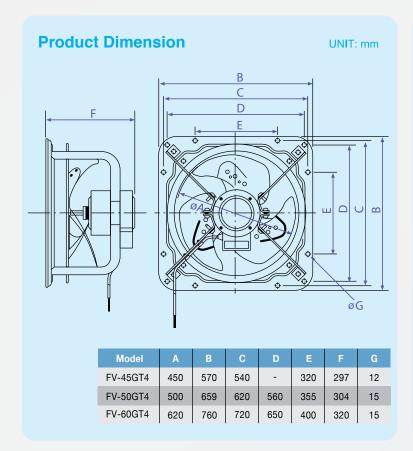
Specific	cation									
Model no.	Voltage	Frequency	CFM/	SONE AT STA	TIC Pressure (	ps-inches of H	2O)	RPM	Watts*	Watts**
Model no.	Voltage	rrequency	inches of H <sub>2</sub> O	0	0.2	0.3	0.4	T IT IVI	FOR AMCA	FOR IEC
	220V	60Hz	CFM	3278	3131	3001	2795	1500	0.40	005
FV-45GS4	2200	00HZ	Sones	10	10.4	10.6	10.8	1563	346	325
FV-45G54	240V	50Hz	CFM	2854	2648	2454	2030	1430	277	241
	2400	30112	Sones	7.8	7.7	7.8	9.4	1430	211	241
	0001/	0011-	CFM	3884	3443	3090	2501	1000	0.47	000
TV 50004	220V	60Hz	Sones	10.9	11.3	11.5	11.8	1080	347	326
FV-50GS4	0.40\/	5011-	CFM	3354	2854	2266	912	968	293	271
	240V	50Hz	Sones	11.7	13.8	14.5	15.4	900	293	2/1
	0001/	0011-	CFM	5038	4349	3943	3560	1000	004	001
FV-60GS4	220V	60Hz	Sones	10.1	9.8	9.5	10.1	1088	384	361
rv-00G54	0.40\/	FOL I-	CFM	4402	3855	3366	2972	980	289	263
	240V	50Hz	Sones	10.3	8.6	8.5	11.5	900	209	203

Performance certified is for installation type A: Free Inlet, Free Outlet. The Speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**High Pressure Series** 

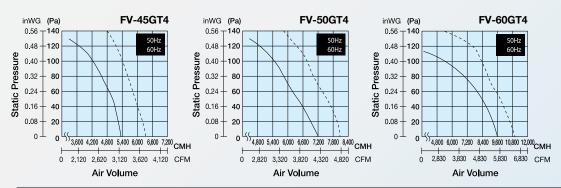


## FV-45GT4/ FV-50GT4/ FV-60GT4



- · Three Phase
- · Reversible by adjusting wiring and blade
- Bell mouth construction with distinctive wave-shaped blade
- · Durable powder coating
- High performance motor with thermal cutoff
- Ambient temperature range from -10°C to +50°C
- Possible to install horizontally or vertically
- Optional Shutter available

#### Performance Data [380V 50/60Hz]



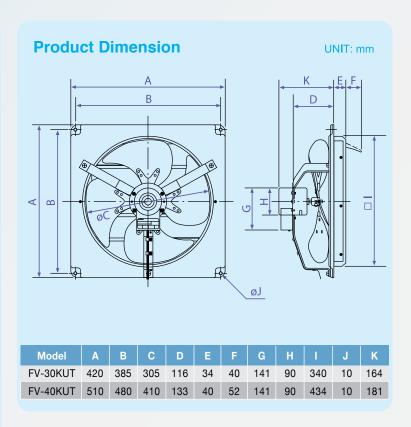
Specification																		
Model No.	Voltage	Hz	Consumption	RPM	Air Vo	olume	Noise	Weight										
woder no.	[V]	П2	[W]	[min <sup>-1</sup> ]	[CMH]	[CFM]	[dB(A)]	[Kg]										
FV-45GT4	380	50	220	1,450	5,520	3,249	52	18.5										
FV-45G14	360	60	330	1,690	6,420	3,779	56	10.0										
FV-50GT4	380	50	320	1,400	6,960	4,097	54	28.5										
FV-50G14	360	60	475	1,590	8,010	4,715	58	20.0										
FV-60GT4	290	50	310	940	9,420	5,544	49	34										
FV-00G14	380	380	380	380	380 -	380 -	380	380	380	380	380	60	450	1,070	10,920	6,427	53	04

**Shutter Series** 

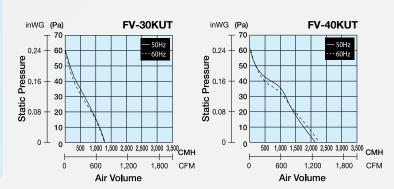


#### FV-30KUT / FV-40KUT

- Used in factories, warehouses or other locations in where powerful ventilation is necessary
- Metal large blade assembly for abundant air volume
- Powerful, efficient and durable condenser motor
- Ambient temperature range from -10°C to +50°C

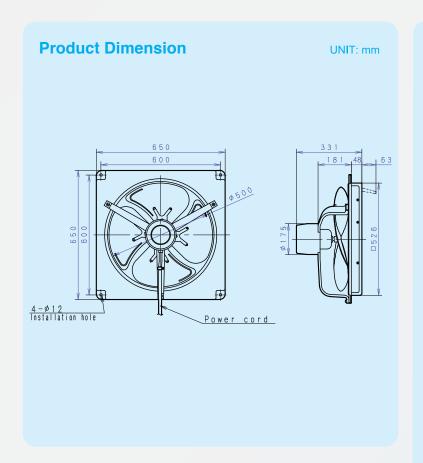


#### Performance Data [220V 50Hz/60Hz]



Specific	Specification																												
Model No.	Voltage	Frequancy	Consumption	RPM	Air Vo	olume	Noise	Weight																					
Model No.	[V]	[Hz]	[w]	[min <sup>-1</sup> ]	[CMH]	[CFM]	[dB(A)]	[Kg]																					
EV 20KUT	000	50	42	1,185	1,220	718	46	4.9																					
FV-30KUT	220	60	51	1,255	1,270	747	47	4.0																					
EV 40KLIT	50		61	1,175	2,060 1,212		49	6.4																					
FV-40KUT	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220		60	76	1,260	2,190	1,289	51	0.4

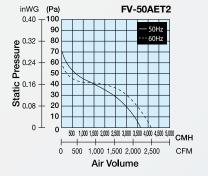
**Shutter Series** 



#### FV-50AET2

- Used in factories, warehouses or other locations in where powerful ventilation is necessary
- Metal large blade assembly for abundant air volume
- Powerful, efficient and durable condenser motor
- Ambient temperature range from -10°C to +50°C

#### Performance Data [220V 50Hz/60Hz]



	Specific	ation							
I	Madal Na	Voltage	Frequancy	Consumption	RPM	Air Vo	olume	Noise	Weight
	Model No.	[V]	[Hz]	[W]	[min <sup>-1</sup> ]	[CMH]	[CFM]	[dB(A)]	[Kg]
		000	50	108	920	3,630	2,137	54	11.5
	FV-50AET2	220	60	130	1,000	4,200	2,472	58	11.0

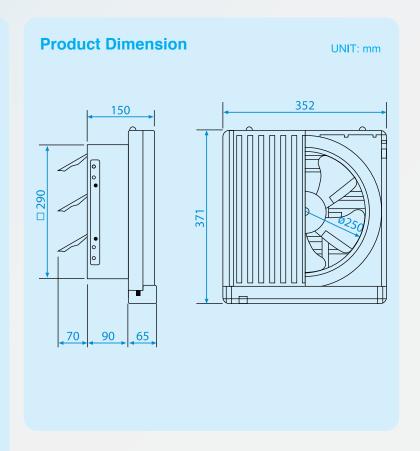
Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz. RPM data is for reference only. Values may vary subject to different conditions.

Filter Series

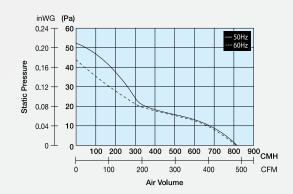


#### FV-25AUF1

- · Recommend to use in kitchen
- Automatic Shutter
- Perforated aluminum filter with hydrophobic coating
- · Large capacity oil cup
- · Oil indicator on oil cup
- High exhaust air volume under actual usage condition (20Pa)



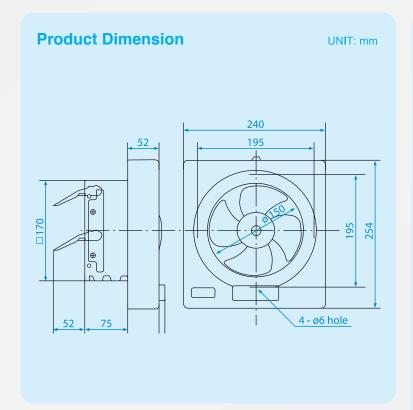
#### Performance Data [220V 50Hz/60Hz]



Specific	cation	1							
Model No.	Voltage [V]	Frequency [Hz]	Consumption [W]	RPM [min <sup>-1</sup> ]	Air Vo	olume [CFM]	Noise [dB(A)]	Weight [Kg]	Instailation space [mm]
EV 05 ALIE1	000	50	34	1,100	835	491	42	0.0	200 200
FV-25AUF1	220	60	34	1,060	820	483	42	2.8	300 x 300

Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

**Automatic Shutter Series** 





Panasonic Ecology Systems Guangdong Co., Ltd. certifies that the wall mount series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



#### FV-15AST1

- · Condenser motor with thermal cutoff
- · Lubricated sintered bush for long life operation
- High performance propeller fan adopted
- · Automatic shutter with plastic cushions
- Orifice equipped with oil cup

Specific	cation	l							
Model	Voltage	Frequency		NE AT STATIC F	Pressure (ps-inch	es of H <sub>2</sub> O)	RPM	Watts*	Watts**
Wodel	Voltage	Trequency	inches of H <sub>2</sub> O	0	0.025	0.05	111 141	For AMCA	For IEC
	220V	60Hz	CFM	157	122	65	1533	20.6	19.0
FV-15AST1	2200	00112	Sones	2.5	1.9	2.3	1555	20.0	19.0
FV-13A311	240V	50Hz	CFM	154	120	63	1453	20.1	19.0
	∠ <del>4</del> 0V	30112	Sones	1.7	1.4	2.1	1453	∠0.1	19.0

Performance certified is for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a backdraft shutter. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. Speed (RPM) shown in nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H₂O.

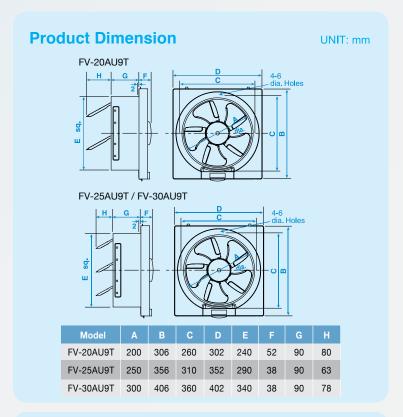
<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**Automatic Shutter Series** 



## FV-20AU9T/FV-25AU9T/ FV-30AU9T

- · HP condenser motor with thermal cutoff
- Well lubricated bearing for long lif operation
- Propeller fan incorporated with advanced blade design (except FV-30AU9T)
- · Automatic shutter
- Single speed





Panasonic Ecology Systems Co., Ltd. and Panasonic Ecology Systems (Thailand) Co., Ltd. certify that the wall mount series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

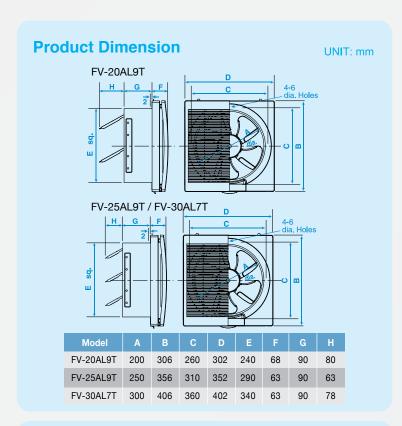
Specification												
Model	Voltage	Frequency	CFM/	SONE AT STA	TIC Pressure	(ps-inches of	H <sub>2</sub> O)	2214	Watts*	Watts**		
Wiodei	Voitage	rrequency	inches of H <sub>2</sub> O	0	0.02	0.04	0.06	RPM	For AMCA	For IEC		
EV COALIOT	220V	60Hz	CFM Sones	356 2.3	315 2.4	271 1.8	227 2.8	1343	24.5	22		
FV-20AU9T	240V	50Hz	CFM Sones	338 2.1	294 2.4	253 2	171 3.5	1234	23.5	21.5		
EV OF ALIOT	220V	60Hz	CFM Sones	515 2.5	421 2.3	330 1.9	227 3	1113	34.3	31		
FV-25AU9T	240V	50Hz	CFM Sones	527 5.8	465 5.6	400 5.2	347 4.8	1143	35.2	32		
EV COALIOT	220V	60Hz	CFM Sones	586 2.2	486 2.2	335 4.1	174 2.4	874	40.4	38		
FV-30AU9T	240V	50Hz	CFM Sones	624 3.7	565 3.6	491 3.6	312 4.1	935	41.5	39		

Performance certified is for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a backdraft shutter. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of  $H_2O$ . The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**Automatic Shutter Louver Series** 





Panasonic Ecology Systems Co., Ltd. and Panasonic Ecology Systems (Thailand) Co., Ltd. certify that the wall mount series models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



# FV-20AL9T/FV-25AL9T/FV-30AL7T

- HP condenser motor with thermal cutoff
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30AL7T)
- · Automatic shutter
- Single speed

Specific	Specification													
Model	Voltage	Frequency	CFM/	SONE AT STA	TIC Pressure	(ps-inches of	H <sub>2</sub> O)	RPM	Watts*	Watts**				
Model	Voltage	Trequency	inches of H <sub>2</sub> O	0	0.02	0.04	0.06	1111111	For AMCA	For IEC				
EV COALOT	220V	60Hz	CFM Sones	327 2.8	294 2.7	256 4.3	162 5.3	1277	24.2	22				
FV-20AL9T	_9T240V	50Hz	CFM Sones	300 2.6	274 2.5	234 3.8	141 3.8	1228	23.5	21.5				
EV 25 ALOT	220V	60Hz	CFM Sones	465 3.5	409 3.2	350 3	250 5.4	1116	40	36				
FV-25AL9T	240V	50Hz	CFM Sones	468 5.5	418 5.9	371 5	327 5.2	1152	35.2	32				
EV 2041 7T	220V	60Hz	CFM Sones	503 2.6	374 3	230 3.1	119 2.5	833	42	38				
FV-30AL7T	240V	50Hz	CFM Sones	571 3.8	494 3.7	406 5.1	247 3.8	921	44.3	40				

Performance certified is for installation type A: Free inlet, Free outlet. Performance ratings include the effects of an inlet grill and backdraft shutter. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H2O. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H2O.

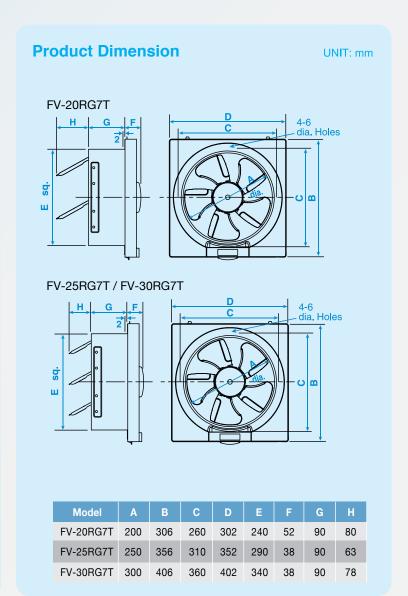
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Reversible Series



## FV-20RG7T/FV-25RG7T/ FV-30RG7T

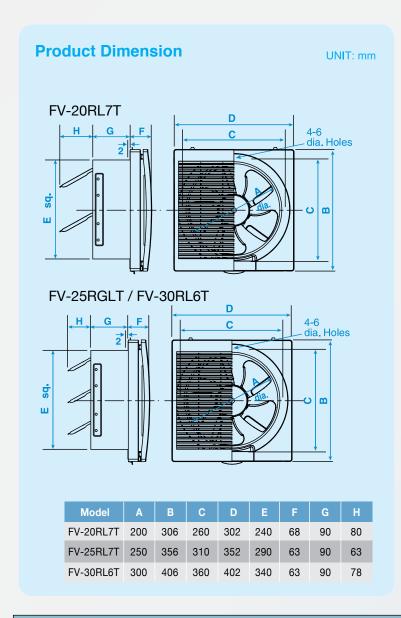
- Reversible
- On-off and reverse operated by pull cord switch
- HP condenser motor with thermal cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30RG7T)
- · Shutter operated by pull cord



Specific	Specification												
Madal Na		Voltage	Frequency	Consumption	RPM	Air Vo	olume	Noise	Weight	Installation space			
Model No.		[V]	[Hz]	[W] <sup>'</sup>	[min-1]	[CMH]	[CFM]	[dB(A)]	[kg]	[mm]			
			50	20	1,260	580	341	36					
EV 00DCZT	Exhaust		60	24	1,410	630	371	39	0.0	050 050			
FV-20RG7T	Intake	220	50	15	1,150	405	238	46	2.2	250 x 250			
	intake		60	17	1,140	355	209	46					
	Cubauat		50	27	1,090	945	556	38					
EV 05DC7T	Exhaust	l I	60	31	1,110	950	559	39	2.4	300 x 300			
FV-25RG7T	Intake	220	50	21	1,010	600	353	45	2.7	000 x 000			
	intake		60	23	970	560	330	44					
			50	31	885	1,165	686	39					
EV 20DC7T	Exhaust		60	38	800	1,000	589	38	2.8	350 v 350			
FV-30RG7T	Intoko	220	50	24	840	700	412	43	2.0	350 x 350			
	Intake		60	26	810	680	400	42					

Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

Reversible Louver Series





## FV-20RL7T/FV-25RL7T/ FV-30RL6T

- Reversible
- On-off and reverse operated by pull cord switch
- HP condenser motor with thermal cutoff
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design (except FV-30RL6T)
- · Shutter operated by pull cord

#### **Specification**

Model No.		Voltage	Frequency	Consumption	RPM	Air Vo	olume	Noise	Weight	Installation space														
Woder No.		[V]	[Hz]	[W]	[min-1]	[CMH]	[CFM]	[dB(A)]	[kg]	[mm]														
			50	20	1,240	548	321	39																
FV-20RL7T	Exhaust	220	60	24	1,290	570	335	43	2.4	250 x 250														
FV-20KL/1	Intake	220	50	15	1,190	370	218	46	2.4	250 X 250														
	IIIIake		60	17	1,180	340	200	46																
			50	29	1,100	840	494	43																
EV OF DI ZT	Exhaust	220	60	33	1,100	835	491	43	2.7	300 x 300														
FV-25RL7T	Intake	220	50	21	1,035	580	341	43																
	iiiake		60	23.5	1,035	560	330	44.5																
			50	31	890	990	583	44																
FV-30RL6T	Exhaust	220	60	38	880	945	558	43	3.1	350 x 350														
	Intake	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	50	25	770	600	353	43	0.1	000 x 000
	iiiake							60	26	770	600	353	44											

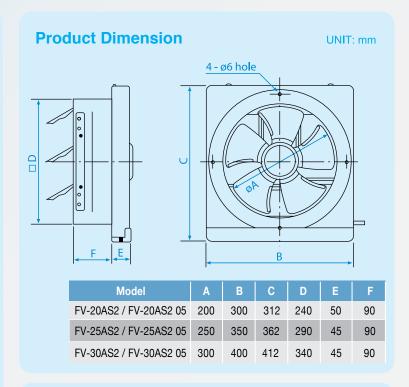
Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

#### **Metallic Series**



### FV-20AS2 / FV-25AS2 / FV-30AS2 / FV-20AS2 05 / FV-25AS2 05 / FV-30AS2 05

- · Condenser motor with thermal cutoff
- Well lubricated bearing for long life operation
- High performance propeller fan adopted
- · Automatic shutter
- Powder painted metallic orifice, blade and oil cup
- Detachable oil cup



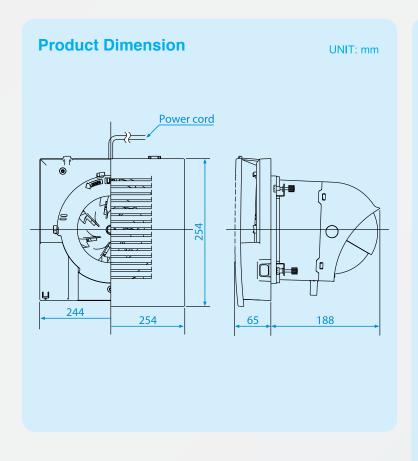


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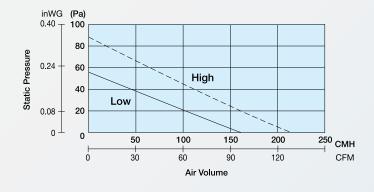
Specification												
Model	Valtaria	F	CFM/SO	NE AT STATIC Pres	ssure (ps-inches of	H <sub>2</sub> O)	RPM	Watts*	Watts**			
wodei	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.025	0.05	KPIVI	For AMCA	For IEC			
EV 00400	220V	60Hz	CFM Sones	330 1.7	259 1.9	183 3.9	1358	25.5	21.5			
FV-20AS2	240V 50Hz		CFM Sones	296 1.5	198 1.7	151 3.2	1252	22.4	19.5			
FV-20AS2 05	240V	50Hz	CFM Sones	296 1.5	198 1.7	151 3.2	1252	22.4	19.5			
EV 05 4 C0	220V	60Hz	CFM Sones	522 1.9	414 1.6	240 2.2	1277	35.5	30.5			
FV-25AS2	240V	50Hz	CFM Sones	486 2.0	434 2.0	314 2.4	1194	35.1	29.5			
FV-25AS2 05	240V	50Hz	CFM Sones	486 2.0	434 2.0	314 2.4	1194	35.1	29.5			
EV 00400	220V	60Hz	CFM Sones	637 2.0	400 2.7	85 2.2	1088	39.8	34.5			
FV-30AS2 240	240V	50Hz	CFM Sones	706 2.9	620 2.3	498 2.2	1175	38.1	34.0			
FV-30AS2 05	240V	50Hz	CFM Sones	706 2.9	620 2.3	498 2.2	1175	38.1	34.0			

Performance certified is for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a backdraft shutter. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels. \* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O. \*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

High Pressure Deluxe Series



#### Performance Data [220V 50Hz/60Hz]





#### **FV-15WJ1**

- · Rain proof and wind resistance
- Condenser motor with thermal cutoff
- Well lubricated bearing for long life operation
- · Highly efficient axial fan adopted
- Electrically operated shutter with dome shaped hood
- Integral rocker switch for speed selectable

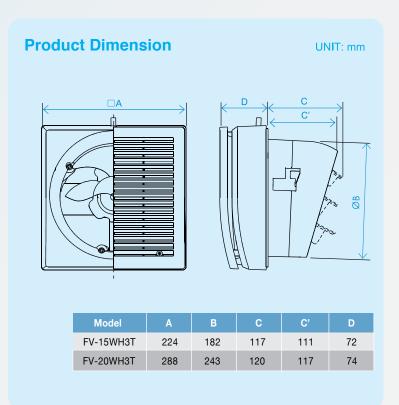
Specifi	icatior	1															
Model No.	Voltage	Frequency		Consumption	RPM	Air Vo	olume	Noise	Weight	Installation Size							
WOOCH NO.	[V]	[Hz]		[W]	[min <sup>-1</sup> ]	[CMH]	[CFM]	[dB(A)]	[Kg]	[mm]							
		50	H	22	1,878	205	121	46									
FV-15WJ1	220	50	50	50	50	30	30	30	30	Lo	19	1,325	145	85	36	2.4	~ 196 ~ 100
FV-15VVJ1	220	60	Hi	27	2,012	220	129	48	2.4	ø 186 - ø 190							
			Lo	20	1,394	153	90	38									

**Electric Shutter Series** 



## FV-15WH3T / FV-20WH3T

- Electrically Operated Shutter
- Advance design hood structure to prevent from rain and wind.
- Suitable for thickness of 3mm to 25mm
- Simple and Easy installation, no need of any silicon seal or gasket





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#### **Specification**

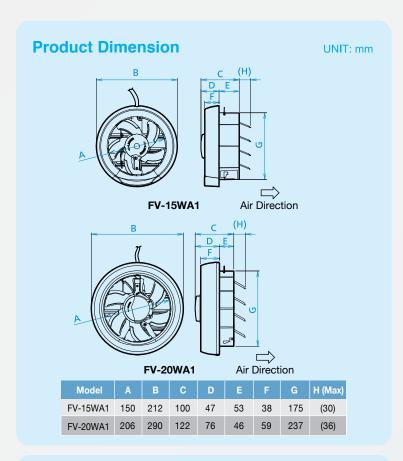
Model	Voltage	Frequency	CFM/SC	ONE AT STAT	IC Pressure	(ps-inches of	H <sub>2</sub> O)	RPM	Watts*	Watts**		
inidae.	Tonago	rioquonoy	inches of H <sub>2</sub> O	0	0.05	0.1	0.15		FOR AMCA	FOR IEC		
EV 45V/10T	220V	60Hz	CFM Sones	127 3.0	94 3.6	63 3.5	31 3.9	2440	14.6	13		
FV-15WH3T	240V	50Hz	CFM Sones	127 2.3	95 2.7	68 3.5	50 2.8	2537	16	15		
EV 20MU2T	220V	60Hz	CFM Sones	250 3	188 3.9	127 4.5	78 4.2	1517	24.4	22		
FV-20WH3T	240V	_		50Hz	CFM Sones	230 2.8	147 3.8	103 3.4	53 4	1333	23.4	22

Performance certified is for installation type A: Free Inlet, Free Outlet. Performance ratings include the effects of inlet grille and shutter. The Speed (RPM) and Watts rating shown are at the static pressure of 0 inch of  $H_2O$ . The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

 $<sup>^{\</sup>star}$  the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

**Automatic Shutter Series** 





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## FV-15WA1 / FV-20WA1

- Automatic shutter
- High Performance Condenser motor with thermo cut-off
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advance blade design
- Removable blade for easy maintenance

Specific	Specification													
Model	Voltage	Frequency	CFM/SC	NE AT STAT	IC Pressure (	ps-inches of	H <sub>2</sub> O)	RPM	Watts*	Watts**				
Wiodei	Voltage	rrequency	inches of H <sub>2</sub> O	0	0.02	0.04	0.06	NEW	FOR AMCA	FOR IEC				
EV 45V/A4	220V	60Hz	CFM Sones	124 3.6	109 4.5	91 4.1	79 4	2021	19.6	18				
FV-15WA1	240V	50Hz	CFM Sones	124 3.5	109 4.5	93 4.1	78 3.8	2062	18.2	16				
EV 00\\/A1	220V	60Hz	CFM Sones	206 3.7	147 3.8	124 3.5	94 3.3	1385	18.4	17				
FV-20WA1	240V	50Hz	CFM Sones	165 3.4	153 3.3	141 3.4	131 3.4	1375	18.6	17.5				

Performance certified is for installation type A: Free Inlet, Free Outlet. Performance ratings include the effects of a shutter. The Speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

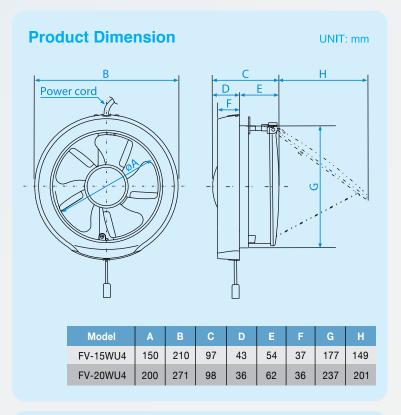
\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Cord-operated Shutter Series



- HP condenser motor with thermal cutoff
- Well lubricated bearing for long life operation
- Propeller fan incorporated with advanced blade design
- Shutter operated by pull cord
- Metallic shutter axis





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Specific	Specification													
Model	Voltage	Frequency		IE AT STATI	C Pressure (	os-inches of	H <sub>2</sub> O)	RPM	Watts*	Watts**				
Wiodei	Voltage	requency	inches of H <sub>2</sub> O	0	0.01	0.02	0.03	RPIVI	FOR AMCA	FOR IEC				
EV 45VVIA	220V	60Hz	CFM Sones	105 0.9	94 0.9	79 2.2	66 2.4	1425	9.7	8.9				
FV-15WU4	240V	50Hz	CFM Sones	124 1.4	115 1.6	104 1.8	94 3.7	1722	10.3	9.5				
			inches of H <sub>2</sub> O	0	0.02	0.03	0.04							
FV-20WU4	220V	60Hz	CFM Sones	188 0.8	129 1.2	112 1.8	88 1.4	980	19.2	17.9				
1 7 200004	240V	50Hz	CFM Sones	221 1.8	168 1.6	141 2.2	118 2.0	1096	18.5	17.2				

Performance certified is for installation type A: Free Inlet, Free Outlet. Performance ratings include the effects of a shutter. The Speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H₂O. \*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

							omp									
Model no.	Voltage	Frequency	Speed	inches of H <sub>2</sub> O			_				-inche			RPM	Watts*	Watts*
					0	0.1		0.25	0.375	0.5	0.625	0.75	0.875			
	220V	60Hz	-	CFM	41	28	25 0.6	-	-	-	-	-	-	815	11.4	10
FV-17CU8				Sones CFM	0.3 48	0.5 40	37	-	-	-	-	-	-			
	240V	50Hz	-	Sones	0.3	0.4	0.6	_	_		_	-	-	830	12.1	10.5
				CFM	77	66	64	44	_	_	_	_	-			
	220V	60Hz	-	Sones	0.4	0.4	0.6	1.5	_	_	_	_	-	640	16.5	15.5
FV-24CU8				CFM	87	77	74	50	-	_	-	-	-			
	240V	50Hz	-	Sones	0.5	0.7	0.7	1.5	-	-	-	-	-	680	14.9	14
	0001/	2011		CFM	94	79	77	58	-	-	-	-	-	750	47.0	10.5
EV 040D0	220V	60Hz	-	Sones	0.6	0.7	0.7	1.5	-	-	-	-	-	750	17.6	16.5
FV-24CD8	240V	50Hz		CFM	104	90	85	63	-	-	-	-	-	800	18.8	17.5
	24UV	50H2	-	Sones	0.8	0.9	1.0	1.6	-	-	-	-	-	800	10.0	17.5
	220V	60Hz		CFM	105	93	91	75	47	ı	-	ı	-	810	23.4	22
EV 04CU0	2200	OUHZ	-	Sones	0.8	0.9	1.0	1.3	2.2	ı	-	ı	-	810	23.4	22
FV-24CH8	240V	50Hz	_	CFM	115	109	93	71	21	-	-	-	-	880	23.7	22
	Z-10 V	30112		Sones	1.2	1.2	1.2	1.3	1.8	-	-	-	-		20.7	
	220V	60Hz	Hi	CFM	180	160	154	117	76	34	-	-	-	578	36	33
FV-27CH9	2200	00112	'''	Sones	1.0	1.1	1.3	1.7	2.5	2.5	-	-	-	370	30	- 55
	240V	50Hz	Hi	CFM	198	179	172	128	78	28	-	-	-	618	38	34
				Sones	1.4	1.5	1.6	1.8	2.6	2.6	-	-	-			
	220V	60Hz	Hi	CFM	229	201	195	159	123	86	49	-	-	609	53	48
FV-32CD9				Sones	1.2	1.3	1.4	1.7	2.2	2.7	3.3	-	-			
		50Hz	Hi	CFM Sones	257 1.6	236 1.7	1.8	192	147 2.5	99 3.0	53 3.6	-	-	668	57	50
				CFM	356	334	329	305	2.3	236	199	162	125			
FV-38CD8	220V	60Hz	Hi	Sones	3.4	3.5	3.6	3.7	3.9	4.2	5.1	5.7	6.2	670	109	98
FV-38CD8				CFM	387	367	362	336	305	259	212	165	117			
FV-38CD8 05	240V	50Hz	Hi	Sones	4.0	4.1	4.2	4.3	4.4	4.7	5.3	5.7	6.2	730	119	104
1 0002000				CFM	88	88	88	88	63	34	5	-	-			
	220V	60Hz	Hi	Sones	0.7	1.0	1.0	1.3	1.7	1.8	3.1	-	-			
FV-24JR2				CFM	88	88	88	88	63	34	5	-	-	853	10	8
	240V	50Hz	Hi	Sones	0.7	1.0	1.0	1.3	1.7	1.8	3.1	-	-			
	2201/	വേ–	LI:	CFM	88	88	88	88	63	34	5	-	-			
FV-24JA2	220V	60Hz	Hi	Sones	0.6	0.9	1.0	1.4	1.6	1.9	3.2	ı	-	839	10	8
· V-ZTUMZ	240V	50Hz	Hi	CFM	88	88	88	88	63	34	5	ı	-	003	10	"
	∠ <del>4</del> ∪V	JUHZ	171	Sones	0.6	0.9	1.0	1.4	1.6	1.9	3.2	-	-			
	220V	60Hz	_	CFM	55	40	37	20	-	-	-	-	-	495	13	12
FV-24CMU1		30172		Sones	0.3	0.7	0.8	1.6	-	-	-	-	-	,00	10	- '-
	240V	50Hz	_	CFM	55	44	41	24	-	-	-	-	-	562	14	13
				Sones	0.3	0.8	1.0	1.4	-	-	-	-	-	002		.0
	220V	60Hz	-	CFM	94	85	83	72	54	-	-	-	-	681	25	23
FV-24CMH1				Sones	1.0	1.4	1.5	1.9	2.3	-	-	-	-			
	240V	50Hz	-	CFM	108	98	95	77	44	-	-	-	-	753	27	25
				Sones	1.4	1.8	1.9	2.1	2.2	70	-	-	-			
	220V	60Hz	-	CFM	208	184	178	144	108	79	-	-	-	615	46	43
FV-27CMH1				Sones CFM	1.6 219	1.7 194	1.7	2.3 150	3.2 110	3.5 70	-	-	-			
	240V	50Hz		CLINI	219	194	100	130	110	70	_	_	-	669	46	43

Performance certified is for installation type B: Free inlet, Free outlet. Performance ratings include the effects of an inlet grille and back draft shutter. Speed (RPM) shown is normal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type B: Free inlet hemispherical sone levels. \*the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O. \*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Low No	ise T	уре С	abine	et Fan l	Mod	lel C	Com	pari	son								
Model no.	Voltago	Frequency	Speed	CI	FM/S0	ONE A	T STA	TIC P	ressu	re (ps	-inche	s of H	12 <b>O</b> )		RPM	Wotto*	Watts**
Model 110.	voitage	Frequency	Speed	inches of H <sub>2</sub> O	0	0.1	0.125	0.25	0.375	0.5	0.75	1	1.25	1.5	THE	walls	walls
	220V	60Hz	Hi	CFM	114	105	102	87	65	-	-	·	-	-	1,460	26	23
FV-12NS3	2200	00HZ	П	Sones	1.5	1.4	1.4	1.3	1.4	-	-	1	-	-	1,400	20	25
1 4-121100	240V	50Hz	Hi	CFM	102	90	86	67	39	-	-	-	-	-	1,342	27	22
	2400	30HZ	1 11	Sones	2.0	1.7	1.6	1.4	1.5	-	-	-	-	-	1,042	21	22
	220V	60Hz	Hi	CFM	200	183	177	149	118	83	-	-	-	-	1,520	45	42
FV-15NS3	2200	OUHZ	1 11	Sones	2.7	2.5	2.4	2.3	2.2	2.0	-	-	-	-	1,520	75	72
FV-15N33	240V	50Hz	Hi	CFM	193	177	172	139	94	20	-	-	-	-	1,373	47	37
	2400	30HZ	' ''	Sones	3.7	3.4	3.2	2.6	2.5	2.8	-	-	-	-	1,070	77	57
	220V	60Hz	Hi	CFM	274	261	258	241	222	196	137	-	-	-	1,470	80	73
FV-18NS3	2200	60HZ	П	Sones	3.3	3.1	3.0	2.9	2.7	2.6	2.7	-	-	-	1,470	00	/3
FV-10N33	240V	50Hz	Hi	CFM	281	263	259	232	200	163	34	-	-	-	1,342	84	68
	2400	30HZ	1 11	Sones	4.8	4.4	4.4	3.8	3.4	3.0	2.9	-	-	-	1,042	07	
	220V	60Hz	<b>L</b> I;	CFM	417	399	395	373	347	318	237	-	-	-	1,420	128	119
FV-18NF3	2200	60HZ	Hi	Sones	4.0	3.9	3.9	3.9	3.6	3.5	3.4	-	-	-	1,420	120	113
r v - ioivi-3	240V	50Hz	Hi	CFM	429	406	400	381	344	290	78	-	-	-	1,327	135	104
	2400	30HZ	' ''	Sones	5.6	5.4	5.4	5.1	4.6	4.3	4.2	-	-	-	1,027	100	104
	0001/	COLI-	Hi	CFM	469	459	456	444	433	413	354	275	-	-	1,380	170	159
FV-20NS3	220V	60Hz	1 11	Sones	4.0	4.0	3.9	3.8	3.9	4.0	4.1	4.2	-	-	1,000	170	100
1 4-201400	240V	50Hz	Hi	CFM	517	500	495	464	424	382	265	110	-	-	1,328	175	135
	2400	50HZ	1 "	Sones	6.0	5.8	5.8	5.4	5.1	4.8	4.5	4.5	-	-	1,020	170	100
	000)/	0011-	Hi	CFM	655	642	640	625	611	597	555	505	440	-	1,400	350	310
FV-23NL3	220V	60Hz	П	Sones	6.0	6.0	5.9	5.9	5.7	5.7	5.8	5.8	5.8	-	1,400	330	310
FV-ZSINES	0.40\/		Hi	CFM	688	670	664	642	614	579	493	388	199	-	1,342	347	260
	240V	50Hz	- 1 11	Sones	8.8	8.6	8.4	8.1	8.0	7.6	7.2	6.7	6.6	-	1,342	347	200
	220V	COLL	Hi	CFM	940	924	919	899	877	857	790	710	610	502	1,380	460	425
FV-25NS3	2200	60Hz	П	Sones	7.1	7.1	7.1	7.0	6.8	6.8	6.7	6.7	6.7	6.9	1,360	400	423
1 4-231433	0.40\	5011	Hi	CFM	963	938	935	906	868	822	719	567	395	-	1,305	481	370
	240V	50Hz	1 11	Sones	10.1	9.8	9.7	9.3	9.2	8.8	8.0	7.5	8.2	-	1,303	701	370
	000)	0011	Hi	CFM	1,016	1,000	995	975	954	933	875	803	710	590	1,420	680	520
EV OFNEO	220V 60Hz		Sones	8.2	8.2	8.2	8.2	7.9	7.9	7.8	7.6	7.5	7.5	1,420	000	520	
FV-25NF3	0.401.		1.15	CFM	1,057	1,048	1,040	1,010	972	922	811	660	473	-	1 000	E07	400
	240V	50Hz	Hi	Sones	12.1	11.9	11.5	11.1	10.6	9.8	8.7	8.7	10.3	-	1,330	537	430

Performance certified is for installation type D: Ducted inlet, Ducted outlet.

Performance ratings do not include the effects of appurtenances (accessories), Speed (RPM) shown is nominal.

Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5ft (1.5m) in a hemispherical free field calculated per AMCA International Standard 301.

#### Low Noise Type Cabinet Fan (Three Phase Series) Model Comparison (Non-AMCA Certified) RPM **Air Volume** Noise Weight **Duct Size** Impeller Diameter Voltage **Frequency** Comsumption Model No. **Phase** [min<sup>-1</sup>] [V] [Hz] [W] [dB(A)] [Kg] [mm] [mm] [CMH] [CFM] 940 4,000 2,354 50 1,375 43 380 60 FV-25SW3 3 250 250 x 500 60 1,450 1,530 4,500 2,648 45 1,180 1,345 5.200 3.060 50 45 380 60 FV-25SM3 3 250 x 700 250 60 1,750 1,470 5,500 3,237 46 600 1,295 2,600 1,530 44 50 **FV-28NX3** 3 380 28 ø250 280 60 1,380 2,650 1,560 45 840

Note: The value in Specification table are representative characteristic value at 380V, 50/60Hz RPM data is for reference only. Values may vary subject to different conditions.

The above Low Noise Type Cabinet Fan (Three Phase Series) Model are not licensed to bear the AMCA Certified Ratings Seal.

<sup>.</sup> Values shown are for installation Type D: ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction.

<sup>\*</sup> the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H₂O.

<sup>\*\*</sup> the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Indust	rial Ve	entilati	ng Fan	Мо	del C	omp	aris	on							
	.,	_	С	FM/SC	ONE AT	STAT	IC Pres	ssure (p	os-incl	nes of H	12O)			Watts*	Watts**
Model no.	voitage	Frequency	inches of H₂O	0	0.05	0.075	0.1	0.125	0.25	0.375	0.5	0.75	RPM	FOR AMCA	FOR IEC
	220V	60Hz	CFM	788	742	715	686	647	-	-	-	-	1570	61	57
FV-25GS5	2200	00112	Sones	4.9	4.7	4.5	4.5	4.6	-	-	-	-	1370	01	57
	240V	50Hz	CFM	701	657	633	600	565	187	-	-	-	1400	48	44
	2400	30112	Sones	3.8	3.6	3.6	3.5	3.6	8.6	-	-	-	1400	70	7
	0001	60Hz	CFM	1308	1247	1217	1184	1153	772	-	-	-	1460	100	110
FV-30GS5	2201	00112	Sones	9.0	9.0	9.1	9.0	9.1	9.4	-	-	-	1460	129	119
1 1-00005	240V	50Hz	CFM	1177	1119	1090	1058	1026	561	243	-	-	1315	106	98
	2400	30112	Sones	5.5	5.5	5.6	5.6	5.8	11.1	12.0	-	-	1313	100	9
	0001	6011-	CFM	1850	1788	1752	1712	1669	1456	600	-	-	1640	178	161
FV-35GS5	220V	60Hz	Sones	11.9	11.6	12.0	12.4	13.6	14.6	13.4	-	-	1640	170	101
F V-33G33	240V	50Hz	CFM	1615	1548	1506	1458	1411	1147	390	-	-	1435	130	122
	2400	30HZ	Sones	8.6	8.2	8.2	8.0	8.0	12.6	13.4	-	-	1433	130	122
	2221	2011	CFM	2677	2581	2535	2488	2440	2170	2050	-	-	1550	004	070
FV-40GS5	220V	60Hz	Sones	20.0	20.0	19.7	19.4	19.3	18.9	19.9	-	-	1550	294	270
V-40G33	0.4017	50Hz	CFM	2135	2067	2035	2000	1965	1800	1480	-	-	1440	164	151
	240V	30HZ	Sones	9.0	8.5	8.7	8.7	8.7	13.0	14.2	-	-	1740	104	131

Model no.	Voltage	Frequency	CFM/SON	IE AT STAT	IC Pressure	e (ps-inches	of H <sub>2</sub> O)	DDM	Watts*	Watts**
wiodei iio.	Voltage	rrequericy	inches of H <sub>2</sub> O	0	0.2	0.3	0.4	RPM	FOR AMCA	FOR IEC
	220V	60Hz	CFM	3278	3131	3001	2795	1563	346	325
FV-45GS4	2200	60HZ	Sones	10	10.4	10.6	10.8	1565	340	323
FV-43G34	240V	50Hz	CFM	2854	2648	2454	2030	1400	077	0.41
	2401	30HZ	Sones	7.8	7.7	7.8	9.4	1430	277	241
220	2201/	60Hz	CFM	3884	3443	3090	2501	1000	0.47	206
FV-50GS4	220V	00112	Sones	10.9	11.3	11.5	11.8	1080	347	326
FV-50G54	240V	50Hz	CFM	3354	2854	2266	912	000	000	071
	2400	30HZ	Sones	11.7	13.8	14.5	15.4	968	293	271
	220V	60Hz	CFM	5038	4349	3943	3560	4000	004	004
EV 60064	2200	60HZ	Sones	10.1	9.8	9.5	10.1	1088	384	361
FV-60GS4	0.40\/	50Hz	CFM	4402	3855	3366	2972	000	000	000
	240V	3002	Sones	10.3	8.6	8.5	11.5	980	289	263

Performance certified is for installation type A: Free Inlet, Free Outlet. 1. For models FV-25/30/35/40GS4, Speed (RPM) shown is nominal; 2. but for models FV-45/50/60GS4, the Speed (RPM) and watts rating shown are at the static pressure of 0 inch of H2O. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H2O.

\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Indust	rial V	/entilat	ing Fan	Model Co	mparisor	n (Non-AN	/ICA Cert	ified)	
Model No.	Phase	Voltage	Frequency	Comsumption	RPM	Air Vo	lume	Noise	Weight
Model No.	Filase	[V]	[Hz]	[W]	[min <sup>-1</sup> ]	[CMH]	[CFM]	[dB(A)]	[Kg]
FV-45GT4	3	380	50	220	1,450	5,520	3,249	52	18.5
FV-45G14	3	300	60	330	1,690	6,420	3,779	58	10.0
FV-50GT4	3	380	50	320	1,400	6,960	4,097	54	28.5
I V-30G14	7-50G14	300	60	475	1,590	8,010	4,715	58	20.0
FV-60GT4	3	380	50	310	940	9,420	5,544	49	34
FV-00G14	3	360	60	450	1,070	10,920	6,427	53	54
FV-30KUT	_	220	50	42	1,185	1,220	718	46	4.9
FV-30KU1	_	220	60	51	1,255	1,270	747	47	4.9
EV 40KUT		000	50	61	1,175	2,060	1,212	49	6.4
FV-4UKUT	/-40KUT -	220	60	76	1,260	2,190	1,289	51	0.4
EV SOAETS	V-50AET2 -	220	50	108	920	3,630	2,137	54	11.5
FV-SUAETZ		220	60	130	1,050	4,200	2,472	58	11.5

Wall Mo	unt Ven	tilating Fa	an Model C	ompari	son				
NAI - I	V-lk	<b></b>	CFM/SONE AT	STATIC Pres	ssure (ps-inc	hes of H <sub>2</sub> O)	DDM	Watts*	Watts**
Model	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.025	0.05	RPM	FOR AMCA	FOR IEC
	2001/	0011	CFM	157	122	65	1533	20.6	19.0
EV 45 4 0 T 4	220V	60Hz	Sones	2.5	1.9	2.3	1000	20.6	19.0
FV-15AST1	240V	50Hz	CFM	154	120	63	1453	20.1	19.0
	2407	30HZ	Sones	1.7	1.4	2.1	1400	20.1	19.0
	0001/	0011-	CFM	330	259	183	1358	25.5	21.5
EV 00400	220V	60Hz	Sones	1.7	1.9	3.9	1336	25.5	21.5
FV-20AS2	240V	50Hz	CFM	296	198	151	1252	22.4	19.5
	2400	30112	Sones	1.5	1.7	3.2	1232	22.4	19.5
FV-20AS2 05	2401/	50Hz	CFM	296	198	151	1252	22.4	19.5
FV-20A32 03	<b>240V</b>	30HZ	Sones	1.5	1.7	3.2	1202	22.4	19.5
	220V	60Hz	CFM	522	414	240	1277	35.5	30.5
EV OF ACO	2200	00HZ	Sones	1.9	1.6	2.2	1211	00.0	30.3
FV-25AS2	240V	50Hz	CFM	486	434	314	1194	35.1	29.5
	Z+0 V	30112	Sones	2.0	2.0	2.4	1104	00.1	20.0
FV-25AS2 05	240V	50Hz	CFM	486	434	314	1194	35.1	29.5
1 7 20/102 00	2401	00112	Sones	2.0	2.0	2.4		00.1	20.0
	220V	60Hz	CFM	637	400	85	1088	39.8	34.5
FV-30AS2	2200	UUTZ	Sones	2.0	2.7	2.2	1000	59.6	UT.U
1 V-30A32	240V	50Hz	CFM	706	620	498	1175	38.1	34.0
	2400	30112	Sones	2.9	2.3	2.2	1175	55.1	O+.0
FV-30AS2 05	240V	50Hz	CFM	706	620	498	1175	38.1	34.0
FV-3UA32 U3	24UV	30112	Sones	2.9	2.3	2.2	1175	50.1	07.0

		_	CFM/SONE AT	STATIC F	Pressure (	ps-inche	s of H <sub>2</sub> O)		Watts*	Watts**
Model	Voltage	Frequency	inches of H <sub>2</sub> O	0	0.02	0.04	0.06	RPM	For AMCA	FOR IEC
	0001	001.1-	CFM	356	315	271	227	1040	04.5	00
EV COALICE	220V	60Hz	Sones	2.3	2.4	1.8	2.8	1343	24.5	22
FV-20AU9T	240V	50Hz	CFM	338	294	253	171	1234	23.5	21.5
	2400	30112	Sones	2.1	2.4	2	3.5	1234	23.5	21.5
	220V	60Hz	CFM	515	421	330	227	1113	24.2	31
EN 05 ALIOT	2200	00HZ	Sones	2.5	2.3	1.9	3	1113	34.3	31
FV-25AU9T	240V	50Hz	CFM	527	465	400	347	1143	35.2	32
	2400	30112	Sones	5.8	5.6	5.2	4.8	1145	33.2	52
	220V	60Hz	CFM	586	486	335	174	874	40.4	38
E1/ 00 4 1 10 E	V-30AU9T	00112	Sones	2.2	2.2	4.1	2.4	0/4	40.4	30
FV-30AU91	240V	50Hz	CFM	624	565	491	312	935	41.5	39
	2400	30112	Sones	3.7	3.6	3.6	4.1	935	41.5	39
	220V	60Hz	CFM	327	294	256	162	1277	24.2	22
	2200	60HZ	Sones	2.8	2.7	4.3	5.3	1277	24.2	22
FV-20AL9T	240V	50Hz	CFM	300	274	234	141	1228	23.5	21.5
	2400	30112	Sones	2.6	2.5	3.8	3.8	1220	23.3	21.5
	220V	60Hz	CFM	465	409	350	260	1116	40	36
EV 05 41 0T	2200	00HZ	Sones	3.5	3.2	3	5.4	1110	40	30
FV-25AL9T	240V	50Hz	CFM	468	418	371	327	1152	35.2	32
	2401	30112	Sones	5.5	5.9	5	5.2	1102	35.2	32
	220V	60Hz	CFM	503	374	230	119	833	42	38
		00⊓∠	Sones	2.6	3	3.1	2.5		42	J0
FV-30AL7T	240V	50Hz	CFM	571	494	406	247	001	44.3	40
	2400	30112	Sones	3.8	3.7	5.1	3.8	921	44.3	40

Performance certified is for installation type A: Free inlet, Free outlet. Performance ratings include the effects of backdraft shutter for all models and inlet grille for model FV-20AL9T, FV-25AL9T, FV-30AL7T. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of  $H_2O$ . The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

<sup>\*</sup>the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of  $H_2O$ .

<sup>\*\*</sup>the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Wall Mo	unt Ve	entilati	ing Fan I	Model Con	nparis	on (N	on-AN	ICA C	ertifie	ed)
		Voltage	Frequency	Comsumption	RPM	Air Vo	olume	Noise	Weight	Installation space
Model No.		[V]	[Hz]	[W]	[min-1]	[СМН]	[CFM]	[dB(A)]	[Kg]	[mm]
FV-25AUF1		220	50	34	1,100	835	491	42	2.8	300 x 300
		220	60	34	1,080	820	483	42	2.0	
	Exhaust		50	20	1,260	580	341	36		
FV-20RG7T		220	60	24	1,410	630	371	39	2.2	250 x 250
FV-20RG/1	Intake	220	50	15	1,150	405	238	46	2.2	200 X 200
	intake		60	17	1,140	355	209	46		
	Exhaust		50	27	1,090	945	556	38		
EV 05D07T		220	60	31	1,110	950	559	39	2.4	300 x 300
FV-25RG7T	Intake	220	50	21	1,010	600	353	45	2.4	300 X 300
	intake		60	23	970	560	330	44		
	Exhaust		50	31	885	1,165	686	39		
FV-30RG7T		220	60	38	800	1,000	589	38	2.8	350 x 350
FV-30NG/1	Intake	220	50	24	840	700	412	43	2.0	000 X 000
	mano		60	26	810	680	400	42		
	Exhaust		50	20	1,240	548	321	39		
FV-20RL7T		220	60	24	1,290	570	335	43	2.4	250 x 250
1 4-2011271	Intake	220	50	15	1,190	370	218	46	2.7	200 / 200
			60	17	1,180	340	200	46		
	Exhaust		50	29	1,110	840	494	43		
FV-25RL7T		220	60	33	1,110	835	491	43	2.7	300 x 300
1 4-20NL/1	Intake	220	50	21	1,035	580	330	43	2.,	000 X 000
			60	23.5	1,035	560	583	44.5		
	Exhaust		50	31	890	990	583	44		
FV-30RL6T		220	60	38	880	945	558	43	3.1	350 x 350
I 4-OUNLUI	Intake	220	50	25	770	600	353	43	0.1	000 X 000
	mano		60	26	770	600	353	44		

Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz RPM data is for reference only. Values may vary subject to different conditions. The above Wall Mount Ventilating Fan Model are not licensed to bear the AMCA Certified Ratings Seal.

#### **Window Mount Ventilating Fan Model Comparison**

Model	Voltage	Frequency	CFM/SONE	AT STATIC	Pressure	(ps-inches	of H <sub>2</sub> O)	RPM	Watts*	Watts**
Woder	Voltage	requency	inches of H <sub>2</sub> O	0	0.05	0.1	0.15	111 181	FOR AMCA	FOR IEC
EV 45/4/10T	220V	60Hz	CFM Sones	127 3.0	94 3.6	63 3.5	31 3.9	2440	14.6	13
FV-15WH3T	240V	50Hz	CFM Sones	127 2.3	95 2.7	68 3.5	50 2.8	2537	16	15
EV 00/4/10T	220V	60Hz	CFM Sones	250 3	188 3.9	127 4.5	78 4.2	1517	24.4	22
FV-20WH3T	240V	50Hz	CFM Sones	230 2.8	147 3.8	103 3.4	53 4	1333	23.4	22

Model	Voltage	Frequency	CFM/SONE	AT STATIC	Pressure (	os-inches o	f H2O)	RPM	Watts*	Watts**
Woder	Voltage	requency	inches of H <sub>2</sub> O	0	0.02	0.04	0.06	111 181	FOR AMCA	FOR IEC
	2201/	COL 1-	CFM	124	109	91	79	2021	19.6	18
Ε\/_15\//Λ1	FV-15WA1 220V	60Hz	Sones	3.6	4.5	4.1	4	2021	19.6	18
1 V-13VVA1		50LI-	CFM	124	109	93	78	0000	10.0	10
	240V	50Hz	Sones	3.5	4.5	4.1	3.8	2062	18.2	16
	0001	COL 1-	CFM	206	147	124	94	1005	10.4	4.7
EV 00)4/44	220V	60Hz	Sones	3.7	3.8	3.5	3.3	1385	18.4	17
FV-20WA1	0.40\/		CFM	165	153	141	131	1375	18.6	17.5
	240V	50Hz	Sones	3.4	3.3	3.4	3.4	1375	16.0	17.5

Model	Voltage	Frequency	CFM/SONE	AT STATIC	Pressure (	RPM	Watts*	Watts**		
	Voltage	rrequency	inches of H <sub>2</sub> O	0	0.01	0.02	0.03	NEW	FOR AMCA	FOR IEC
	220V	60Hz	CFM	105	94	79	66	1425	9.7	0.0
	2200	00HZ	Sones	0.9	0.9	2.2	2.4	1425		8.9
FV-15WU4	0.40\/	FOL I-	CFM	124	115	104	94	1722	10.3	9.5
	240V	50Hz	Sones	1.4	1.6	1.8	3.7			9.5
			inches of H <sub>2</sub> O	0	0.02	0.03	0.04			
	220V	60Hz	CFM	188	129	112	88	000	10.0	17.0
FV-20WU4	2200	6002	Sones	0.8	1.2	1.8	1.4	980	19.2	17.9
	0.40\/	5011	CFM	221	168	141	118	1096	18.5	17.2
	240V	50Hz	Sones	1.8	1.6	2.2	2.0	1090	16.5	17.2

Performance certified is for installation type A: Free Inlet, Free Outlet. Performance ratings include the effects of shutter for all models and inlet grille for model FV-15WH3T and FV-20WH3T. The speed (RPM) and Watts rating shown are at the static pressure of 0 inch of H<sub>2</sub>O. The sound ratings shown are loudness values in fan sones at 5t. (1.5m) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation type A: Free Inlet hemispherical sone levels.

\* the Watts rating is only for AMCA test method and it is at the static pressure of 0 inch of H<sub>2</sub>O.

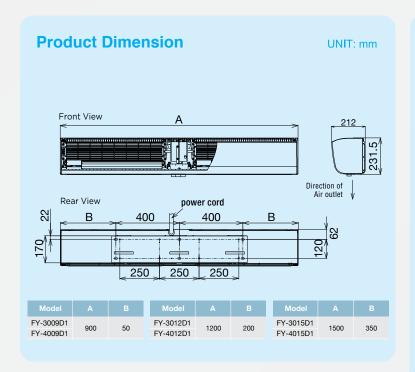
\*\* the Watts rating is only for IEC test method and the AMCA Certified Ratings Seal does not apply to IEC test method watts.

Model No.	Voltage [W]	Frequency [W]		Comsumption [W]	RPM [min-1]	Air Vo	lume [CFM]	Noise [dB(A)]	Weight [Kg]	Installation Size [mm]
		50	Hi	22	1,878	205	121	46		ø186 - ø190
FV 45W14	220	50	Lo	19	1,325	145	85	36	] , ,	
FV-15WJ1	220	60	Hi	27	2,012	220	129	48	2.4	
		00	Lo	20	1,294	153	90	38		

Note: The value in Specification table are representative characteristic value at 220V, 50/60Hz

RPM data is for reference only. Values may vary subject to different conditions. The above Window Mount Ventilating Fan Model (FV-15WJ1) is not licensed to bear the AMCA Certified Ratings Seal.

#### Cross Flow Type - Sensor Series





Model	Distance	Model	Distance
FY-3009D1	3m	FY-4009D1	4m
FY-3012D1	3m	FY-4012D1	4m
FY-3015D1	3m	FY-4015D1	4m



#### FY-3009D1, FY-3012D1, FY-3015D1, FY-4009D1, FY-4012D1, FY-4015D1

- Cross flow fan adopted for wide and uniform airflow
- Unique auxiliary air inlet enhances airflow output
- Thick air stream provides high airflow momentum
- Resin with glass fiber adopted for fan blade
- Metal blade bush for high durability
- Simple structure allows easy maintenance
- Permanently lubricated ball bearing equipped
- Air deflection plate for airflow direction adjustment
- Main air inlet at top allows neat image
- Auto operation by door contact sensor
- Push button switch
- 2-speed selection

Specification																	
Medel No	Volt	age		Air Vo	olume	Consumption	Current	Outlet Velocity	Noise	Weight							
Model No.	[v]	[Hz]		[m³/h]	[CFM]	[w]	[A]	[m/s]	[dB(A)]	[kg]							
		50	Hi	1,100	647	76	0.35	10.5	48.5								
	220	50	Lo	920	541	70	0.32	8.5	45.0								
FY-3009D1	220	60	Hi	1,100	647	92	0.42	10.5	49.5	12.5							
F1-3009D1		60	Lo	900	530	78	0.36	8.5	45.0								
	240	50	Hi	1,150	677	86	0.37	10.5	50.5								
	240	50	Lo	960	565	80	0.35	9.0	47.5								
		50	Hi	1,340	789	110	0.50	12.0	54.5								
	220	50	Lo	1,190	700	94	0.43	10.0	51.0								
FY-4009D1	220	60	Hi	1,340	789	141	0.64	12.0	55.5	13.5							
F1-4009D1			10801	60	Lo	1,100	647	111	0.51	10.0	51.0						
	240	50	Hi	1,360	800	122	0.51	12.5	56.5								
	240	50	Lo	1,200	706	100	0.43	11.0	53.5								
FY-3012D1							50	Hi	1,400	824	94	0.43	9.5	48.5			
	000	50	Lo	1,270	747	85	0.40	8.0	45.0								
	220	60	Hi	1,400	824	109	0.51	9.5	48.5	15.0							
		60	Lo	1,250	736	94	0.46	8.0	45.0	10.0							
	240	50	Hi	1,500	883	107	0.46	10.0	50.5								
		50	Lo	1,320	777	95	0.43	9.0	47.0								
			50	Hi	1,700	1,001	126	0.59	12.0	52.5							
			Lo	1,530	901	105	0.49	10.0	49.0								
EV 4040D4	220	220	220	220	220	220	220			Hi	1,700	1,001	153	0.70	12.0	52.5	16.0
FY-4012D1		60	Lo	1,450	853	118	0.55	10.0	49.0	10.0							
	0.40	50	Hi	1,800	1,059	139	0.60	12.5	54.5								
	240	50	Lo	1,580	930	110	0.49	11.0	51.0								
		50	Hi	2,000	1,177	131	0.59	10.5	51.5								
	220	50	Lo	1,800	1,059	110	0.50	9.5	48.0								
EV 2015D1	220	60	Hi	2,000	1,177	150	0.68	10.5	51.5	18.5							
FY-3015D1		60	Lo	1,750	1,030	118	0.54	9.5	48.0	10.0							
	0.40	50	Hi	2,100	1,236	145	0.60	11.0	53.5								
	240	50	Lo	1,850	1,089	115	0.50	10.0	50.5								
			Hi	2,450	1,442	177	0.81	13.0	56.0								
	000	50	Lo	2,000	1,177	147	0.68	10.0	52.0								
EV 404ED4	220		Hi	2,300	1,354	220	1.01	13.0	56.0	18.5							
FY-4015D1		60	Lo	1,780	1,048	160	0.74	9.5	52.0								
			Hi	2,500	1,471	200	0.86	13.5	58.0								
	240	50	Lo	2,050	1,207	160	0.68	11.0	54.5								

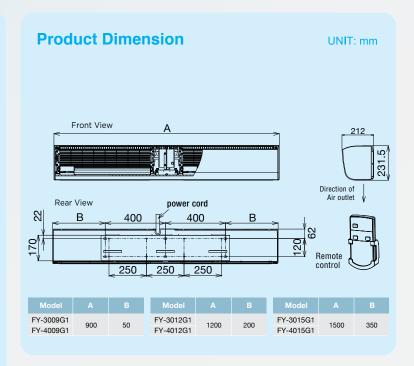
- The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The velocity is measured in test laboratory, it may vary depends on different environment in actual usage

#### Cross Flow Type - Remote Control Series



#### FY-3009G1, FY-3012G1, FY-3015G1, FY-4009G1, FY-4012G1, FY-4015G1

- · Cross flow fan adopted for wide and uniform airflow
- Unique auxiliary air inlet enhances airflow output
- Thick air stream provides high airflow momentum
- Resin with glass fiber adopted for fan blade
- Metal blade bush for high durability
- Simple structure allows easy maintenance
- Permanently lubricated ball bearing equipped
- · Air deflection plate for airflow direction adjustment
- Main air inlet at top allows neat image
- · Handheld remote control
- · Soft touch switch panel
- 2-speed selection



#### **Efficient Distance**

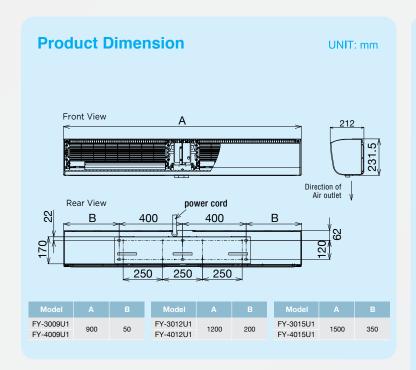
Model	Distance
FY-3009G1	3m
FY-3012G1	3m
FY-3015G1	3m

Model	Distance
FY-4009G1	4m
FY-4012G1	4m
FY-4015G1	4m

Specific	Specification										
	Volt	age		Air Volume		Consumption	Current	Outlet Velocity	Noise	Weight	
Model No.	[v]	[Hz]		[m³/h]	[CFM]	[w]	[A]	[m/s]	[dB(A)]	[kg]	
		50	Hi	1,100	647	76	0.35	10.5	48.5		
	220	50	Lo	920	541	70	0.32	8.5	45.0		
FY-3009G1	220	60	Hi	1,100	647	92	0.42	10.5	49.5	12.5	
F1-3009G1		60	Lo	900	530	78	0.36	8.5	45.0		
	0.40	50	Hi	1,150	677	86	0.37	10.5	50.5		
	240	50	Lo	960	565	80	0.35	9.0	47.5		
			Hi	1,340	789	110	0.50	12.0	54.5		
	220	50	Lo	1,190	700	94	0.43	10.0	51.0		
FY-4009G1	220	60	Hi	1,340	789	141	0.64	12.0	55.5	13.5	
F1-4009G1		60	Lo	1,100	647	111	0.51	10.0	51.0		
	240	50	Hi	1,360	800	122	0.51	12.5	56.5		
	240	50	Lo	1,200	706	100	0.43	11.0	53.5		
			Hi	1,400	824	94	0.43	9.5	48.5		
	220	50	Lo	1,270	747	85	0.40	8.0	45.0		
EV 001001	220	-00	Hi	1,400	824	109	0.51	9.5	48.5	15.0	
FY-3012G1		60	Lo	1,250	736	94	0.46	8.0	45.0	10.0	
		50	Hi	1,500	883	107	0.46	10.0	50.5		
	240	50	Lo	1,320	777	95	0.43	9.0	47.0		
			Hi	1,700	1,001	126	0.59	12.0	52.5		
	000	50	Lo	1,530	901	105	0.49	10.0	49.0		
EV 401001	220	60	Hi	1,700	1,001	153	0.70	12.0	52.5	16.0	
FY-4012G1		60	Lo	1,450	853	118	0.55	10.0	49.0	10.0	
			Hi	1,800	1,059	139	0.60	12.5	54.5		
	240	50	Lo	1,580	930	110	0.49	11.0	51.0		
			Hi	2,000	1,177	131	0.59	10.5	51.5		
		50	Lo	1,800	1,059	110	0.50	9.5	48.0		
EV 001E01	220	-00	Hi	2,000	1,177	150	0.68	10.5	51.5	18.5	
FY-3015G1		60	Lo	1,750	1,030	118	0.54	9.5	48.0	10.5	
			Hi	2,100	1,236	145	0.60	11.0	53.5		
	240	50	Lo	1,850	1,089	115	0.50	10.0	50.5		
			Hi	2,450	1,442	177	0.81	13.0	56.0		
	000	50	Lo	2,000	1,177	147	0.68	10.0	52.0		
EV 404504	220		Hi	2,300	1,354	220	1.01	13.0	56.0	18.5	
FY-4015G1		60	Lo	1,780	1,048	160	0.74	9.5	52.0	18.5	
			Hi	2,500	1,471	200	0.86	13.5	58.0		
	240	50	Lo	2,050	1,207	160	0.68	11.0	54.5		

- The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The velocity is measured in test laboratory, it may vary depends on different environment in actual usage

#### Cross Flow Type - Standard Series





Model	Distance	Model	
FY-3009U1	3m	FY-4009U1	
FY-3012U1	3m	FY-4012U1	
FY-3015U1	3m	FY-4015U1	

Model	Distance
FY-4009U1	4m
FY-4012U1	4m
FY-4015U1	4m



## FY-3009U1, FY-4009U1 FY-3012U1, FY-4012U1 FY-3015U1, FY-4015U1

- Cross flow fan adopted for wide and uniform airflow
- Unique auxiliary air inlet enhances airflow output
- Thick air stream provides high airflow momentum
- Resin with glass fiber adopted for fan blade
- Metal blade bush for high durability
- Simple structure allows easy maintenance
- Permanently lubricated ball bearing equipped
- Air deflection plate for airflow direction adjustment
- Main air inlet at top allows neat image
- Push button switch
- 2-speed selection

Specific	Specification												
Madal Na	Volt	age		Air Vo	olume	Consumption	Current	Outlet Velocity	Noise	Weight			
Model No.	[v]	[Hz]		[m³/h]	[CFM]	[w]	[A]	[m/s]	[dB(A)]	[kg]			
		50	Hi	1,100	647	76	0.35	10.5	48.5				
	220	50	Lo	920	541	70	0.32	8.5	45.0				
FY-3009U1	220	60	Hi	1,100	647	92	0.42	10.5	49.5	12.5			
F1-300901		60	Lo	900	530	78	0.36	8.5	45.0				
	240	50	Hi	1,150	677	86	0.37	10.5	50.5				
	240	50	Lo	960	565	80	0.35	9.0	47.5				
		50	Hi	1,340	789	110	0.50	12.0	54.5				
	220	50	Lo	1,190	700	94	0.43	10.0	51.0				
FY-4009U1		60	Hi	1,340	789	141	0.64	12.0	55.5	13.5			
F1-400901		U .	60	Lo	1,100	647	111	0.51	10.0	51.0			
	240	50	Hi	1,360	800	122	0.51	12.5	56.5				
	240	30	Lo	1,200	706	100	0.43	11.0	53.5				
					50	Hi	1,400	94	94	0.43	9.5	48.5	
	220	50	Lo	1,270	85	85	0.40	8.0	45.0				
FY-3012U1	220	60	Hi	1,400	109	109	0.51	9.5	48.5	15.0			
		60	Lo	1,250	94	94	0.46	8.0	45.0				
	240	50	Hi	1,500	107	107	0.46	10.0	50.5				
		30	Lo	1,320	95	95	0.43	9.0	47.0				
		50	Hi	1,700	1,001	126	0.59	12.0	52.5	16.0			
	220	30	Lo	1,530	901	105	0.49	10.0	49.0				
FY-4012U1	220	60	Hi	1,700	1,001	153	0.70	12.0	52.5				
11-401201		00	Lo	1,450	853	118	0.55	10.0	49.0				
	240	50	Hi	1,800	1,059	139	0.60	12.5	54.5				
	240	30	Lo	1,580	930	110	0.49	11.0	51.0				
		50	Hi	2,000	1,177	131	0.59	10.5	51.5				
	220	30	Lo	1,800	1,059	110	0.50	9.5	48.0				
FY-3015U1	220	60	Hi	2,000	1,177	150	0.68	10.5	51.5	18.5			
1 1-301301		00	Lo	1,750	1,030	118	0.54	9.5	48.0				
	240	50	Hi	2,100	1,236	145	0.60	11.0	53.5				
	240	00	Lo	1,850	1,089	115	0.50	10.0	50.5				
		50	Hi	2,450	1,442	177	0.81	13.0	56.0				
	220	30	Lo	2,000	1,177	147	0.68	10.0	52.0				
FY-4015U1	220	60	Hi	2,300	1,354	220	1.01	13.0	56.0	18.5			
1 1-401301		00	Lo	1,780	1,048	160	0.74	9.5	52.0				
	240	50	Hi	2,500	1,471	200	0.86	13.5	58.0				
	240		Lo	2,050	1,207	160	0.68	11.0	54.5				

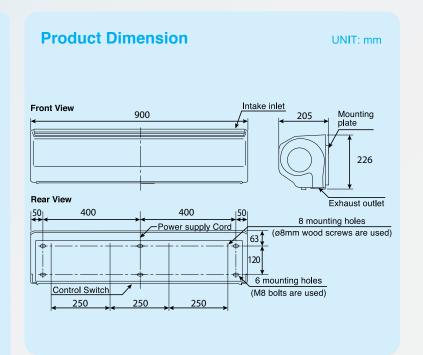
- The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The velocity is measured in test laboratory, it may vary depends on different environment in actual usage

#### Sirocco Type - 900 Series



# FY-08ESN, FY-10ESN FY-12ESN, FY-14ESN

- · Sirocco fan adopted for long reach and narrow diffusion airflow
- ABS resin casing provides better weather
- · Permanently lubricated ball bearing equipped
- · Air deflection plate for airflow direction adjustment
- · Air inlet at top allows neat image
- · Push button switch
- · 2-speed selection
- Product length = 900 mm

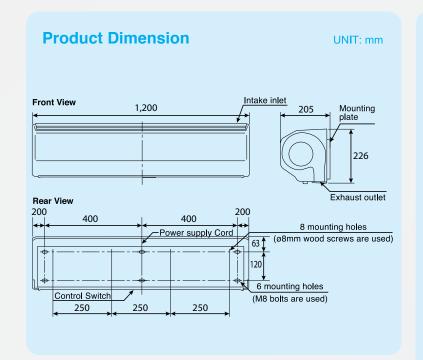


Model	Distance	Model	Distance
FY-08ESN	2.5m	FY-12ESN	3.5m
FY-10ESN	3m	FY-14ESN	4m

Specific	atior	1								
	Voltage			Air Volume		Consumption	Current	Outlet Velocity	Noise	Weight
Model No.	[v]	[Hz]		[m³/h]	[CFM]	[w]	[A]	[m/s]	[dB(A)]	[kg]
		50	Hi	650	383	46	0.23	11.5	42	
	220	50	Lo	580	341	42	0.21	10.3	39	
EV OOECN	220	60	Hi	690	406	57	0.28	12.1	43	12.0
FY-08ESN		60	Lo	560	330	49	0.25	9.9	38	12.0
	240	240 50	Hi	680	400	51	0.24	11.9	43	
			Lo	620	365	47	0.23	10.9	41	
		50	Hi	750	441	72	0.40	13.0	46	
	220	50	Lo	630	371	62	0.29	11.1	42	12.0
FY-10ESN	220	60	Hi	860	506	88	0.42	14.9	50	
F1-10ESIN		60	Lo	600	353	72	0.33	10.9	40	
	240	50	Hi	750	441	84	0.46	13.2	46	
	240	30	Lo	630	371	66	0.30	11.7	43	
		50	Hi	1,050	618	176	0.82	16.9	55	
	220	50	Lo	960	565	155	0.69	15.8	50	
FY-12ESN	220	60	Hi	990	583	202	0.94	16.1	54	13.0
F1-12E5N		60	Lo	940	553	170	0.75	15.3	49	
	240	50	Hi	1,120	659	200	0.86	17.9	57	
	240	50	Lo	1,040	612	169	0.75	16.8	54	
		50	Hi	1,340	789	257	1.14	21.9	62	
	220	50	Lo	1,168	687	218	0.99	19.1	59	
FY-14ESN	220	60	Hi	1,303	767	312	1.43	21.3	61	13.0
F1-14ESN		50	Lo	1,083	637	255	1.16	17.7	57	
	240	50	Hi	1,395	821	281	1.18	22.8	63	
	240	50	Lo	1,272	749	238	1.00	20.8	60	

- The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The velocity is measured in test laboratory, it may vary depends on different environment in actual usage

#### Sirocco Type - 1200 Series





Model	Distance	
FY-08ELN	2.5m	
FY-10ELN	3m	

Model	Distance
FY-12ELN	3.5m
FY-14ELN	4m



# FY-08ELN, FY-10ELN FY-12ELN, FY-14ELN

- · Sirocco fan adopted for long reach and narrow diffusion airflow
- ABS resin casing provides better weather
- · Permanently lubricated ball bearing equipped
- · Air deflection plate for airflow direction adjustment
- · Air inlet at top allows neat image
- · Push button switch
- 2-speed selection
- Product length = 1,200 mm

Specification										
Model No.	Volt	age		Air Volume		Consumption	Current	Outlet Velocity	Noise	Weight
	[v]	[Hz]		[m³/h]	[CFM]	[w]	[A]	[m/s]	[dB(A)]	[kg]
FY-08ELN	220	50	Hi	880	518	57	0.28	11.6	43	14.0
			Lo	800	471	53	0.27	10.6	41	
		60	Hi	940	553	74	0.36	12.4	45	
			Lo	790	465	62	0.32	10.5	40	
	0.40	50	Hi	920	541	65	0.29	12.1	44	
	240		Lo	850	500	59	0.28	11.2	42	
	220	50	Hi	1,000	589	96	0.54	13.1	46	14.0
			Lo	830	489	74	0.35	11.0	42	
FY-10ELN		60	Hi	1,150	677	116	0.56	15.1	50	
			Lo	790	465	85	0.41	10.5	41	
	240	50	Hi	1,010	594	116	0.66	13.2	47	
		50	Lo	880	518	86	0.38	11.6	43	
	220	50	Hi	1,420	836	224	1.04	17.0	56	15.0
FY-12ELN			Lo	1,320	777	200	0.90	15.8	51	
		60	Hi	1,340	789	258	1.21	16.2	55	
		60	Lo	1,290	759	220	1.04	15.4	50	
	240	50	Hi	1,510	889	252	1.10	17.9	58	
			Lo	1,410	830	218	0.98	16.7	56	
FY-14ELN	220		Hi	1,867	1,099	333	1.52	22.5	63	15.0
		50	Lo	1,668	982	290	1.32	20.1	61	
		60	Hi	1,826	1,075	423	1.93	22.0	63	
			Lo	1,552	913	339	1.55	18.7	59	
	240	50	Hi	1,942	1,143	364	1.53	23.4	64	
		50	Lo	1,818	1,070	320	1.33	21.9	62	

- The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The values of noise level are measured at 1.5 m apart from the product at angle of 45° below the air outlet at which is the maximum value The velocity is measured in test laboratory, it may vary depends on different environment in actual usage

Jawharaa Project Mixed Use Development SUDAN Energy Recovery Ventilators









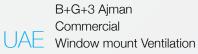


Pearl Muscat Ph1 Mixed Used Development **Ducted Ventilation Products** 

Buhaleeba 200 Villa Complex UAE Residential Villas **Ducted Ventilation Products** 

OMAN

Pearl Muscat Ph2-Mixed Used Development Ducted Ventilation Products











KSA

AL Waseel Housing Project Local Housing Development for Locals DC motor Ducted Ventilation products

**QATAR** 

42 Villas in Doha Residential Villas Window Mount Ventilation

UAE

Labour Camp Project Labor Camps Complex Ceiling fans, Window Mount fans, industrial fans OMAN



**QATAR** 

125 Apartments Residential Development Ceiling Mount Ventilation Fans







OMAN 252 Apartments Short Description Cabinet Fans , Wall Mount Louver



432 Apartments **Short Description** Cabinet Fans, Wall Mount Louver

**QATAR** 

234 Apartments Residential Development Ceiling Mount Ventilation Fans



220 Villa in Abu Dhabi Residential Development Window & Wall Mount Ventilation Fans









KSA

SABIC Net Zero Energy Green House Model Cabinet Fans, Wall Mount Louver, **Energy Recovery Ventilators** 

OMAN

G+2 Warehouse & Offices Commercial/industrial Mini Scirocco & Industrial Range Fans

#### **CERTIFICATIONS**

To ensure safety, Panasonic products are designed and manufactured according to either the standards of JIS (Japan Industrial Standard) or IEC (International Electrotechnical Commission). Test certificates are awarded by recognized test laboratories that further prove the reliability of our products.



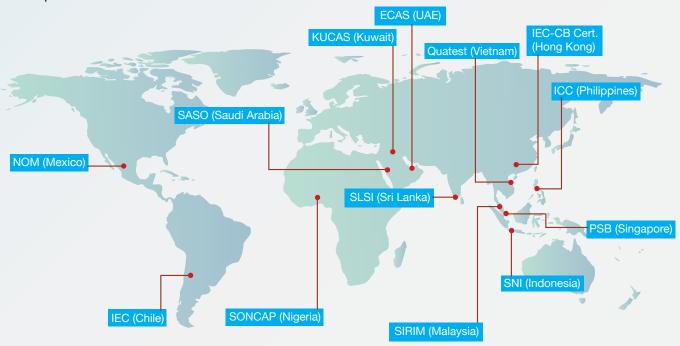




#### **CB Test Certificate**

CB Test Certificate is issued to products in compliance with the applicable requirement of IEC standard under CB Scheme (Certification Bodies' Scheme) set by IEC .

Beside the international standard of JIS and IEC, different safety certifications are also acquired to fulfill the requirement in different countries.



#### In addition, the performance of Panasonic products are qualified by external authorities:

- 1) AMCA Seal (Air Movement and Control Association International Inc.) of The United States for ventilation products
- 2) Suruhanjaya Tenaga (Energy Commission) of Malaysia for ceiling mount Ventilation fans
- 3) VNEEP (National Energy Efficiency Programme) of Vietnam for electric fans
- 4) EEL (Energy Efficiency Label) of Hong Kong for dehumidifier
- 5) Seal of Approval Certificate of Allergy UK (The British Allergy Foundation) for air purifier and air cooler
- 6) Gulf Technical Regulation (GCC) for the Gulf markets



(1) AMCA Seal, USA



(2) Suruhanjaya Tenaga Malaysia



(3) VNEEP.



(4) EEL. Hong Kong



5) Allergy UK United Kingdom



6) Gulf Technical Regulation (GCC)

## **NOTES**

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