



SUNON®



Energy Saving EC Fan

*All products are RoHS compliant.

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EC Energy-Saving

High-Efficient Heat Convection & Dissipation
with Eco-Friendly Control Technology

SUNON's EC fan series applies brushless DC motors to electronic PCB board that include AC to DC power conversion as well as controls. This feature allows the fans to run on an AC supply while also ensuring full-speed control and enhanced power efficiency.

SUNON's effective energy-saving EC fans can be used in a variety of environments. We pride ourselves on offering appropriate protection designs according to every client's individual needs, such as our series of waterproof EC fans with IP21, IP55, and IP68 ratings or our ATEX-certified EC fan solutions. These high-quality protection designs ensure maximum EC fan longevity in most operating conditions.



Energy Saving



High Airflow



Long Life



ESG Sustainability Development

Energy Efficiency X High Effectiveness

Many governments around the world have begun promoting energy efficiency and taking action to meet the goal of zero emissions produced by 2050. Thus, discovering feasible strategies to reduce or eliminate carbon emissions and power waste in the worldwide green economy is crucial for corporations looking to follow market trends.

At SUNON, we are focused on creating technology that can increase heat dissipation effectiveness and reduce overall power consumption, providing comprehensive energy-saving EC fans and optimal thermal solutions to help satisfy the global green markets' needs.

Applications

SUNON offers EC fan solutions that are mainly utilized in systems that require high power-conversion efficiency, such as green equipment, industrial applications, HVACR.

Ensure optimal airflow output by precisely adjusting the speed/rate of the fan;

Allow the systems to achieve better performance while using less energy;

Maintain the applications' operating effectiveness and stability.

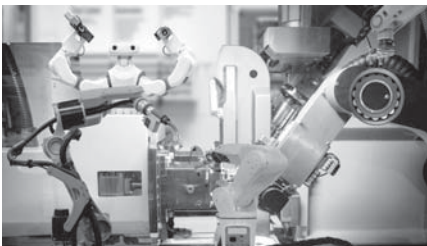
This serves to meet the global need for eco-friendly and power-saving.



Energy Storage & EV Charging Systems

Energy storage systems and EV charging equipment are both categorized as high-power consumption applications. When a large amount of heat is consistently generated and transferred due to the high-performance storing and charging processes (over 2.5kW), poor heat dissipation within these systems can cause system malfunctions and decreased charging ineffectiveness.

The heat can be effectively dissipated inside of the system by utilizing SUNON's eco-friendly & high-performance EC solutions with optimal air field design, and then the application's long-lasting energy storing and charging efficiency will be sustained, providing a stable and reliable green power supply.



Industrials & Machinery Equipment

Electric control equipment and switchboards within enclosure cabinets are embedded with built-in control circuits and precision components to sustain larger machinery operations. But, when the system temperature rises without proper thermal management, the circuits and components begin to degrade and aged quickly resulting in energy waste and potentially even machine failure.

SUNON's power-saving EC fans are meticulously managed via a built-in electronic control system in the motor structure, providing consistent airflow to the very dense electricity distribution structures. Therefore, there is no unnecessary energy waste and all machinery equipment can operate effectively without about the risk of breakdowns.



Heating, Ventilating and Air Conditioning (HVAC) systems

HVAC applications operate day and night, meaning their heat load fluctuates wildly. This fluctuation has a significant impact on system performance, and it is also accompanied by unnecessary energy consumption if a lack of an effective heat dissipation design.

SUNON's EC fan solutions, direct-driven components that attach to circuit elements, not only rectify current input and output but also control speed via the motors' PWM function. The EC fans' thermal performance is similar to that of conventional fans' but features a lower power consumption.



Commercial Freezers & Refrigerators

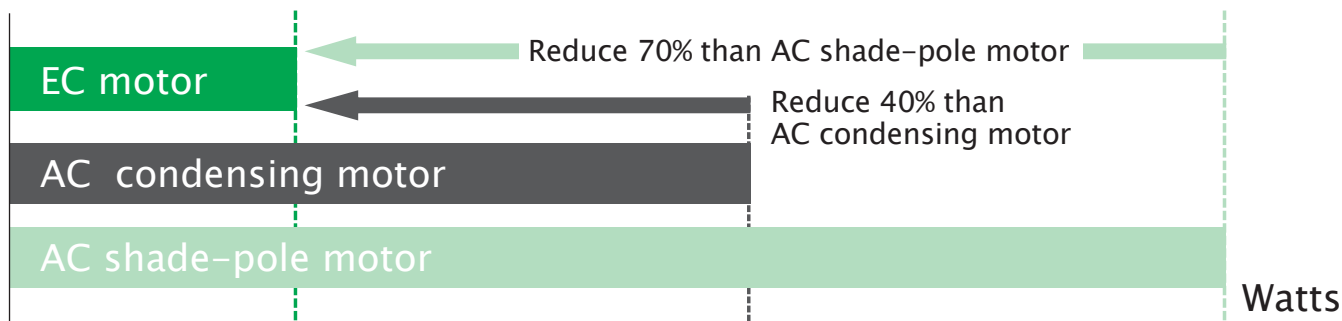
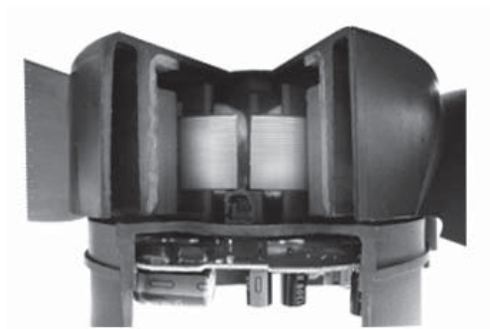
Refrigeration operates in 24-hour thermostatic conditions that come with considerable operational cost and energy consumption. SUNON's EC fans are just as high-performing as DC fans but they can also run on an AC supply, saving over 80% more energy compared with traditional thermal fans. Also, the fan speed can be controlled based on the operating needs at different times of day to reduce energy waste.

High humidity and exposure to dangerous substances in the air, such as refrigerants, are common complications in the operating environments of commercial freezer and refrigerator applications. SUNON's EC fans come equipped with high IP55 and IP68 waterproof protection ratings as well as ATEX-certified solutions to not only ensure optimal application lifespan and safety.

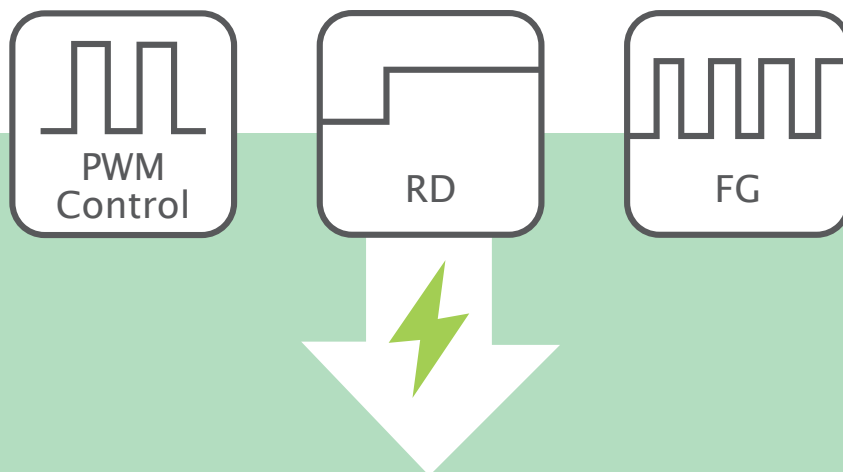
Motor Technology

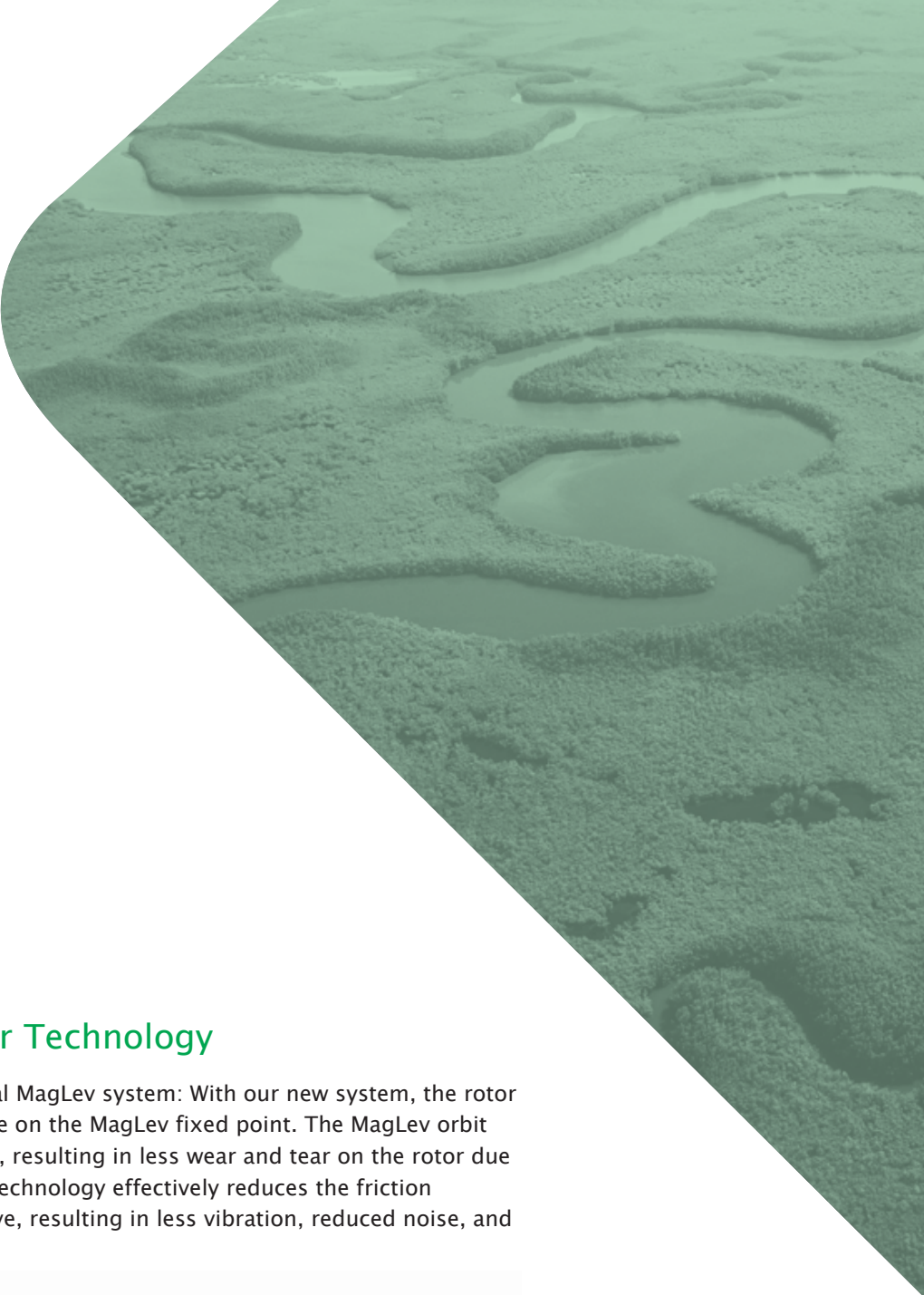
Energy Saving

SUNON EC fans are able to run on an AC supply by adopting DC motor and rectification technology, delivering a blend of excellent energy conversion effectiveness, low power consumption, and thermal efficiency. In addition, our fan solutions include speed control circuits that manage power use at both peak and off-peak operating times, resulting in dual energy-saving capabilities.



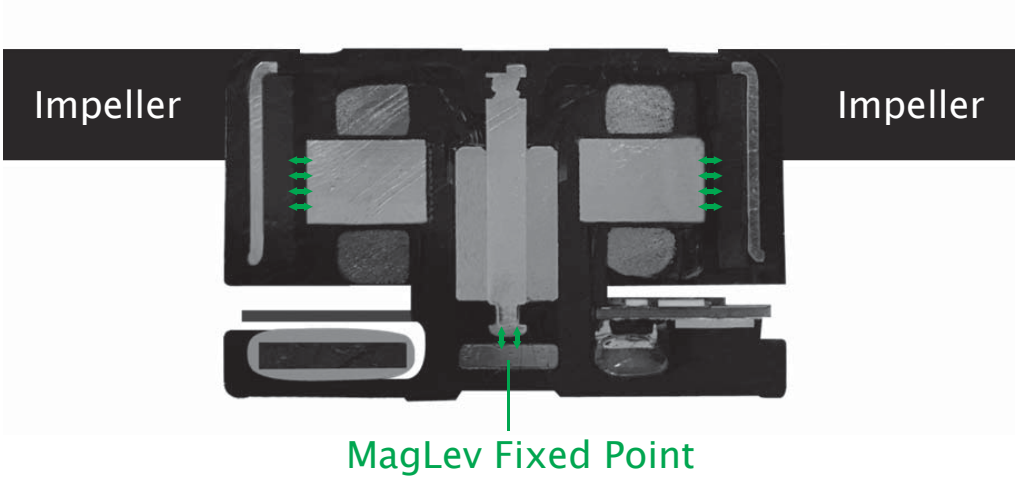
Full-Speed Controls to Save More Energy





Innovative MagLev Motor Technology

Introducing SUNON's patented vertical MagLev system: With our new system, the rotor of the MagLev EC fan can stably rotate on the MagLev fixed point. The MagLev orbit stabilizes the rotor's center of gravity, resulting in less wear and tear on the rotor due to rotor wobbling and shaking. This technology effectively reduces the friction between the shaft and the VAPO sleeve, resulting in less vibration, reduced noise, and even lower power consumption.



Protection Technology

Premium IP55- & IP68-Rated EC Fans

※ After being irradiated by a UV lamp, it will show a fluorescent reaction.



Ingress Protection	IP21	IP55	IP68
Technics	Conformal Coating	Conformal Coating	Potting
Available	Sleeve / Vapo / Ball	Ball	Ball

IP rating	Size (mm)	Full model	Description
IP55	120x120x38	CF4113HBL-10000-AB9	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing
		CF4113MBL-10000-AB9	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing
		CF4113LBL-10000-AB9	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing
IP68	Ø250x77.4	CF2207LBL-0000-HB9	Axial fan, 220-240 Vac, 50/60 Hz, Ball bearing
		CF4113HBL-0000-AE9	Axial fan, 110/230 Vac, 50/60 Hz, Ball bearing
	120x120x38	CF4113MBL-0000-AE9	Axial fan, 110/230 Vac, 50/60 Hz, Ball bearing
		CF4113LBL-0000-AE9	Axial fan, 110/230 Vac, 50/60 Hz, Ball bearing
		CF2207LBL-0000-HE9	Axial fan, 220-240 Vac, 50/60 Hz, Ball bearing

Explosion-Proof ATEX Certificate

ATEX Directives define the essential health and safety requirements that must be met for electrical products and protective systems used in potentially explosive atmospheres. SUNON is pleased to offer thermal solutions with ATEX compliance for commercial refrigeration, freezers, and industrial applications, ensuring that the heat-dissipating system works efficiently during sustained operation and that the application is consistently protected from the risk of explosions.

Suitable For	Definitions
ATEX Models	EC 12038 with potting design
Voltage	EC models with full voltage capacity (range: 90-264 VAC) (exclu. MA fan series)
Operational Temperature	CF 12038 : -25°C - 70°C
IP Rating	IP55 and IP68 potting models
Explosive Atmosphere	Coke oven gas, Ethyl nitrite, Acetylene, Carbon disulphide, Carbon monoxide, Methane
Special Requirements	Feasibility assessment, custom-designed services: co-op with a third party lab (extra evaluation charge)



Size (mm)	Model	Description
120x120x38	CF4113HBL(T)-0000-ABD	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP55
	CF4113HBL(T)-0000-AED	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP68
	CF4113MBL(T)-0000-ABD	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP55
	CF4113MBL(T)-0000-AED	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP68
	CF4113LBL(T)-0000-ABD	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP55
	CF4113LBL(T)-0000-AED	Axial fan, 100-240 Vac, 50/60 Hz, Ball bearing, IP68

Thermal Solution

EC Energy-Saving

High-Efficient Heat Convection & Dissipation
with Eco-Friendly Control Technology

MagLev EC Fan



size (mm)	Model	Bearing	Rated Voltage (V)	Freq. (Hz)	Power Current (AMP)	Power (W)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H ₂ O)	Noise (dB(A))	Operation Temperature (°C)
60x60x25	CF1062HVL-10000-999	Vapo	100-120	50/60	0.224/0.220	2.7/2.8	4100/4200	17.5/18.0	0.19/0.20	30.0/31.0	-20°C ~+70°C
	CF2062HVL-10000-999	Vapo	200-240	50/60	0.276/0.292	3.3/3.6	4100/4200	17.5/18.0	0.19/0.20	30.0/31.0	
70x70x25	CF1072HVL-10000-999	Vapo	100-120	50/60	0.241/0.235	3.0/3.1	3500/3600	28.0/29.0	0.17/0.18	30.0/31.0	
	CF2072HVL-10000-999	Vapo	200-240	50/60	0.293/0.304	3.6/3.9	3500/3600	28.0/29.0	0.17/0.18	30.0/31.0	
80x80x25	CF1082HVL-10000-999	Vapo	100-120	50/60	0.221/0.211	3.2/3.3	3100/3200	40.0/41.0	0.14/0.15	32.0/33.0	
	CF2082HVL-10000-999	Vapo	200-240	50/60	0.242/0.255	3.6/3.9	3100/3200	40.0/41.0	0.14/0.15	32.0/33.0	
92x92x25	CF1092HVL-10000-999	Vapo	100-120	50/60	0.240/0.230	3.3/3.4	2800/2900	52.0/54.0	0.12/0.14	31.0/32.0	
	CF2092HVL-10000-999	Vapo	200-240	50/60	0.249/0.264	3.8/4.2	2800/2900	52.0/54.0	0.12/0.14	31.0/32.0	

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Eco-EC Fan

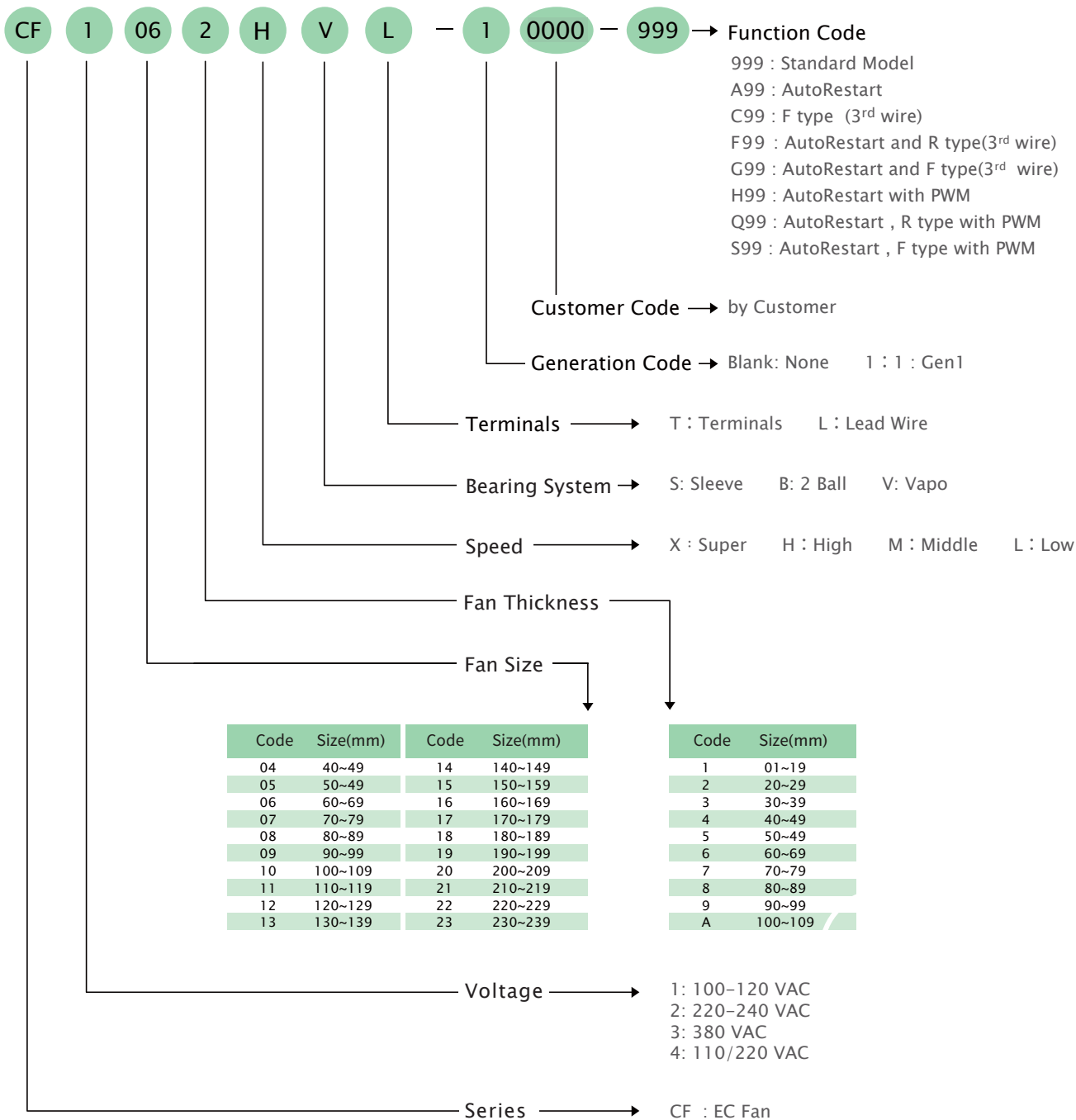


size (mm)	Model	Bearing	Rated Voltage (V)	Freq. (Hz)	Power Current (AMP)	Power (W)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dB(A))	Operation Temperature (°C)	Protection		
120x120x38	CF4113HBL-10000-A99	Ball	100-240	50/60	0.107/0.058	5.1	3600	109	0.37	44.9	-25°C~+70°C	-		
	CF4113HBL-10000-AA9	Ball	100-240	50/60	0.107/0.058	5.1	3600	109	0.37	44.9	-25°C~+70°C	IP21		
	CF4113HBL-10000-AB9	Ball	100-240	50/60	0.107/0.058	5.1	3600	109	0.37	44.9	-25°C~+70°C	IP55		
	CF4113HBL-0000-AE9	Ball	110-230	50/60	0.081/0.056	5.1	3500	109	0.37	44.9	-25°C~+70°C	IP68		
	CF4113HBL-0000-ABD	Ball	100-240	50/60	0.081/0.056	5.1	3500	109	0.37	44.9	-25°C~+70°C	IP55, ATEX		
	CF4113HBL-0000-AED	Ball	100-240	50/60	0.081/0.056	5.1	3500	109	0.37	44.9	-25°C~+70°C	IP68, ATEX		
	CF4113MBL-10000-A99	Ball	100-240	50/60	0.08/0.045	3.6	3100	90.1	0.31	40.2	40.2	-25°C~+70°C	-	
	CF4113MBL-10000-AA9	Ball	100-240	50/60	0.08/0.045	3.6	3100	90.1	0.31	40.2	40.2	-25°C~+70°C	IP21	
	CF4113MBL-10000-AB9	Ball	100-240	50/60	0.08/0.045	3.6	3100	90.1	0.31	40.2	40.2	-25°C~+70°C	IP55	
	CF4113MBL-0000-AE9	Ball	110-230	50/60	0.061/0.037	3.4	3000	90.1	0.31	40.2	40.2	-25°C~+70°C	IP68	
	CF4113MBL-0000-ABD	Ball	100-240	50/60	0.061/0.037	3.4	3100	90.1	0.31	40.2	40.2	-25°C~+70°C	IP55, ATEX	
	CF4113MBL-0000-AED	Ball	100-240	50/60	0.061/0.037	3.4	3100	90.1	0.31	40.2	40.2	-25°C~+70°C	IP68, ATEX	
	CF4113LBL-10000-A99	Ball	100-240	50/60	0.038/0.025	1.8	2100	64.3	0.17	31.4	31.4	-25°C~+70°C	-	
	CF4113LBL-10000-AA9	Ball	100-240	50/60	0.038/0.025	1.8	2100	64.3	0.17	31.4	31.4	-25°C~+70°C	IP21	
	CF4113LBL-10000-AB9	Ball	100-240	50/60	0.038/0.025	1.8	2100	64.3	0.17	31.4	31.4	-25°C~+70°C	IP55	
	CF4113LBL-0000-AE9	Ball	110-230	50/60	0.037/0.022	1.8	2000	64.3	0.17	31.4	31.4	-25°C~+70°C	IP68	
	CF4113LBL-0000-ABD	Ball	100-240	50/60	0.037/0.022	1.8	2000	64.3	0.17	31.4	31.4	-25°C~+70°C	IP55, ATEX	
	CF4113LBL-0000-AED	Ball	100-240	50/60	0.037/0.022	1.8	2000	64.3	0.17	31.4	31.4	-25°C~+70°C	IP68, ATEX	
	Ø200x77.4	CF2207LBL-0000-HB9	Ball	220-240	50/60	(H) 0.07 (L) 0.038	(H) 6.6 (L) 3.2	(H) 1400 (L) 950	(H) 278.8 (L) 186	(H) 0.3 (L) 0.16	(H) 41.2 (L) 29.9	(H) 41.2 (L) 29.9	-40°C~+50°C	IP55
		CF2207LBL-0000-HE9	Ball	220-240	50/60	(H) 0.07 (L) 0.038	(H) 6.6 (L) 3.2	(H) 1400 (L) 950	(H) 278.8 (L) 186	(H) 0.3 (L) 0.16	(H) 41.2 (L) 29.9	(H) 41.2 (L) 29.9	-40°C~+50°C	IP68

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■ EC Fan New Model Numbering System



Certification




- ※ Note : For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.
- ※ Note : The “Life Expectancy” of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

60x60x25 mm

17.5~18.0 CFM



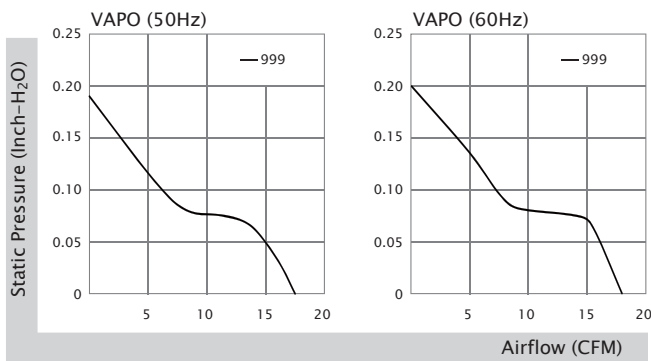
Specifications

	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ◎ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF1062HVL-10000-999	●	100-120	50/60	0.224/0.220	2.7/2.8	4100/4200	17.5/18.0	0.19/0.20	30.0/31.0	76.6
CF2062HVL-10000-999	●	200-240	50/60	0.276/0.292	3.3/3.6	4100/4200	17.5/18.0	0.19/0.20	30.0/31.0	76.6

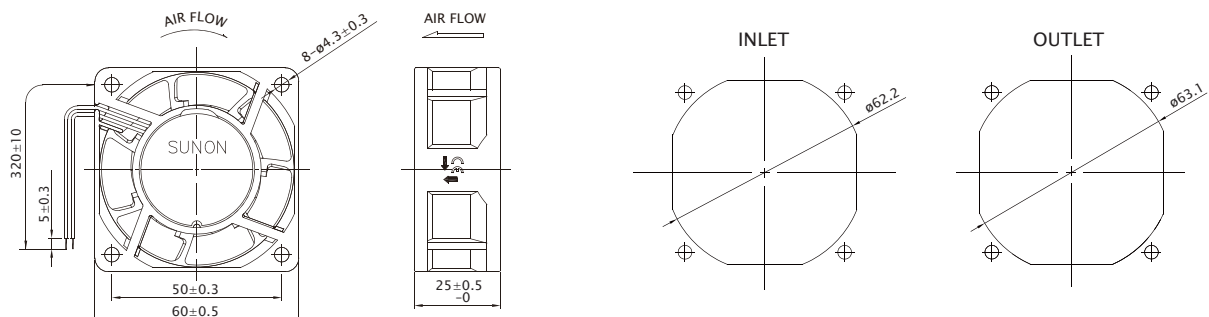
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

Air Flow-Static Pressure Characteristics



External Dimensions(mm)



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70x70x25 mm

28.0~29.0 CFM



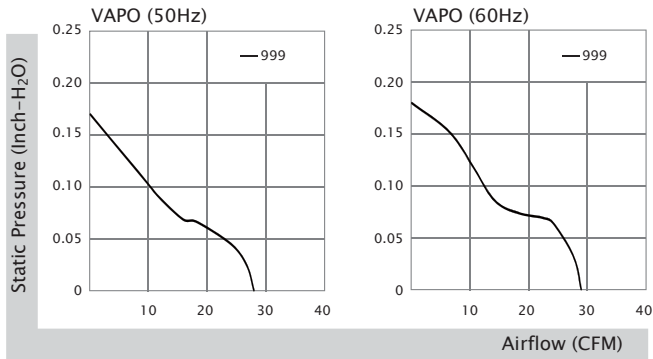
■ Specifications

	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ⊙ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF1072HVL-10000-999	●	100-120	50/60	0.241/0.235	3.0/3.1	3500/3600	28.0/29.0	0.17/0.18	30.0/31.0	85.4
CF2072HVL-10000-999	●	200-240	50/60	0.293/0.304	3.6/3.9	3500/3600	28.0/29.0	0.17/0.18	30.0/31.0	85.4

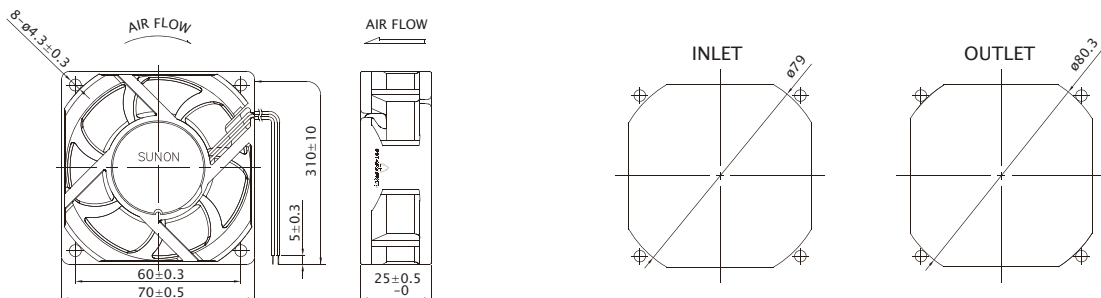
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



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80x80x25 mm

40.0~41.0 CFM



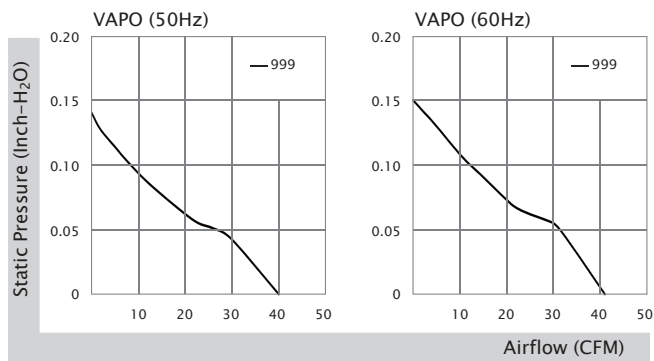
■ Specifications

	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ⊙ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF1082HVL-10000-999	●	100-120	50/60	0.221/0.211	3.2/3.3	3100/3200	40.0/41.0	0.14/0.15	32.0/33.0	99.3
CF2082HVL-10000-999	●	200-240	50/60	0.242/0.255	3.6/3.9	3100/3200	40.0/41.0	0.14/0.15	32.0/33.0	99.3

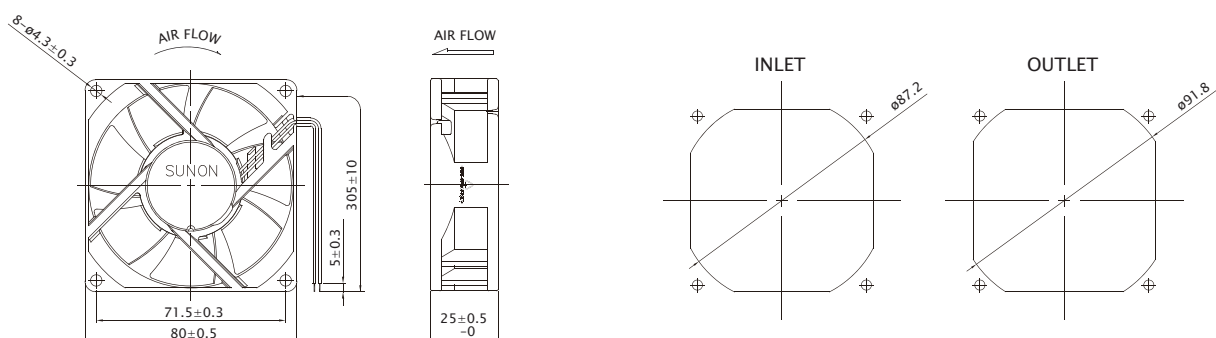
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



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92x92x25 mm

52.0~54.0 CFM



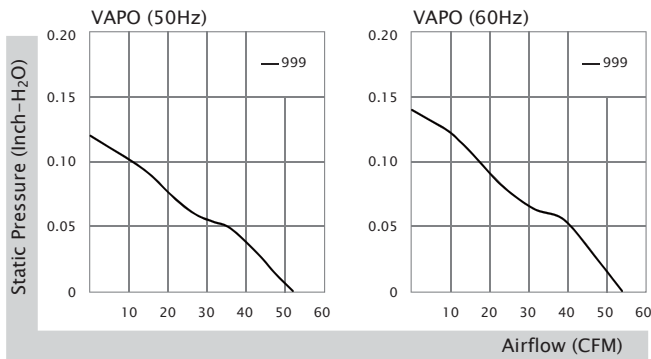
■ Specifications

	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ○ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF1092HVL-10000-999	●	100-120	50/60	0.240/0.230	3.3/3.4	2800/2900	52.0/54.0	0.12/0.14	31.0/32.0	110.4
CF2092HVL-10000-999	●	200-240	50/60	0.249/0.264	3.8/4.2	2800/2900	52.0/54.0	0.12/0.14	31.0/32.0	110.4

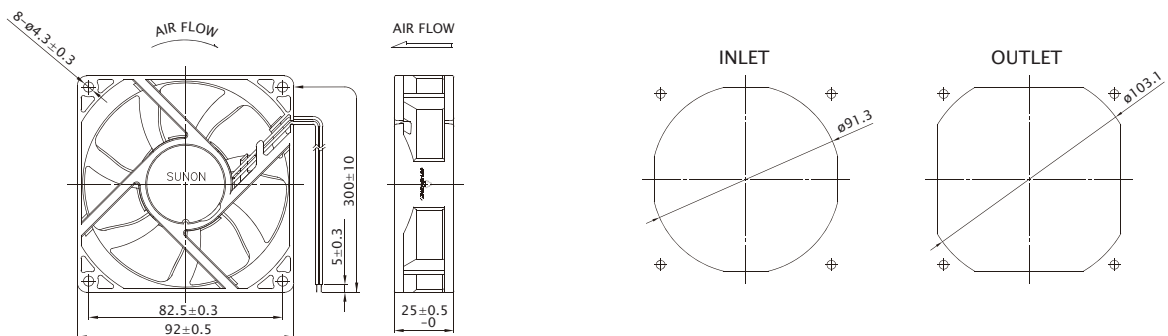
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



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120x120x38 mm(IP21 / IP55)

90.1~109 CFM



■ Specifications

Model	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ○ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF4113HBL-10000-A99	○	100-240	50 / 60	0.107 / 0.058	5.10	3600	109.0	0.37	44.9	265
CF4113HBT-10000-A99	○	100-240	50 / 60	0.107 / 0.058	5.10	3600	109.0	0.37	44.9	265
CF4113MBL-10000-A99	○	100-240	50 / 60	0.08 / 0.045	3.60	3100	90.1	0.31	40.2	265
CF4113MBT-10000-A99	○	100-240	50 / 60	0.08 / 0.045	3.60	3100	90.1	0.31	40.2	265

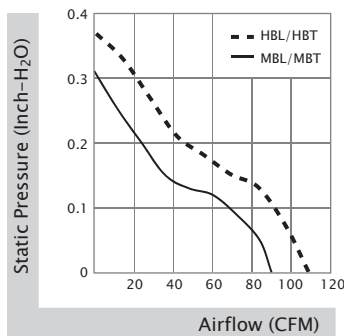
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

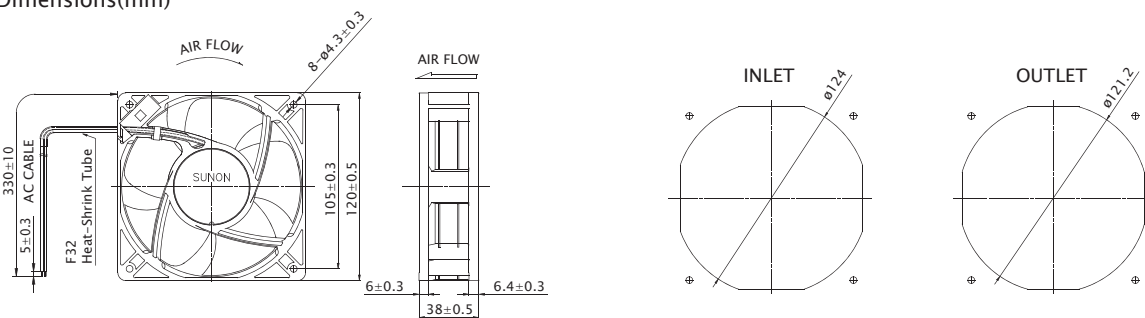
■ Function PWM : S99

■ Protection IP21 : AA9, SA9 IP55 : AB9, SB9

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



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120x120x38 mm(IP68/ATEX)

64.3~109.0 CFM



■ Specifications

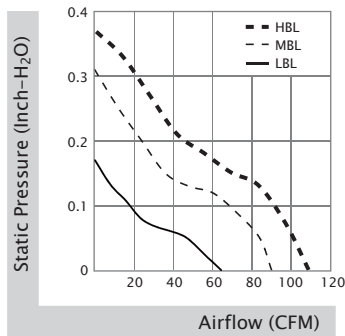
Model	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ○ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF4113HBL-0000-AE9	○	100-240	50 / 60	0.081 / 0.056	5.10	3500	109.0	0.37	44.9	317
CF4113MBL-0000-AE9	○	100-240	50 / 60	0.061 / 0.037	3.40	3000	90.1	0.31	40.2	317
CF4113LBL-0000-AE9	○	100-240	50 / 60	0.037 / 0.022	1.80	2000	64.3	0.17	31.4	317

Frame : PBT Plastic

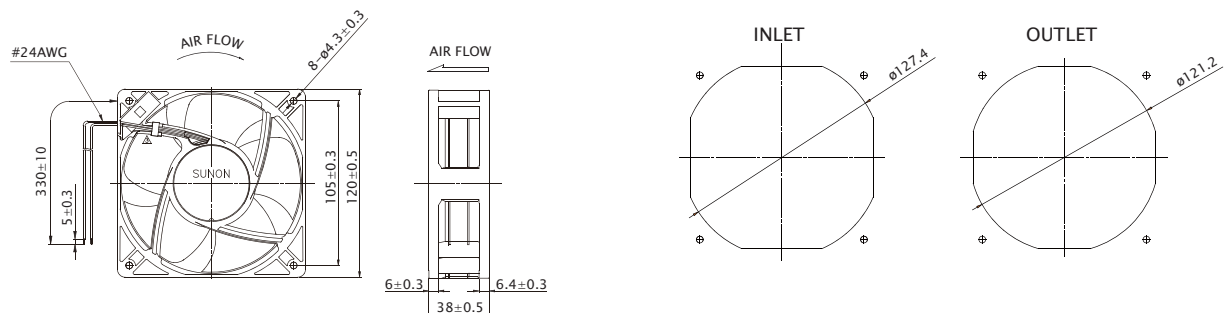
Safety : CE/TUV/UL/CUL

■ Protection IP55+ATEX : ABD IP68 +ATEX: AED

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



*All model could be customized. Please contact with SUNON sales.

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.

ø200x77.4 mm(IP55 / IP68)

186.0~278.8 CFM



■ Specifications

Model	Bearing	Rating Voltage	Freq.	Power Current	Power Consumption	Speed	Air Flow	Static Pressure	Noise	Weight
	● VAPO ○ BALL ◎ Sleeve	(VAC)	(Hz)	(AMP)	(WATTS)	(RPM)	(CFM)	(Inch-H ₂ O)	(dB(A))	(g)
CF2207LBL-0000-HB9	○	220-240	50 / 60	(H) 0.070 (L) 0.038	(H) 6.60 (L) 3.20	(H)1400 (L) 950	(H) 278.8 (L) 186.0	(H) 0.30 (L) 0.16	(H) 41.2 (L) 29.9	1100

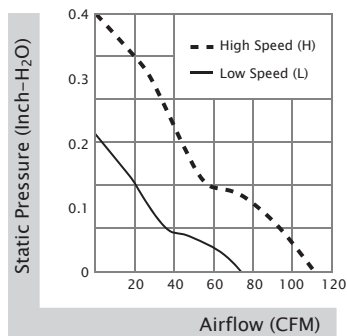
Frame : PBT Plastic

Safety : CE/TUV/UL/CUL

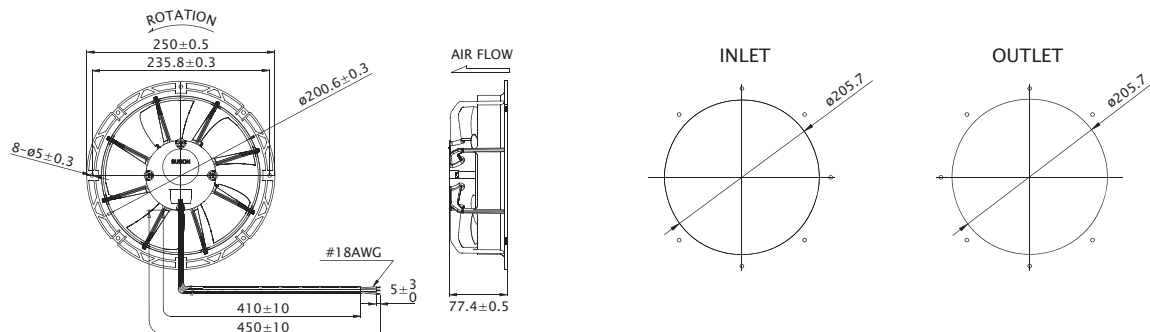
■ Function AutoRestart : HB9, HE9

■ Protection IP55 : HB9 IP68 : HE9

■ Air Flow-Static Pressure Characteristics



■ External Dimensions(mm)



*All model could be customized. Please contact with SUNON sales.

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