

Model:ECF(K)6E220-PLHDAJ1

Fan type:EC Backward curved centrifugal fan



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Fan Introduction

This product consist of outer rotor(EC)motor, backward curved centrifugal impeller, with features of compact structure, large airflow, high static pressure, low vibration, low noise, convenient installation, energy saving, high efficiency etc..

Scope of application

General purpose fan, can be widely used in purification of air conditioning systems, ventilation duct dust, environmental protection, refrigeration equipment and other fields.

Environmental requirements

- Operating ambient temperature range:-25℃~+50℃
- Working environment humidity range:≤90%
- Transportation and storage temperature range:-40℃~+80℃
- Transportation and storage environment humidity range:≤80%
- The storage place is well ventilated, corrosive gases not contained.

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Design, manufacturing, testing standards and certification

- JB-T10563 Technical specification for general purposes centrifugal fans
- GB/T 14711 General safety requirements for Medium and small rotary motor
- GB/T 755/IEC60034-1 rotary motor quota and performance
- GB 4706.32-2012/IEC 60335-2-40:2005 Household and similar electrical appliances - Safety - Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers
- The level of balance is in accordance with ISO 1940, G6.3
- Vibration testing and velocity is performed according to JB/T8689.
- This product is certified by China CCC and EU CE
- ISO 9001 quality system certification

Technical features

Mass	2.4 kg
Size	φ220 mm
Impeller material	Plastic
Rotation	Counter-clockwise(Seen from cable exit)
Protection class	IP54
Insulation class	F
Mounting	Shaft horizontal or rotor on bottom; rotor on top on request
Mode of operation	S1(Continuous operation)
Bearings	Maintenance-free ball bearings
Controller	Controller integrated with motor, 0~10V or PWM control

Structures

Inlet type	Single Inlet
Impeller type	Backward curved impeller
Housing	Without housing; With inlet ring;

Technical parameters

Supply	1P,200~277V
Frequency	50/60 Hz

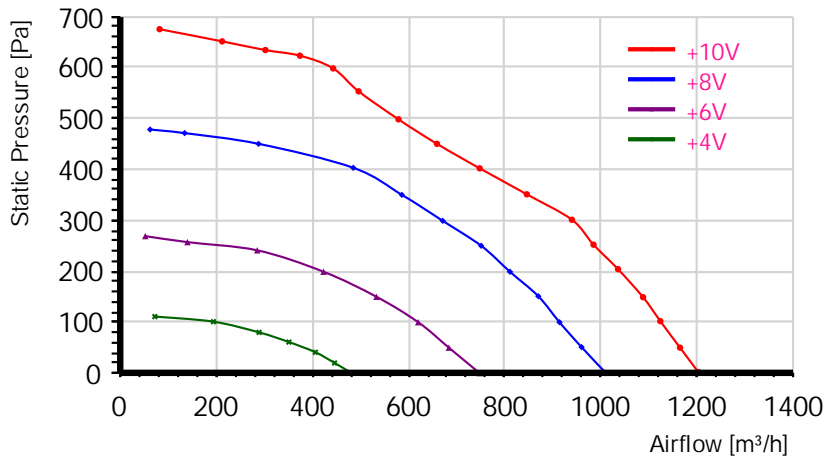
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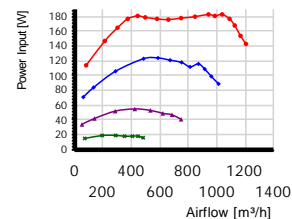
Rated voltage	230 VAC
Power input	180 W
Rated current	1.3 A
Rated speed	3350 r/min
Max airflow	1200 m ³ /h (Static pressure=0Pa)
Acoustic	68 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

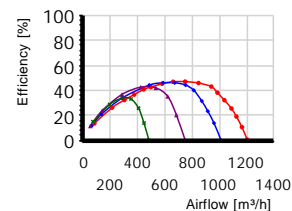
Airflow curve



Power input curve



Efficiency on static pressure



Performance test with reference to GB/T 1236-2017, equivalent to ISO 5801

TestID	2016051908		Control voltage	10 VDC						
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
203mm	0.0324m ²	22°C	77%	101.9kPa	1.2kg/m ³					
Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m ³ /h	Pa	Pa	Pa	Pa	mm
231.7	50	3480	114	0.83	82	675	0	676	651	30
231.8	50	3480	147	1.04	212	651	2	653	567	30+40
231.5	50	3480	165	1.18	302	634	4	638	289	30+40+50
231.4	50	3480	177	1.22	374	623	6	629	438	30+40+50
232.1	50	3440	181	1.26	443	598	9	607	281	30+40+70
230.4	50	3380	179	1.26	496	553	11	564	198	30+40+50+70

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230.6	50	3330	177	1.24	579	498	15	513	269	30+40+50+70
231.2	50	3320	176	1.23	659	450	19	470	347	30+40+50+70
230.5	50	3350	178	1.24	748	402	24	426	446	30+40+50+70
231.3	50	3380	180	1.25	846	351	31	383	249	30+40+50+100
232.2	50	3460	183	1.26	940	301	39	340	306	30+40+50+100
231.4	50	3470	181	1.25	985	252	43	294	336	30+40+50+100
231.1	50	3460	183	1.28	1036	204	47	251	212	30+40+50+70+100
231	50	3480	177	1.21	1088	149	52	201	234	30+40+50+70+100
230.9	50	3480	168	1.15	1124	102	55	157	249	30+40+50+70+100
231.3	50	3480	154	1.07	1165	50	60	110	267	30+40+50+70+100
231.2	50	3480	143	1	1203	2	63	65	285	30+40+50+70+100

TestID	2016052001			Control voltage	8 VDC		
Test environment							
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density		
203mm	0.0324m ²	22℃	83%	101.5kPa	1.2kg/m ³		

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m ³ /h	Pa	Pa	Pa	Pa	mm
230.8	50	2942	71	0.56	62	478	0	478	377	30
229.9	50	2944	84	0.64	134	471	1	472	228	30+40
232.7	50	2943	106	0.78	288	450	4	454	262	30+40+50
231.3	50	2943	123	0.94	485	403	10	413	337	30+40+70
231.7	50	2940	124	0.91	586	350	15	365	276	30+40+50+70
230.9	50	2942	121	0.89	671	299	20	319	360	30+40+50+70
230.9	50	2943	118	0.87	751	250	25	274	450	30+40+50+70
229.5	50	2944	112	0.83	811	199	29	228	229	30+40+50+100
230.5	50	2943	116	0.86	870	151	33	184	263	30+40+50+100
230.1	50	2944	109	0.82	914	100	36	137	290	30+40+50+100
230.6	50	2943	99	0.75	960	51	40	91	319	30+40+50+100
230.7	50	2945	89	0.67	1011	0	45	45	202	30+40+50+70+100

TestID	2016052002			Control voltage	6 VDC		
Test environment							
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density		
203mm	0.0324m ²	22℃	83%	101.5kPa	1.2kg/m ³		

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m ³ /h	Pa	Pa	Pa	Pa	mm
229.7	50	2197	34	0.28	52	269	0	269	265	30
229.4	50	2195	42	0.35	140	257	1	258	250	30+40

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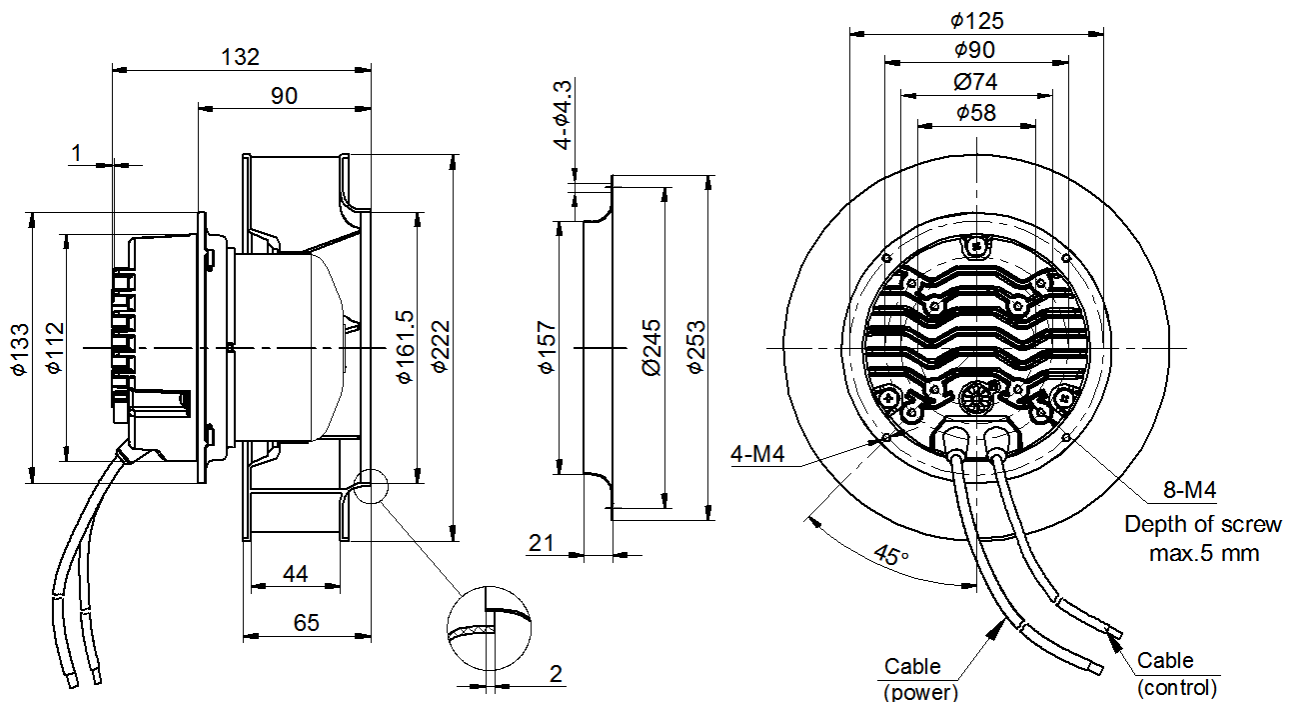
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231	50	2192	52	0.42	285	241	4	244	257	30+40+50
230	50	2192	55	0.43	423	199	8	207	257	30+40+70
230.4	50	2193	53	0.41	533	150	12	162	228	30+40+50+70
228.7	50	2194	49	0.39	620	100	17	117	308	30+40+50+70
229.4	50	2193	47	0.37	684	50	20	70	373	30+40+50+70
230.6	50	2196	41	0.33	748	0	24	25	446	30+40+50+70

TestID	2016052003		Control voltage	4 VDC		
Test environment						
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density	
203mm	0.0324m ²	22°C	83%	101.5kPa	1.2kg/m ³	

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m ³ /h	Pa	Pa	Pa	Pa	mm
230.6	50	1439	15	0.14	72	111	0	112	501	30
230.9	50	1434	19	0.17	194	101	2	103	475	30+40
230.2	50	1431	19	0.17	289	80	4	84	264	30+40+50
229.8	50	1432	18	0.16	351	61	5	66	386	30+40+50
228.8	50	1431	18	0.17	406	41	7	48	236	30+40+70
229.6	50	1434	18	0.16	446	20	9	29	285	30+40+70
230	50	1436	16	0.14	482	0	10	10	332	30+40+70

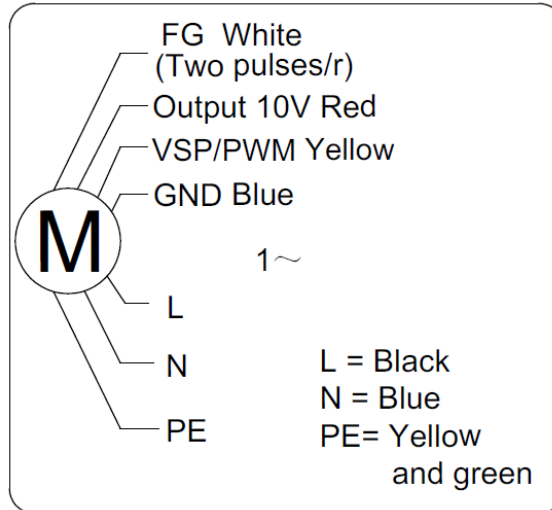
Dimensions(in mm)



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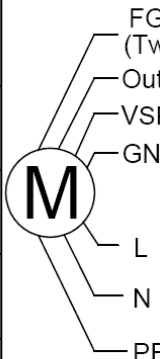


Wiring diagram



Electrical connections

Connection	Assignment/function
L、N	Single-phase supply connection, voltage range 200-277VAC, frequency 50/60Hz
PE	Protective earth
FG	Speed feedback pulse output, 2 pulses per revolution, can be customized
+10V	10VDC output, maximum output current 10mA
VSP/PWM	Speed control signal input connection, 0-10V voltage or PWM signal (amplitude 10-12V, frequency 1-10kHz)
GND	Signal ground for control interface

NamePlate

 SANMU	ECF(K) 6E220-PLHDAJ1		 <p>(Adjustable speed with variable resistance)</p> <p>L = Black N = Blue PE = Yellow and green</p>
Volt.: 220~240V	Freq.: 50/60Hz	Amp.: 1.3A	
Input: 180W	Speed: 3350r/min	Airflow: 850m ³ /h	
Pst: 350Pa Static	Ip54	CL.F Erp2015 	
Rotation : 			

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Attentions

- ★Please check the appearance and the accessories if there is no damage before use, check the model is consistent with requirements;
- ★Keep reliable grounding according to the wiring diagram. to avoid motor burning and personal accident, please check wiring is loose or fall off;
- ★Before connect the power supply, check whether the motor is reliable, otherwise it will cause motor damage and personal injury;
- ★It is forbidden to pull the power cable, if the power cable is damaged, to be repaired before use, to avoid the accident of electric shock;
- ★Drop or impact motor is forbidden;
- ★Washing motor with water is prohibited, it will reduce the motor insulation level, even lead to electric leakage even endanger personal safety;
- ★Special customized product is designed for specified requirements, please consult with our engineers before change useage;
- ★The temperature of the motor shell may be higher in a short time after the fan stopped, Please avoid direct contact with the motor surface. If necessary, please take protective measures to prevent scald;
- ★Do not contact the impeller when the fan running, you need to wait for all the parts stopped before operate it;
- ★When the fan is installed, check and ensure thers is no debris in the shell and other shell body, keep the fan clean;
- ★After the fan installation complete, before connected to supply, please confirm that there is no collision or interference or stuck.

Product life and maintenance, warranty

- The design life of this product is 40,000 hours. This data is derived from the expected life of L10 for general ball bearings at 40°C is 40,000 hours. The actual service life of the product is affected by the use environment (temperature, humidity, installation, bearing load, etc.).

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- According to the use of the environment, please make a clean maintenance every 3~6 months.
- From the date of purchase (order delivery date), The warranty period is one year. During this period, for failure due to the quality of the product itself, we provide free replacement or repairing. If the damage caused by improper disassembly, transportation, artificial damage or natural disasters, etc., is not in the scope of this warranty;