

SUNON

SPECIFICATION FOR APPROVAL FOR REFERENCE

CUSTOMER :
DESCRIPTION : EC 500 AXIAL FAN
DIMENSION : 656X656X192MM
SUNON MODEL : CFAA350KG-1000U-IJ9
SUNON SEQ NO :
REV : 0
ISSUE DATE : 2025.10.31
APPROVED BY CUSTOMER :

Preliminary Data Sheet is for reference only, final specification might be changed according to design verification (or mass production) data.

APPROVED BY	JUSTIN	CHECKED BY	TOM	DESIGNED BY	NANCY
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1. SCOPE

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE EC AXIAL FAN.

2. CHARACTERISTICS

ITEM	DESCRIPTION
NOMINAL VOLTAGE	1~ 230 VAC 50/60HZ
RATED VOLTAGE	1~ 200-277 VAC
RATED POWER	494 W @ FREE AIR
MAX. LOAD POWER	707W
SPEED CONTROL	PWM RS485 (MODBUS-RTU) VOLTAGE CONTROL(0-10 VDC) CURRENT CONTROL(4-20mA)
RATED SPEED	1620 RPM
MAX. AIRFLOW	8899 m ³ /h 5235 CFM
MAX. STATIC PRESSURE	167 Pa 0.67 inch-H ₂ O
INSULATION CLASS	F
PROTECTION CLASS	I
INGRESS PROTECTION	IP55
LIFE EXPECTANCY	60,000 HOURS AT 40 °C WITH 15~65% RH
DIRECTION OF ROTATION	COUNTER-CLOCKWISE FROM BLADE SIDE
EMC	EN61000-6-2 , EN61000-6-3
SAFETY	CSA C22.2 NO.77 ; UL 1004-7 + 60730-1 ; EN 60335-1(IN PROCESS)

3. MECHANICAL

3.1	BEARING SYSTEM	:	BALL BEARING SYSTEM
3.2	FRAME	:	STEEL
3.3	FAN GUARD	:	STEEL
3.4	SUPPORT BRACKET	:	NA
3.5	SUPPORT PLATE	:	NA
3.6	INLET NOZZLE	:	NA
3.7	BLADE	:	PA66+25%GF
3.8	ELECTRONICS HOUSING	:	DIE-CAST ALUMINUM
3.9	IMPELLER BALANCE GRADE	:	G6.3 PER ISO 1940-1:2003(E)
3.10	WEIGHT	:	16 KG (REF.)

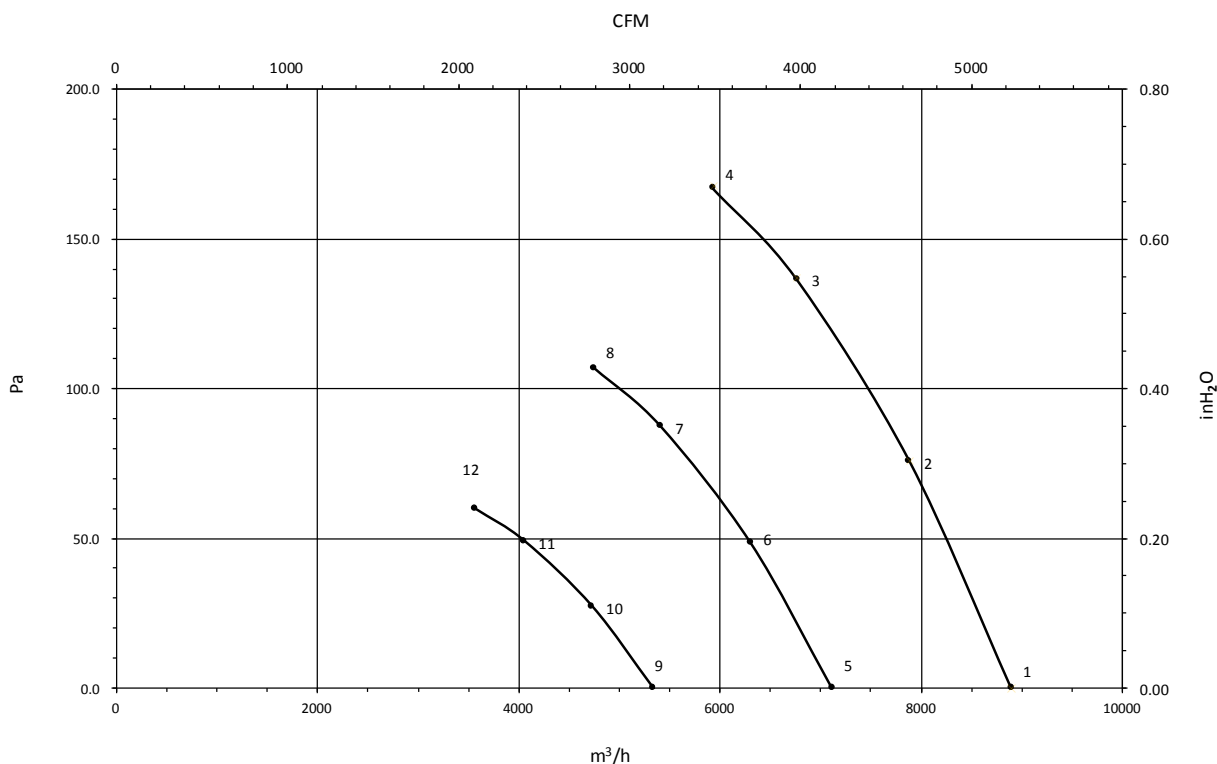
4. ENVIRONMENTAL

4.1	OPERATING TEMPERATURE RANGE	:	-25 TO + 60 DEGREE C
4.2	STORAGE TEMPERATURE RANGE	:	-40 TO + 80 DEGREE C

5. PROTECTION

- ☒ AUTOMATIC RESTART
- ☒ SOFT START
- ☒ OVER TEMPERATURE PROTECTION
- ☒ OVER LOAD PROTECTION
- ☒ OVER VOLTAGE PROTECTION
- ☒ LOCKED ROTOR PROTECTION

6. AIR FLOW & STATIC PRESSURE CURVE



MEASURE DATA:

Index	Static pressure		Air volume		Speed	Power	Current	Lp
	Pa	in-H ₂ O	m ³ /h	CFM	R.P.M.	W	A	dB(A)
1	0	0	8899	5235	1622	494	2.15	86.4
2	76	0.30	7887	4639	1623	601	2.62	
3	137	0.55	6766	3980	1509	670	2.92	
4	167	0.67	5936	3492	1624	707	3.08	
5	0	0	7119	4188	1297	253	1.10	81.9
6	49	0.19	6309	3711	1298	308	1.34	
7	88	0.35	5413	3184	1288	343	1.49	
8	107	0.43	4749	2793	1299	362	1.58	
9	0	0	5339	3141	973	107	0.46	75.6
10	27	0.11	4732	2784	974	130	0.57	
11	49	0.20	4059	2388	966	145	0.63	
12	60	0.24	3562	2095	974	153	0.67	

TEST CONDITION:

INPUT VOLTAGE: NOMINAL VOLTAGE.

TEMPERATURE: ROOM TEMPERATURE.

MEASURED WITHOUT FAN GUARD.

NOISE (LP) IS MEASURED AT A DISTANCE OF ONE METER FROM THE INLET SIDE.

ERP DIRECTIVE:

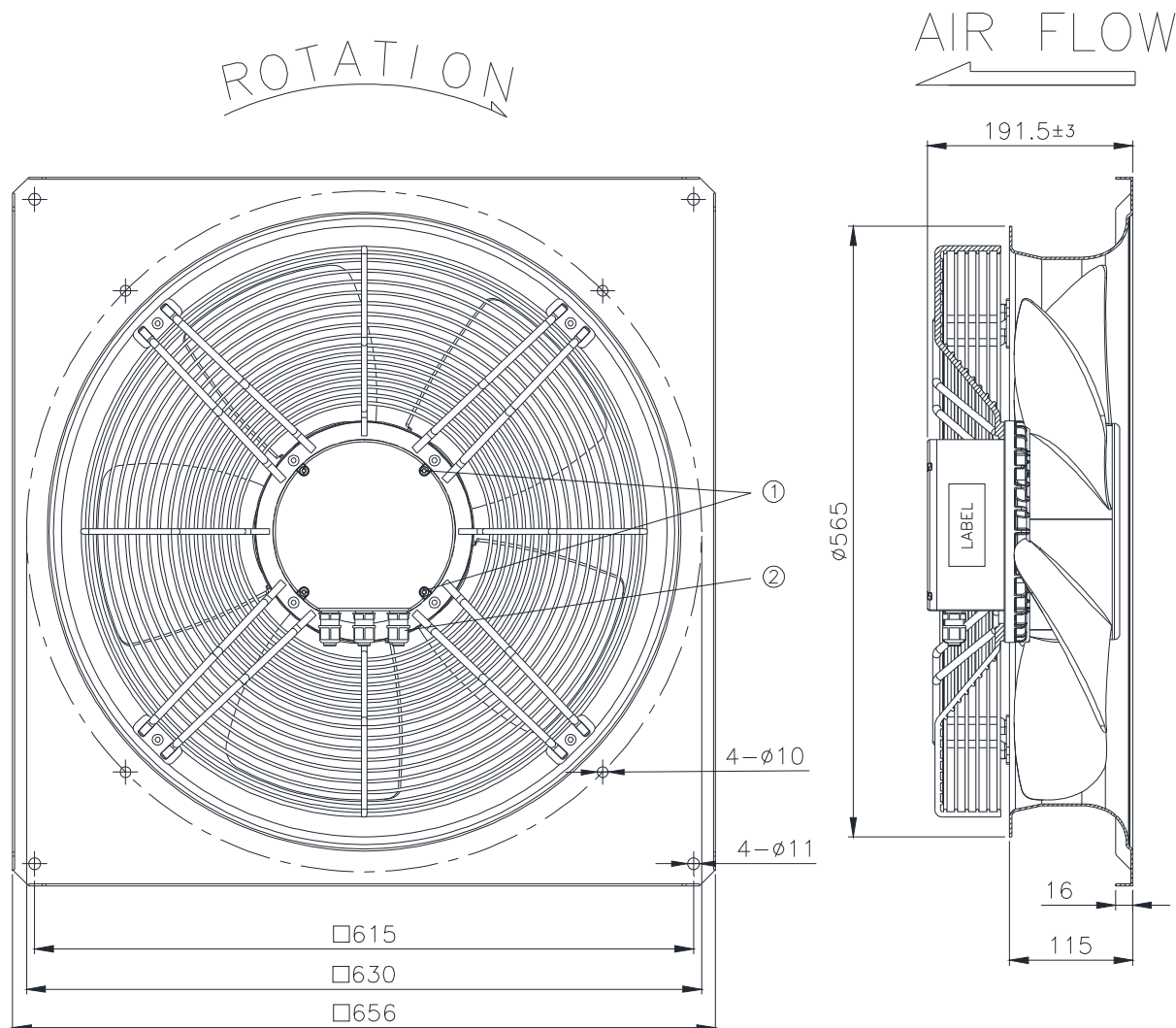
	Actual	2026
Over all Eff%	38.9	37.9
Eff Grade N	51.0	50
Power(kW)	0.70	
Air Flow(m ³ /h)	5932	
Pressure(Pa)	167	
Speed(RPM)	1624	

NOTE: The airflow and static pressure are measured with SUNON' s specific fixture.

7. DIMENSIONS

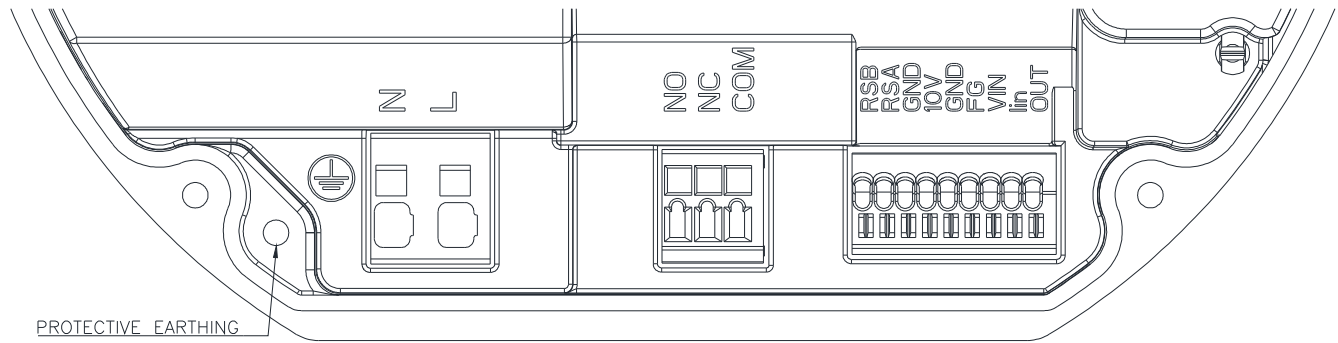
1	SCREW	TIGHTTENING TORQUE: 7~9 KGF-CM
2	CABLE GLAND	CABLE DIAMETER: 6~10 mm, TIGHTTENING TORQUE: 25~31 KGF-CM

NOTE: Above spec is available for customization.



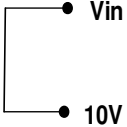
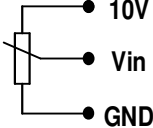
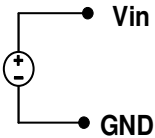
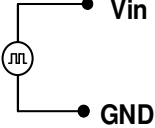
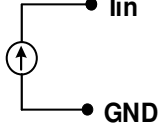
UNIT:mm

8. DEFFINITION OF TERMINAL BLOCK



	Text	Functions
Power	N	AC main(1~ 200-277VAC)
	L	AC main(1~ 200-277VAC)
Status	NO	Alarm relay,close by failure
	NC	Alarm relay,open by failure
	COM	Alarm relay, common (2A/250VAC)
Signal	RSB	RS485-B
	RSA	RS485-A
	GND	Ground
	10V	+10 V output, MAX 10 mA
	GND	Ground
	FG	Frequency generator (FG) signal
	Vin	Speed control, input 0-10 VDC
	Iin	Speed control, input 4-20 mA
	OUT	Control Voltage output 0-10 V

9. SPEED SETTING

Full Speed 	Short Vout & Vin Fan will run at full speed.
Voltage Control A 	Connector 1-10kΩ variable resistor Between 10V with GND and Vin (0-10V/PWM) Vary the variable resistance, to change the 'Vin' voltage (0-10V), then change FAN speed.
Voltage Control B 0-10V DC Source 	Use voltage source supply 0~10V_{DC} voltage DC+ : connector to Vin(+) DC- : connector to GND(-)
PWM Control PWM Generator 	PWM duty control PWM amplitude is 10V_{DC}($\pm 5\%$) Frequency Range is 100Hz-100kHz - PWM duty higher than 10%, fan start up. - PWM duty lower than 5%, fan stop.
Current Control 4-20mA Current Source 	4~20mA current control Open 0-10V/PWM PIN - 4.0mA $\rightarrow$ Fan stop - 5.6mA $\rightarrow$ Fan start up - 18.6mA $\rightarrow$ Maximum Speed

10. SIGNAL FUCTION

RS485 control function	RS485 control function –Select the control mode of speed, fixed speed or fixed PWM duty –Speed and power consumption feedback. –Allow multiple FANs control and status patrol. Cable: A MODBUS over Serial Line Cable must be shielded. At one end of each cable its shield must be connected to protective ground.																	
Control O/P	The analog signal level is the derivative of current control level. <table><tr><th>Current (mA)</th><th>Control O/P (VDC) (REF)</th></tr><tr><td>4.0</td><td>0</td></tr><tr><td>5.6</td><td>1.0</td></tr><tr><td>11.9</td><td>5.0</td></tr><tr><td>18.6</td><td>9.5</td></tr></table>			Current (mA)	Control O/P (VDC) (REF)	4.0	0	5.6	1.0	11.9	5.0	18.6	9.5					
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Alarm state	1. NC and COM will OPEN 2. NO and COM will CLOSE.																	
FG Signal	$V_{CE(sat)} = 0.7V \text{ MAX.}$ $V_{FG} = 30.0V \text{ MAX.}$ $I_c = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_c$ Frequency generator waveform $V_{FG} \pm 5\%$ $0.7V \text{ MAX.}$ OR TS T1 T2 RUNNING BLADE LOCKED RUNNING $N=R.P.M$ $TS=60/N(SEC)$ 1 PULSE PER REVOLUTION $T1=T2=1/2 \text{ TS}$																	

11. VOLTAGE 、PWM 、CURRENT CONTROL VS SPEED CURVE

VOLTAGE	0	0.5	1	2	3	4	5	6	7	8	9	10
PWM DUTY(%)	0	5	10	20	30	40	50	60	70	80	90	100
Current Control	4	5	5.6	6.9	8.4	10	11.9	13.5	15.1	16.7	18.6	20
Speed(rpm)	0	100	100	290	480	670	860	1050	1240	1430	1620	1620



NOTE: It is tested under free air condition. The same spec is not able to apply in static pressure condition