

**SERIES:** CFM-50CF | **DESCRIPTION:** DC AXIAL FAN**FEATURES**

- omniCOOL™ bearing system
- 50 x 50 mm frame
- multiple speed options
- PWM/tachometer wires available

**MODEL**

	input voltage		input current ¹		input power ¹		rated speed ¹	airflow ²	static pressure ³	noise ⁴
	rated [Vdc]	range [Vdc]	typ [A]	max [A]	typ [W]	max [W]	typ (RPM±10%)	[CFM]	[inch H ₂ O]	typ [dBA]
CFM-5015CF-130-224	12	10.8~13.2	0.04	0.06	0.48	0.72	3,000 ⁵	7.78	0.05	22.4
CFM-5015CF-145-312	12	10.8~13.2	0.06	0.09	0.72	1.08	4,500 ⁵	11.68	0.11	31.3
CFM-5015CF-160-374	12	10.8~13.2	0.10	0.15	1.20	1.80	6,000	15.57	0.20	37.4

Notes:

1. At rated voltage, after 3 minutes.
2. At rated voltage, room temperature, 65% humidity, 0 inch H₂O static pressure.
3. At rated voltage, 0 CFM airflow.
4. Measured in an anechoic chamber as per ISO3745/GB4214-84 at rated voltage, with background noise 20±2 dBA at 1 m from the fan intake.
5. Typical rated speed is measured as RPM±600 at rated voltage.
6. All specifications are measured at 25°C, 65% relative humidity unless otherwise specified.

PART NUMBER KEY

CFM-5015CF-130-224- XX - CXX

Base Number

Fan Signals
“blank” = no signals
20 = tachometer signal
22 = tachometer signal / PWM control signal

Reserved for Custom Configurations

INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		10.8	12	13.2	Vdc
starting voltage			7.0		Vdc

PERFORMANCE⁷

parameter	conditions/description	min	typ	max	units
rated speed	at rated voltage, 25°C, after 3 minutes	3,000		6,000	RPM
air flow	at 0 inch H ₂ O, see performance curves	7.78		15.57	CFM
static pressure	at 0 CFM, see performance curves	0.05		0.20	inch H ₂ O
noise	at 1 m, rated speed	22.4		37.4	dBA

Note: 7. See Model section on page 1 for specific values.

PROTECTIONS / FEATURES⁸

parameter	conditions/description	min	typ	max	units
polarity protection	on all models				
tachometer signal	available on “20” and “22” models				
PWM control signal	available on “22” models				

Notes: 8. See Application Notes for details.

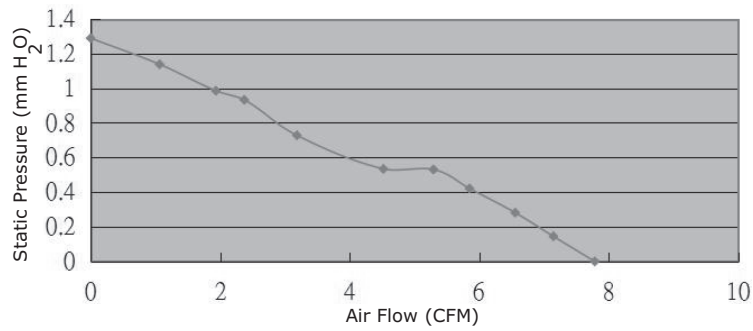
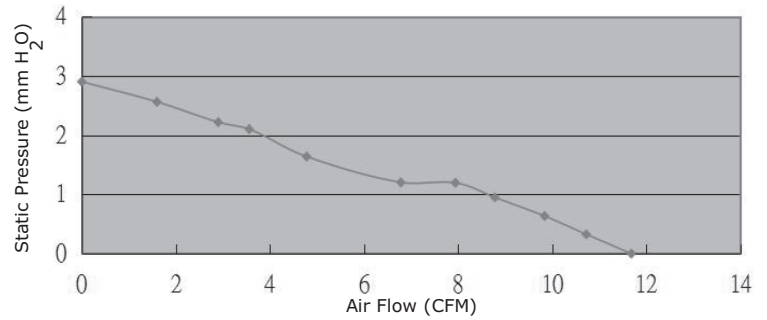
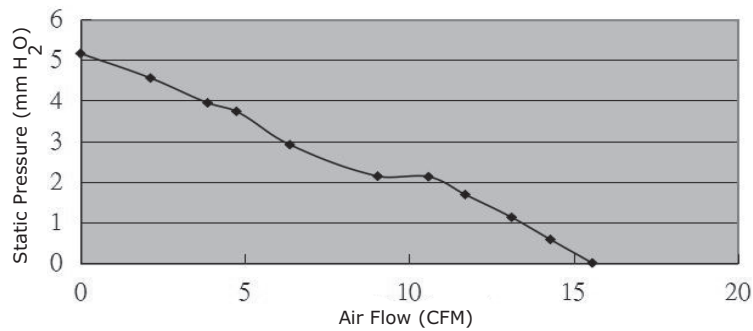
SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
insulation resistance	at 500 Vdc between frame and positive terminal	10			MΩ
dielectric strength	at 500 Vac, 60 Hz, 1 minute between housing and positive terminal			5	mA
safety approvals	UL/cUL 507, TUV (EN/IEC 62368-1:2020+A11)				
EMI/EMC	EN 55032:2015, EN 55035:2017				
life expectancy	at 40°C, 65% RH, 90% confidence level		40,000		hours
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-10		70	°C
storage temperature		-40		75	°C
operating humidity	non-condensing	35		85	%
storage humidity	non-condensing	35		85	%

PERFORMANCE CURVES

CFM-5015CF-130-224**CFM-5015CF-145-312****CFM-5015CF-160-374**

MECHANICAL

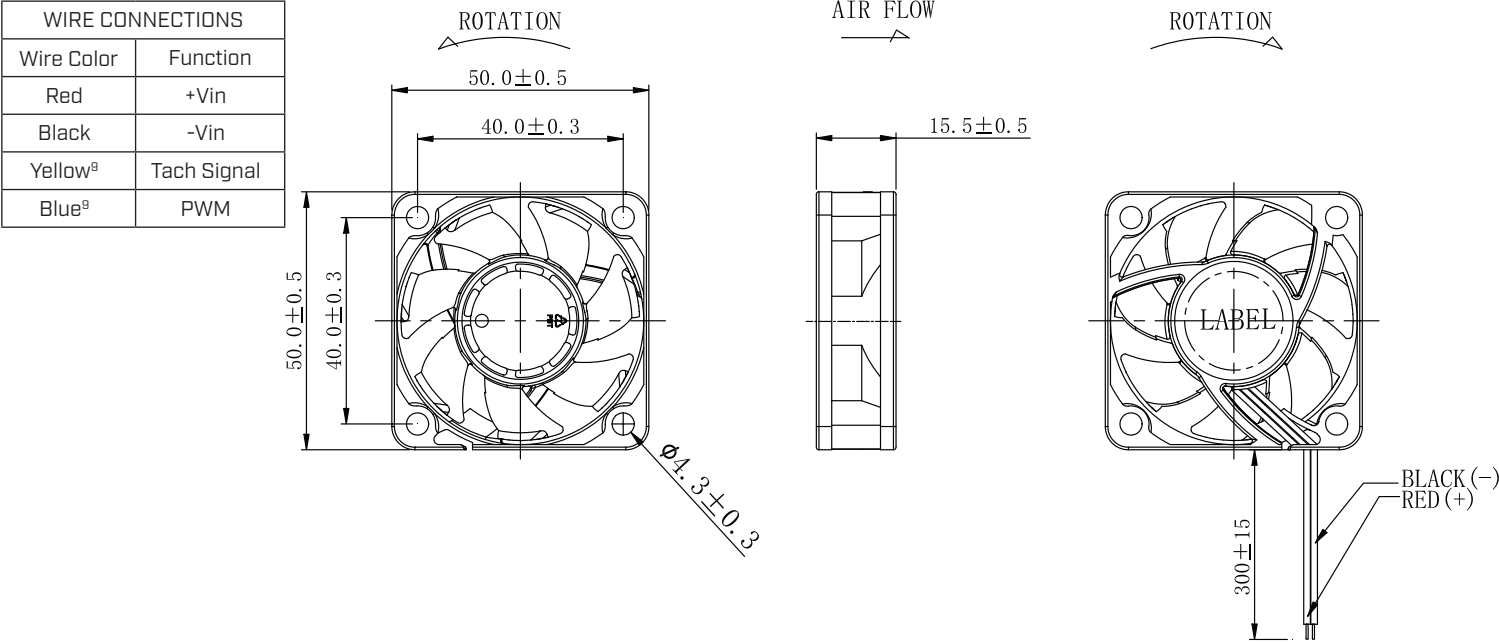
parameter	conditions/description	min	typ	max	units
motor	4 pole DC brushless				
bearing system	omniCOOL™				
direction of rotation	counter-clockwise viewed from front of fan blade				
dimensions	50 x 50 x 15.5				mm
material	PBT (UL94V-0)				
weight	CFM-5015CF-130-224		27.8		g
	CFM-5015CF-145-312		26.9		g
	CFM-5015CF-160-374		27.0		g

MECHANICAL DRAWING

units: mm

2 wire versions (+Vin & -Vin): UL 1007, 26 AWG
3 wire versions (+Vin, -Vin, & tach): UL 1007, 26 AWG
4 wire versions (+Vin, -Vin, tach, & PWM): UL 1061, 26 AWG

MOUNTING SCREW (Pan Head)			
Screw Type	Size	Standard	Torque
Machine Screw	M4	JIS B1111-1974	7.5 kgf-cm
Self-tapping Screw	M4.8	JIS B1122 Type 2	7.5 kgf-cm



APPLICATION NOTES

Polarity Protection

Able to withstand 10 minutes of reverse polarity connection between the positive and negative wires without causing damage.

Tachometer Signal [Yellow Wire]

The tachometer signal is for detecting the rotational speed of the fan motor. The output will be a square wave when fan is operating and V_{FG} or V_{CE} depending on the locked rotor position when fan motor is locked (See Figures 1~2 below).

Figure 1: Tachometer Output Circuit

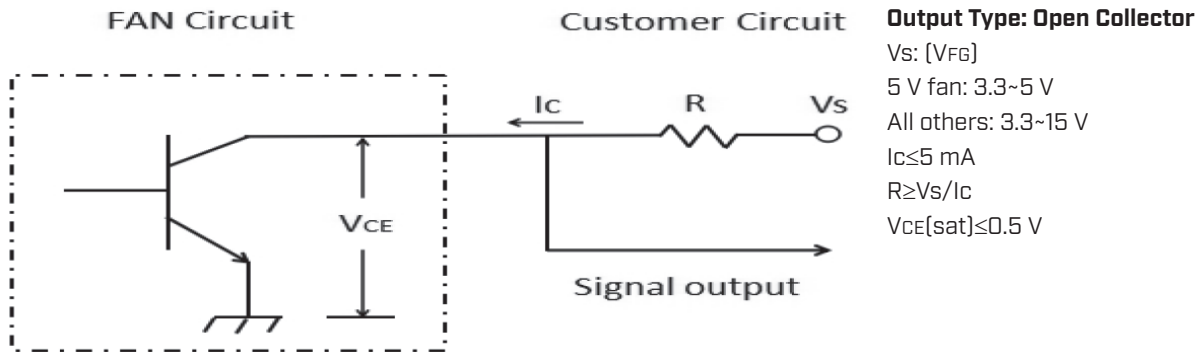
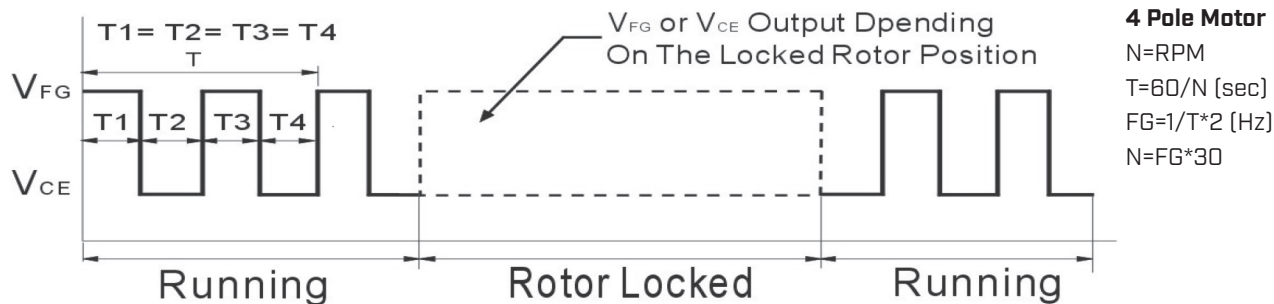


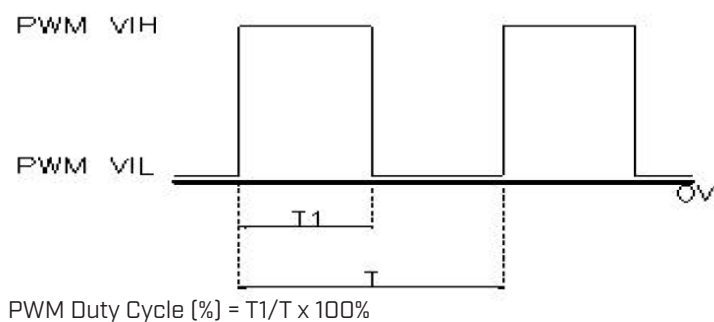
Figure 2: Tachometer Output Waveform



PWM Signal [Blue Wire]

This wire is for speed control of the fan motor using a PWM input signal from the customer circuit (See Figure 3 below).

Figure 3: PWM Input Signal



Model	PWM Frequency Range [kHz]	PWM VIH [V]	PWM VIL [V]
CFM-5015CF-130-224-22	0.3~45	1.7~6	0~0.7
CFM-5015CF-145-312-22	0.3~45	1.7~6	0~0.7
CFM-5015CF-160-374-22	0.2~50	2.5~10	0~0.8

REVISION HISTORY

rev.	description	date
1.0	initial release	10/18/2021
1.01	added PWM signal versions	05/19/2022
1.02	logo, datasheet style update	08/12/2022
1.03	updated PWM details	03/19/2024
1.04	CUI Devices rebranded to Same Sky	09/12/2024

The revision history provided is for informational purposes only and is believed to be accurate.



Same Sky offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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