

# SERIES: CFM-35CF | DESCRIPTION: DC AXIAL FAN

#### **FEATURES**

- omniCOOL™ bearing system
- 35 x 35 mm frame
- multiple speed options
- PWM/tachometer wires available



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MODEL		put Itage	input current¹	input power¹	rated speed <sup>1</sup>	airflow <sup>2</sup>	static pres- sure³	noise⁴
	rated (Vdc)	range (Vdc)	<b>max</b> [A]	max [W]	<b>typ</b> (RPM±15%)	(CFM)	(inch H <sub>2</sub> D)	<b>typ</b> (dBA)
CFM-3510CF-160-188	12	10.8~13.2	0.06	0.72	6,000	3.93	0.08	18.8
CFM-3510CF-170-222	12	10.8~13.2	0.08	0.96	7,000	4.59	0.10	22.3
CFM-3510CF-190-277	12	10.8~13.2	0.12	1.44	9,000	5.90	0.17	27.7

Notes: 1. At rated voltage, after 3 minutes.

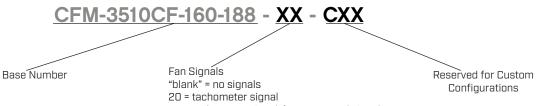
2. At rated voltage, room temperature, 65% humidity, 0 inch  $H_20$  static pressure. 3. At rated voltage, 0 CFM airflow.

At rated voltage, or CFM all how.
Measured in an anechoic chamber as per ISD3745/GB4214-84 at rated voltage, with background noise 20±2 dBA at 1 m from the fan intake.

All specifications are measured at 25°C, 65% relative humidity unless otherwise specified.

## PART NUMBER KEY

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22 = tachometer signal / PWM control signal

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## INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		10.8	12	13.2	Vdc
starting voltage			7		Vdc

## **PERFORMANCE<sup>6</sup>**

parameter	conditions/description	min	typ	max	units
rated speed	at rated voltage, 25°C, after 3 minutes	6,000		8,000	RPM
air flow	at 0 inch H <sub>2</sub> 0, see performance curves	3.93		5.90	CFM
static pressure	at O CFM, see performance curves	0.08		0.17	inch H <sub>2</sub> O
noise	at 1 m, rated speed	18.8		27.7	dBA

Note: 6. See Model section on page 1 for specific values.

## **PROTECTIONS / FEATURES<sup>7</sup>**

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: 7. 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	trength 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				

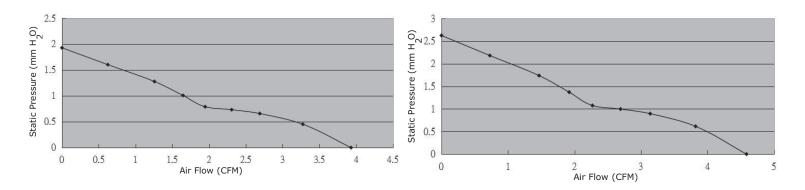
# **ENVIRONMENTAL**

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	%

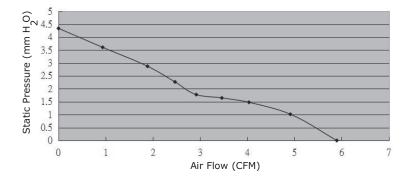
# **PERFORMANCE CURVES**

### CFM-3510CF-160-188

CFM-3510CF-170-222



#### CFM-3510CF-190-277



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# **MECHANICAL**

parameter	conditions/description	min	typ	max	units	
motor	4 pole DC brushless					
bearing system	omniCOOL™	omniCOOL™				
direction of rotation	counter-clockwise viewed from front of fan blade					
dimensions	35 x 35 x 10.3			mm		
material	PBT (UL94V-0)					
weight	CFM-3510CF-160-188 CFM-3510CF-170-222 CFM-3510CF-190-277		8.9 9.0 13.1		g g g	

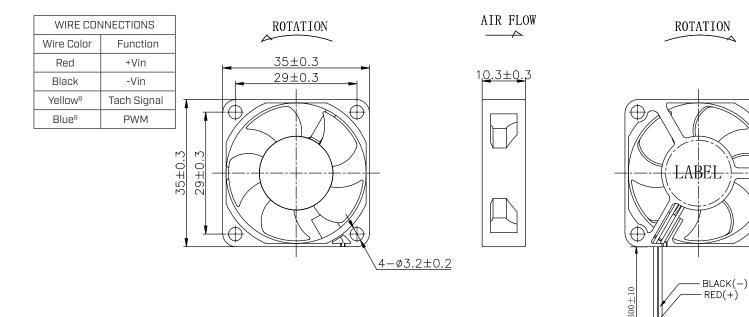
## **MECHANICAL DRAWING**

#### units: mm

2 wire versions (+Vin & -Vin): UL 1061, 26 AWG 3 wire versions (+Vin, -Vin, & tach): UL 1061, 26 AWG 4 wire versions (+Vin, -Vin, tach, & PWM): UL 1061, 28 AWG

MOUNTING SCREW (Pan Head)							
Screw Type Size Standard Torque							
Machine Screw M2.5 JIS B1111-1974 7.5 kgf-cm							

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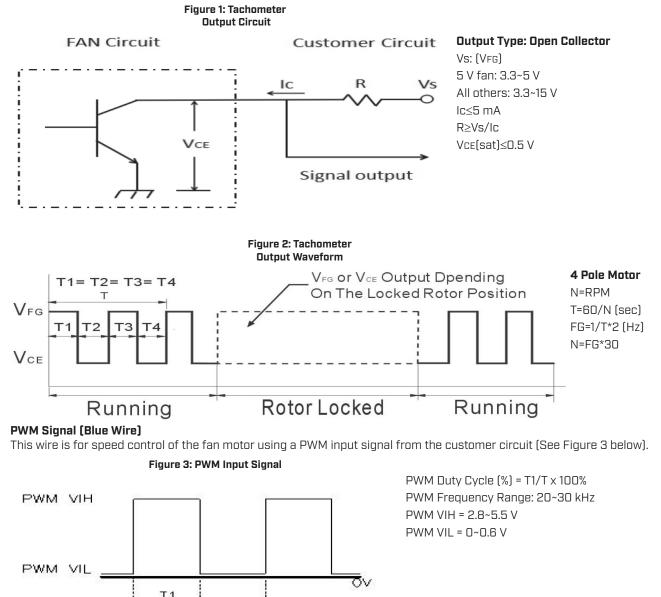
## **APPLICATION NOTES**

#### **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 VFG or VCE depending on the locked rotor position when fan motor is locked (See Figures 1~2 below).



## **REVISION HISTORY**

rev.	description	date
1.0	initial release	10/05/2021
1.01	added PWM signal versions	05/18/2022
1.02	logo, datasheet style update	08/12/2022

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

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



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