



# CFM260S SERIES 260 WATT OPEN FRAME AC-DC MODULES

## Features

- Universal Input Range 85~264Vac
- 220W with Natural Convection
- 260W with Fan-Cooled
- 2"x 4" Compact Size @CFM260SXXX
- No Load Input Power Consumption<0.2W
- High Efficiency up to 93.5% Typical
- 12V Fan Output
- Continuous Short Circuit Protection
- Over Temperature Protection
- Operating Altitude 5000m
- Meets EN55032 (Class B)
- IEC/EN/UL 62368-1 Approval
- Meets IEC/EN 60335-1
- Meets Class I



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT				VOLTAGE ACCURACY	RIPPLE & NOISE	VOLTAGE ADJ. RANGE	LINE REGULATION	LOAD REGULATION	%EFF. (Typ)
		NOTE1									
		With Fan	Without Fan								
	Cover	Base	Open	NOTE2	NOTE3	NOTE4	NOTE5				
CFM260S120	12 V	21.67A	18.34A	15.84A	11.67A	±1%	1%	11.4~12.6 V	±0.5%	±1%	92%
CFM260S240	24 V	10.83A	9.17A	7.92A	5.83A	±1%	1%	22.8~25.2 V	±0.5%	±1%	93.5%
CFM260S360	36 V	7.22A	6.11A	5.28A	3.89A	±1%	1%	34.2~37.8 V	±0.5%	±1%	93%
CFM260S480	48 V	5.42A	4.58A	3.96A	2.92A	±1%	1%	45.6~50.4 V	±0.5%	±1%	93.5%
<b>Fan Output Voltage</b>											
All	+12V	0.3A (NOTE 6)				---	---	---	---	---	---

Note:

1. Forced Air Convection with Fan. (Open Frame with 19CFM, Base & Case with 10 CFM)
2. Voltage Accuracy is Set at 60% Rated Load.
3. Add a 0.1uF Ceramic Capacitor and a 10uF E.L. Capacitor to Output for Ripple & Noise Measuring @20MHz BW
4. Line Regulation is Measured from High Line to Low Line with Rated Load.
5. Load Regulation is Measured from Full to 10% Rated.
6. Fan Output can only Operate Normal when the main Output is above 1A.

## PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type
CFM260	O	XXX	Y (Option)
CFM260	S: Single	120: 12VDC 240: 24VDC 360: 36VDC 480: 48VDC	None: Open Frame B: With Base C: With Cover

Part Number Example:

- CFM260S120:** Open Frame, 260W, Single 12Vdc Output
- CFM260S120B:** With Base, 260W, Single 12Vdc Output
- CFM260S120C:** With Case, 260W, Single 12Vdc Output



# CFM260S Series

## TECHNICAL SPECIFICATIONS

(All specifications are typical at nominal input, full load at 25°C unless otherwise noted.)

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input Voltage	Safety approvals only to the AC input	All	85		264	$V_{ac}$ $V_{dc}$
Operating Temperature	See Derating Curve	All	-30		80	°C
Storage Temperature		All	-40		85	°C
Operating Altitude	IEC/EN/UL 62368-1 Meets EN 60335-1	All			5000 5000	m

### INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		240	$V_{ac}$
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, $V_{in}=100V_{ac}$	All			3.5	A
Leakage Current		All			3.5	mA
Inrush Current	$V_{in}=240V_{ac}$ , Cold Start at 25°C.	All			150	A

### OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	$V_{in}$ =Nominal $V_{in}$ , $I_o=I_o$ max., Ambient Temperature=25°C.	CFM260S120 CFM260S240 CFM260S360 CFM260S480	11.88 23.76 35.64 47.52	12 24 36 48	12.12 24.24 36.36 48.48	$V_{dc}$
Operating Output Current Range	See Derating Curve	CFM260S120 CFM260S240 CFM260S360 CFM260S480			21.67 10.83 7.22 5.42	A
Holdup Time	$V_{in}=115V_{ac}$	All		16		ms
Output Voltage Regulation						
Load Regulation	10% Load to Full Load	All			±1.0	%
Line Regulation	$V_{in}$ =High Line to Low Line	All			±0.5	%
Over Voltage Protection	Clamp Output Voltage	CFM260S120 CFM260S240 CFM260S360 CFM260S480			16 35 50 63	$V_{dc}$
Output Ripple and Noise	1. Add a 0.1uF Ceramic Capacitor and a 10uF Aluminum Electrolytic Capacitor to Output. 2. Oscilloscope is 20MHz Band Width. 3. Ambient Temperature=25°C	CFM260S120 CFM260S240 CFM260S360 CFM260S480			120 240 360 480	mV
Load Capacitance	1. Ambient Temperature=25°C 2. Input Voltage is 115VAC and 230VAC 3. Output is max. Load	CFM260S120 CFM260S240 CFM260S360 CFM260S480			22000 10880 7220 3960	uF
Efficiency	1. Output is Rated Load 2. Ambient Temperature=25°C 3. Input Voltage is 230VAC	CFM260S120 CFM260S240 CFM260S360 CFM260S480		92.0 93.5 93.0 93.5		%



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## ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 minute	All			3000	V <sub>ac</sub>
Isolation Resistance	Input to Output	All	100			MΩ

## FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		100		KHz

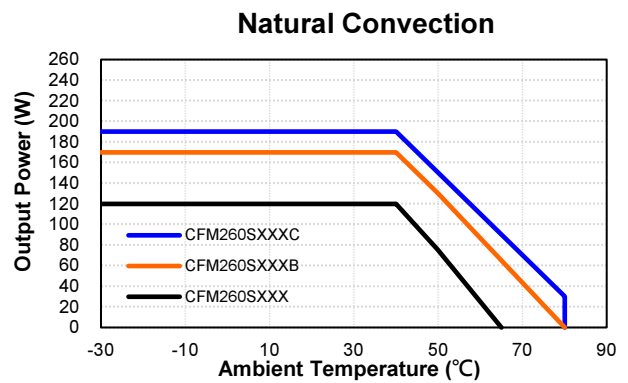
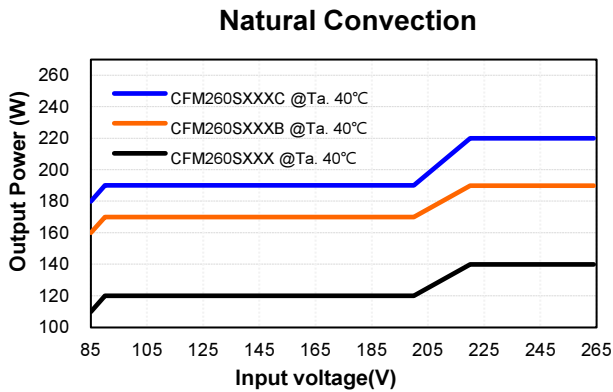
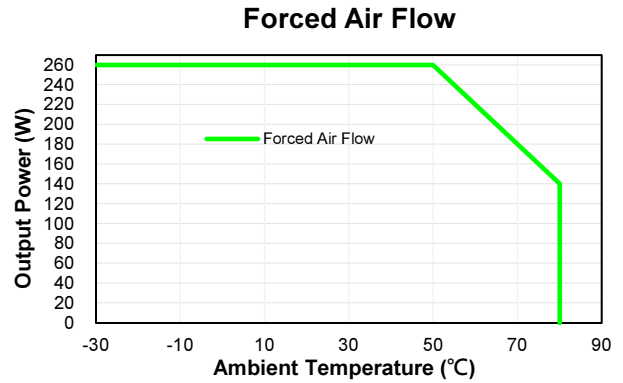
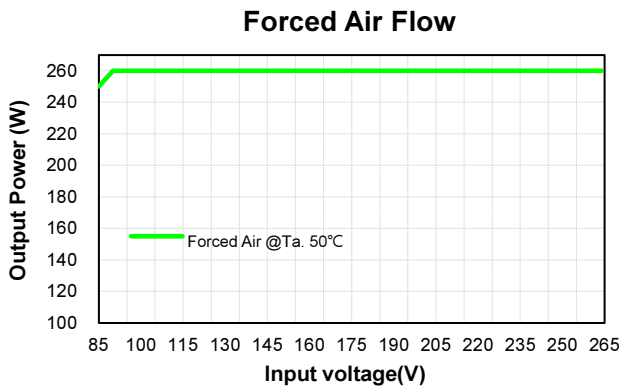
## GENERAL SPECIFICATIONS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I <sub>o</sub> =100%; T <sub>a</sub> =25°C per MIL-HDBK-217F	All	270			K hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5, Table 516.5-I 10ms, each axis 3 times(±X · ±Y · ±Z axis)	All		75		g
Vibration	Meets MIL-STD-810F Table 514.5C-VIII, 15~2000Hz, X · Y · Z axis, 1 hour (each axis), Total 3 hrs.	All		4		g
Weight	Open Frame Versions	All		245		grams
	Baseplate Versions			280		
	Covered versions			332		
Dimensions	Open Frame	All	4.000x2.000x1.441 Inches (101.60x50.8x36.60mm)			
	B (with Base)	All	4.598x2.000x1.520 Inches (116.80x50.8x38.60mm)			
	C (with Cover)	All	4.598x2.520x1.594 Inches (116.80x64.00x40.50mm)			
Safety	Class I, IEC/EN/UL62368-1					
EMC Emission	EN55032 Class B, 47 CFR FCC Part 15 Subpart B, Oct.2014 EN61000-3-2:2014, EN61000-3-3:2013, EN61000-6-3:2012, EN61000-6-4:2011, EN61204-3:2000				Class B	
Conducted Disturbance	EN55032, EN61204-3:2000, EN61000-6-3:2012, EN61000-6-4:2011, Class B, 47 CFR FCC Part 15 Subpart B				Class B	
Radiated Disturbance	EN55032, EN61204-3:2000, EN61000-6-3:2012, EN61000-6-4:2011, Class B, 47 CFR FCC Part 15 Subpart B				Class B	
Harmonic Current Emissions	EN61000-3-2:2014					
Voltage Fluctuations & Flicker	EN61000-3-3:2013					
EMC Immunity	EN55035, EN61204-3:2000, EN61000-6-1:2019, EN61000-6-2:2019					
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008, Air Discharge: ±8kV, Contact Discharge: ±4kV				Criterion A	
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2010				Criterion A	
Electrical Fast Transient (EFT)	IEC61000-4-4:2012, ±1kV, ±2kV				Criterion A	
Surge	IEC61000-4-5:2014, L-N: ±0.5kV, ±1kV, L-E(Ground): ±0.5kV, ±1kV, ±2kV				Criterion A	
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6:2013				Criterion A	
Power Frequency Magnetic Field	IEC 61000-4-8:2009				Criterion A	
Voltage Dips	IEC 61000-4-11:2004, Dip: 30% Reduction, Dip >95% Reduction				Criterion A	
Voltage Interruptions	IEC 61000-4-11:2004, >95% Reduction				Criterion B	
Application Note Link						<a href="#">CFM260S Series App Notes</a>

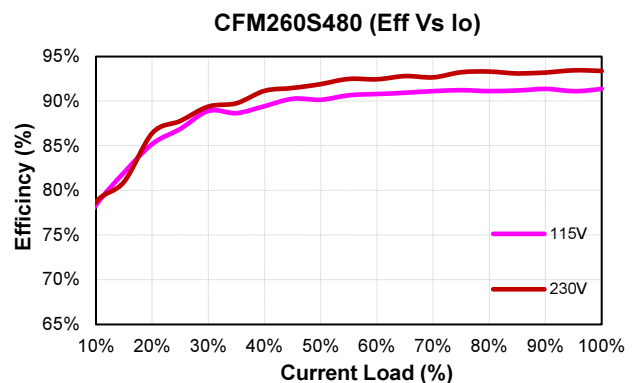
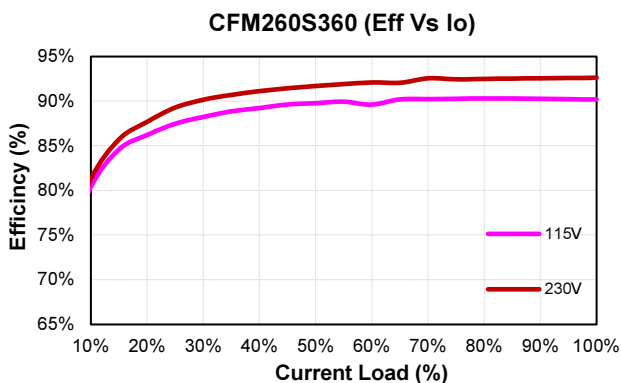
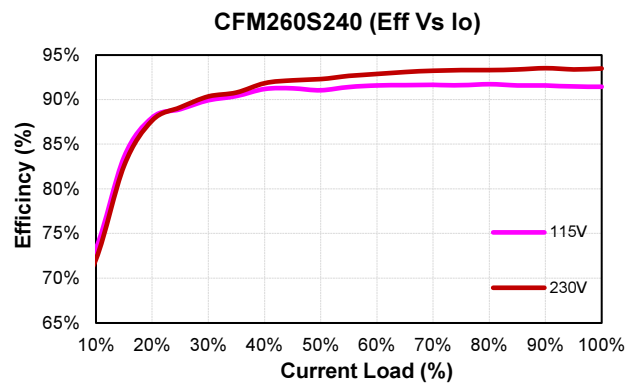
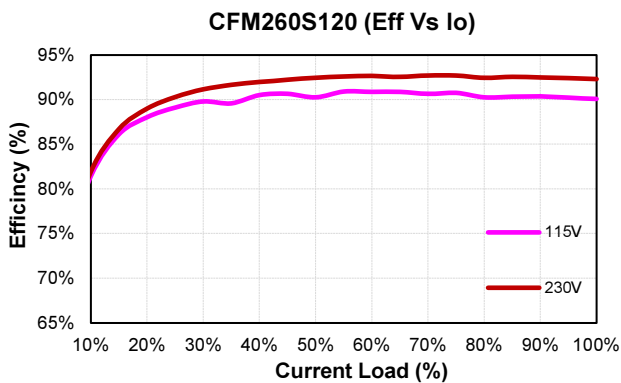


## CHARACTERISTIC CURVE

### Power Derating Curve



### Performance Data

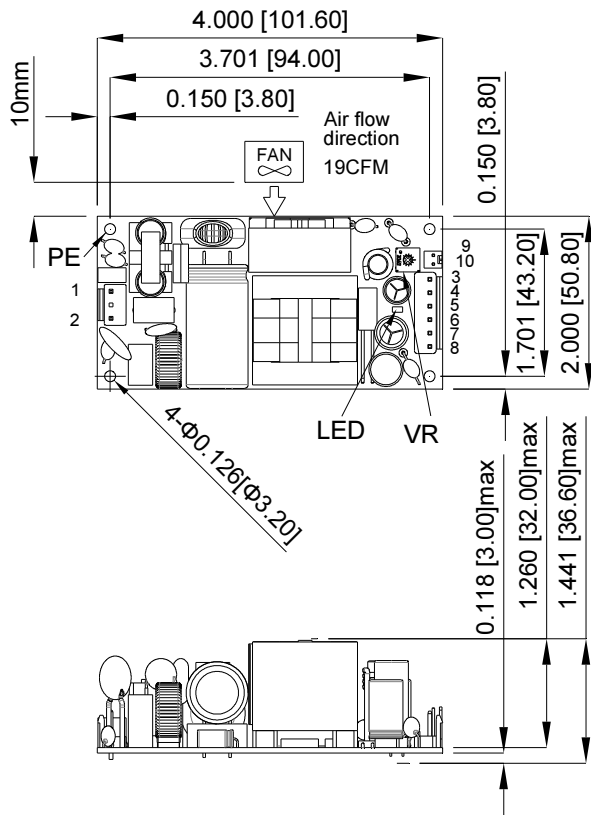




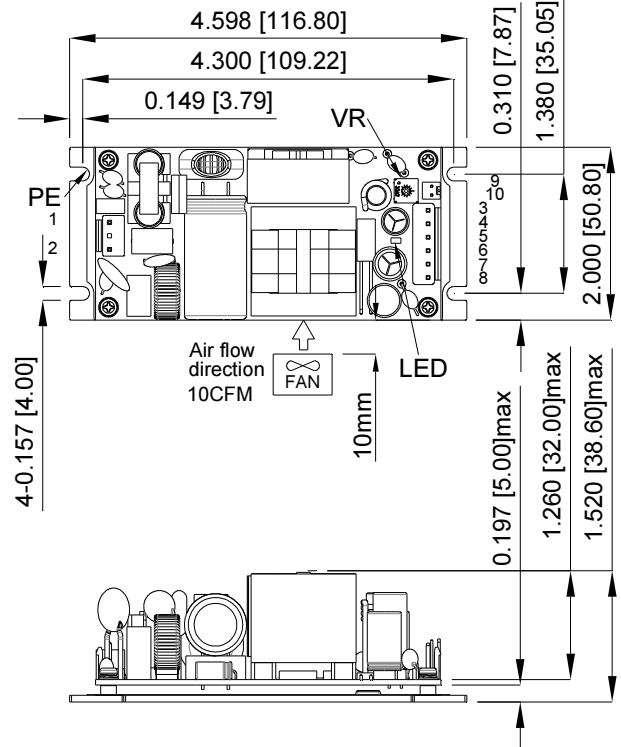
# CFM260S Series

## MECHANICAL SPECIFICATION

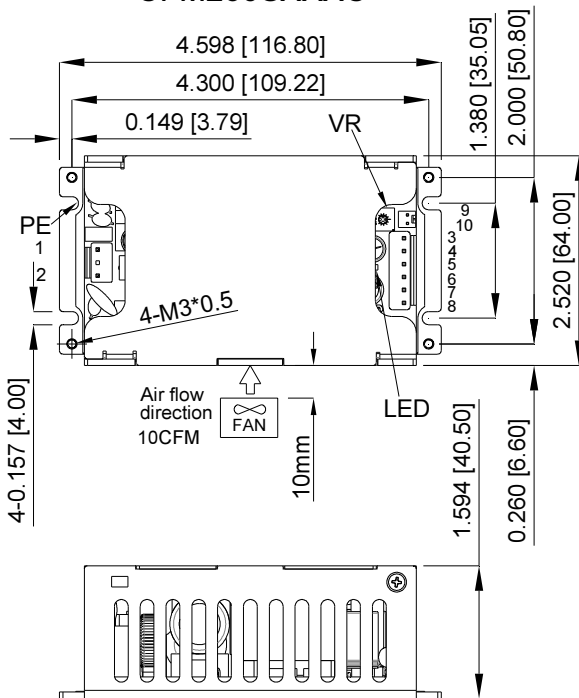
CFM260SXXX



CFM260SXXXB

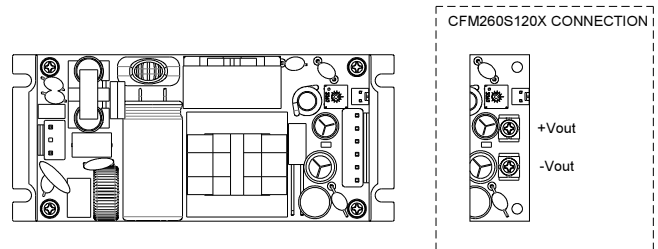


CFM260SXXXC



PIN CONNECTION					
Pin	Function	Pin	Function	Pin	Function
1	ACL	5	+Vout	9	+Fan Output
2	ACN	6	-Vout	10	-Fan Output
3	+Vout	7	-Vout		
4	+Vout	8	-Vout		

All Dimensions In Inches[mm]  
 Tolerance Inches: x.xxx = ± 0.02  
 Millimeters: x.xx = ± 0.5



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