



CFM130S SERIES 130 WATT OPEN FRAME AC-DC MODULES WITH PFC

Features

- Universal Input Range 80~264Vac
- High Efficiency up to 94%
- 2"x 3" Open Frame Compact Size
- Class I & Class II (NOTE8)
- 100W with Natural Convection
- 130W with Fan-Cooled
- No Load Input Power Consumption<150mW
- Approved Safety IEC/EN/UL 62368-1
- Meets IEC/EN/UL 60601-1 2 MOPP
- Meets IEC/EN60335-1
- Operating Altitude 5000m
- Continuous Short Circuit Protection
- Active PFC Function



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT		RIPPLE & NOISE NOTE2	VOLTAGE ACCURACY NOTE1	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	%EFF. (Typ) NOTE5
		NATURAL CONVECTION	FAN COOLED NOTE7					
CFM130S120	12 V	8.34 A	10.8 A	1%	±2%	±0.5%	±1%	93%
CFM130S240	24 V	4.2 A	5.4 A	1%	±2%	±0.5%	±1%	93%
CFM130S360	36 V	2.8 A	3.6 A	1%	±2%	±0.5%	±1%	94%
CFM130S480	48 V	2.1 A	2.7 A	1%	±2%	±0.5%	±1%	94%

Note:

1. Voltage accuracy is set at full load.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
3. Line regulation is measured from 100Vac to 240Vac with full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230 VAC and 75% full load at 25°C.
6. Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series or equivalent.
7. Requires 10CFM.
8. Conductive: Class I & Class II meets Class B Radiation: Class I meet Class B, Class II meet Class A.

PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type
CFM130	X	XXX	-X (Option)
CFM130	S : Single	120 : 12V 240 : 24V 360 : 36V 480 : 48V	Blank : Wafer B : Base Cooling C : Cover

Part Number Example:

CFM130S120-B: Open Frame, 130W, Single 12Vdc Output, Base Cooling



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		All	80		264	V _{ac}
Operating Temperature	See Derating Curve	All	-30		70	°C
Storage Temperature		All	-40		85	°C
Input/Output Isolation Voltage	1 minute	All	3000			V _{ac}
Operating Altitude		All			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		60	Hz
Maximum Input Current	100% Load, V _{in} =100Vac	All			1.8	A
Inrush Current	V _{in} =240V _{ac} , Cold start @25°C	All			100	A
Leakage Current (Touch)		All			100	uA
Under Voltage Protection		All	55	62	70	V

OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V _{in} =80V _{ac} ~264V _{ac} , I _o =Full load, Ambient temperature=25°C	CFM130S120	11.76	12	12.24	V _{dc}
		CFM130S240	23.52	24	24.48	
		CFM130S360	35.28	36	36.72	
		CFM130S480	47.04	48	48.96	
Operating Output Current Range	V _{in} =80V _{ac} ~264V _{ac} , See Derating Curve	CFM130S120			10.8	A
		CFM130S240			5.4	
		CFM130S360			3.6	
		CFM130S480			2.7	
Holdup Time	V _{in} =115V _{ac}	All		20		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	Auto recovery	CFM130S120		13.5		V _{dc}
		CFM130S240		30		
		CFM130S360		42		
		CFM130S480		54		
Over Current Protection	Auto recovery	All	115	130	145	%
Short Circuit Protection	Auto recovery	All				
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	CFM130S120			120	mV
		CFM130S240			240	
		CFM130S360			360	
		CFM130S480			480	
Load Capacitance	1. Input Voltage is 115V _{ac} and 230V _{ac} . 2. Output is max. Full Load 3. Ambient Temperature=25°C	CFM130S120			8400	uF
		CFM130S240			4200	
		CFM130S360			2720	
		CFM130S480			2040	
Efficiency	1. Input Voltage is 230V _{ac} 2. Output is 75% Full Load 3. Ambient Temperature=25°C	CFM130S120		93		%
		CFM130S240		93		
		CFM130S360		94		
		CFM130S480		94		



ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 minute (without dielectric breakdown)	All			3000	V _{ac}
Input to Earth (Ground)	1 minute (without dielectric breakdown)	All			1500	V _{ac}
Output to Earth (Ground)	1 minute (without dielectric breakdown)	All			500	V _{ac}
Isolation Resistance	Input to Output	All	100			MΩ

FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		105		kHz

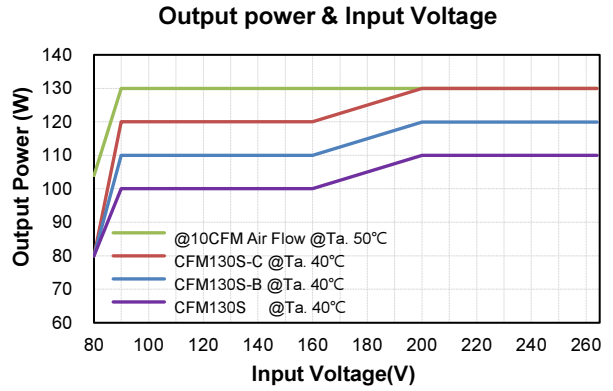
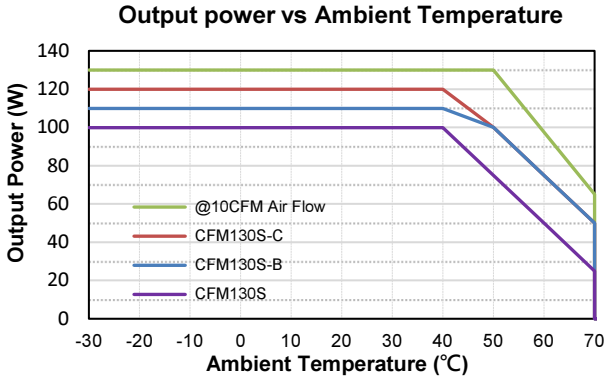
GENERAL SPECIFICATIONS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I _o =100%; T _a =25°C per MIL-HDBK-217F	All	400			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 hr (each axis),. total 3 hrs.	All		4		g
Weight		CFM130S CFM130S-B CFM130S-C		135 170 218		grams
Dimensions	Open Frame (Wafer)	All	3.000x2.000x1.201 Inches (76.20x50.80x30.50 mm)			
	B (Base Cooling)	All	3.598x2.000x1.299 Inches (91.40x50.80x33.00mm)			
	C (Cover)	All	3.598x2.520x1.358 Inches (91.40x64.00x34.50mm)			
Safety	Class I, Class II, IEC/EN/UL62368-1					Ed. 2.0
EMC Emission	EN 55032: 2015+A1: 2016, 47 CFR FCC Part 15 Subpart B, EN 61204-3: 2000, EN 6100-6-3: 2007+A1: 2011+AC: 2012, EN 6100-6-4: 2007+A1: 2011					Class B
Conducted Disturbance	EN 55032, 47 CFR FCC Part 15 (Class I & Class II meets Class B)					Class B
Radiated Disturbance	EN 55032, 47 CFR FCC Part 15 (Class I Meet Class B; Class II Meet Class A)					Class B
Harmonic Current Emissions	EN 61000-3-2:2014					Class A
Voltage Fluctuations & Flicker	EN 61000-3-3:2013					
EMC Immunity	EN 55024: 2010+A1: 2015, EN 61000-6-1: 2007, EN 61000-6-2: 2005+AC, EN 61204-3: 2000					
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						CFM130S Series App Notes



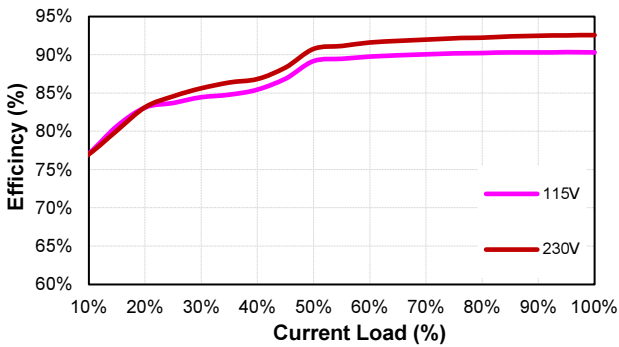
CHARACTERISTIC CURVE

Power Derating Curve

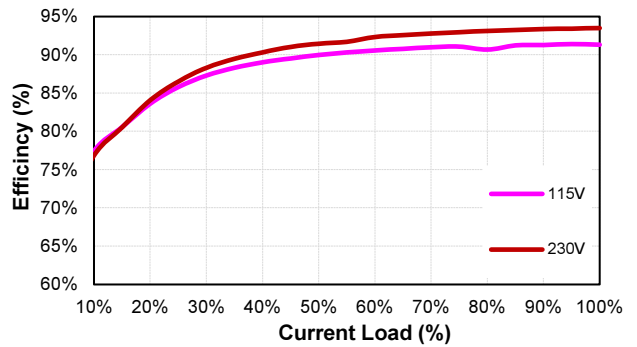


Performance Data

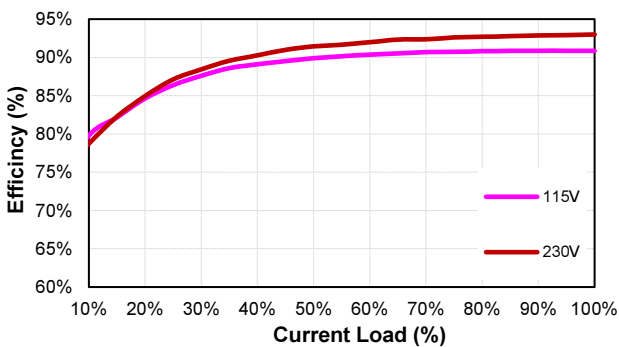
CFM130S120 (Eff Vs Io)



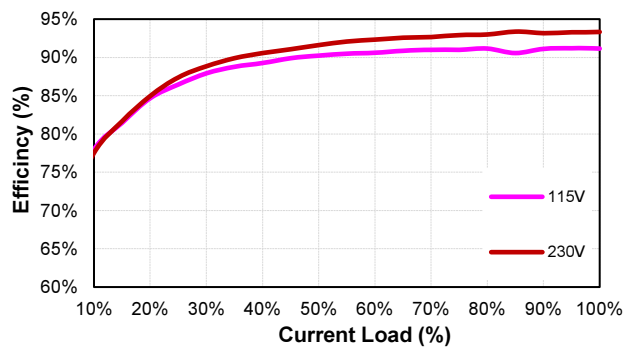
CFM130S240 (Eff Vs Io)



CFM130S360 (Eff Vs Io)



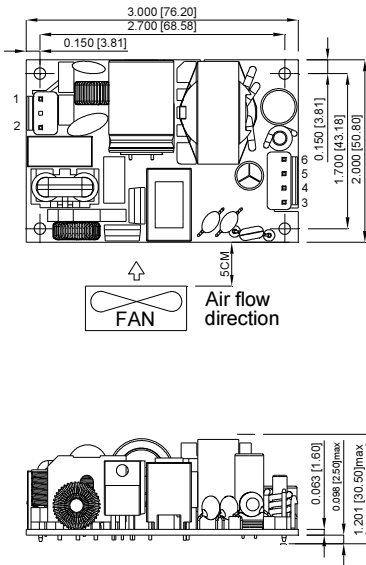
CFM130S480 (Eff Vs Io)



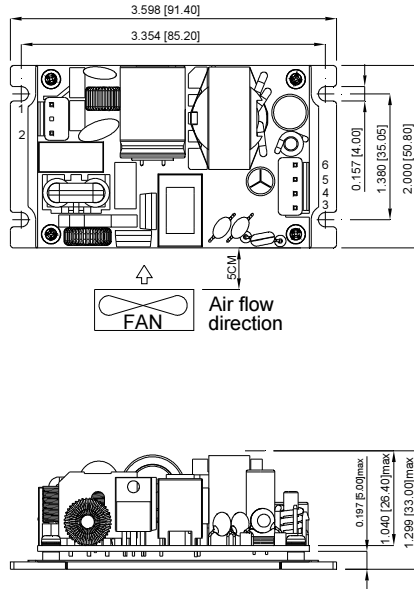


MECHANICAL SPECIFICATION

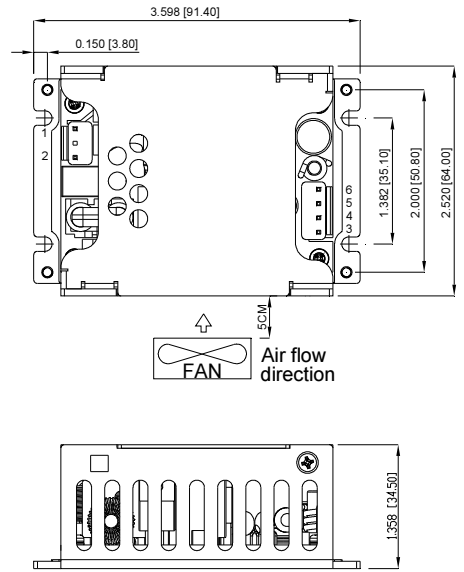
CFM130S



CFM130S-B



CFM130S-C



PIN CONNECTION	
Pin	Function
1	ACL
2	ACN
3	-Vout
4	-Vout
5	+Vout
6	+Vout

All Dimensions In Inches[mm]
 Tolerance Inches: x.xxx = ± 0.02, x.xxx = ± 0.010
 Millimeters: x.xx = ± 0.5, x.xx = ± 0.025

Specifications are subject to change without notice, E&OE. ALL PSU Terms & Conditions apply.

**ALL PSU Ltd, Unit D6 Laser Quay, Culpeper Close, Medway City Estate,
 Rochester, Kent, ME2 4HU, Tel : 01634 725527, Fax : 01634 739111
 Email: sales@allpsu.co.uk, Web: www.allpsu.co.uk**