



# LFM550S SERIES 550 WATT BASEPLATE COOLED AC-DC MODULES WITH PFC

## Features

- Universal Input Range 85~264Vac
- High Efficiency up to 96%
- 25.4mm Low Profile Package
- No Load Input Power Consumption<0.15W
- Full Load with Baseplate Cooled and No Fan Required
- High Power Density 36.6W/Inches<sup>3</sup>
- Active PFC Function
- Over Temperature Protection
- Continuous Short Circuit Protection
- Operating Altitude OVC II 5000m & OVC III 2000m



MODEL NUMBER	OUTPUT VOLTAGE	With Fan NOTE7	OUTPUT CURRENT		RIPPLE & NOISE NOTE1	VOLTAGE ACCURACY NOTE2	LINE Reg. NOTE3	LOAD Reg. NOTE4	%EFF. (Typ) NOTE5
			Without Conduction Colling C	With Conduction Colling					
LFM550S120	12 V	45.83A	29.16 A	37.5 A	120 mV	±1%	±0.3%	±0.5%	93%
LFM550S150	15 V	36.66A	23.33 A	30 A	150 mV	±1%	±0.3%	±0.5%	94%
LFM550S240	24 V	22.91A	14.58 A	18.75 A	240 mV	±1%	±0.3%	±0.5%	94%
LFM550S280	28 V	19.64A	4.29 A	16.07 A	280 mV	±1%	±0.3%	±0.5%	95%
LFM550S300	30 V	18.33A	12.5 A	15 A	300 mV	±1%	±0.3%	±0.5%	95%
LFM550S360	36 V	15.27A	9.72 A	12.5 A	360 mV	±1%	±0.3%	±0.5%	95%
LFM550S480	48 V	11.45A	7.29 A	9.37 A	480 mV	±1%	±0.3%	±0.5%	96%
LFM550S540	54 V	10.18A	6.48 A	8.34 A	540 mV	±1%	±0.3%	±0.5%	96%

Note:

1. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
2. Voltage accuracy is set at full load.
3. Line regulation is measured from 100V<sub>ac</sub> to 240Vac with full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230V<sub>ac</sub> and full load at 25°C.
6. Power Dissipation (Pd); Pd=Pi-Po=Po(1-η).
7. Forced air convection with 14CFM above 115Vac.
8. Conduction Convection with External Baseplate,27.9 by 27.9 cm with min. 0.3 cm thick.

## PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type
LFM550	X	XXX	X.
LFM550	S : Single	120 : 12V 150 : 15V 240 : 24V 280 : 28V 300 : 30V 360 : 36V 480 : 48V 540 : 54V	C : With Cover

Part Number Example:

**LFM550S120C:** With Cover, 550W, Single 12Vdc Output



# LFM550 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		All	85		264	V <sub>ac</sub>
Input Voltage		All	120		370	V <sub>dc</sub>
Operating Temperature	See Derating Curve	All	-40		80	°C
Storage Temperature		All	-40		85	°C
Operating Altitude	OVC II 5000m & OVC III 2000m	All			5000	m

### INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		240	V <sub>ac</sub>
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, V <sub>in</sub> =100V <sub>ac</sub>	All			6	A
Leakage Current (Earth)		All			300	uA
Leakage Current (Touch)		All			100	uA
Inrush Current	V <sub>in</sub> =240V <sub>ac</sub> @25°C	All			40	A
Under Voltage Protection		All	65	70	75	V <sub>ac</sub>
Power Factor	230V <sub>ac</sub> @ Full load	All	0.9			

### OUTPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V <sub>in</sub> =Nominal V <sub>in</sub> , I <sub>o</sub> =I <sub>o max.</sub> , T <sub>c</sub> =25°C	LFM550S120	11.88	12	12.12	V <sub>dc</sub>
		LFM550S150	14.85	15	15.15	
		LFM550S240	23.76	24	24.24	
		LFM550S280	27.72	28	28.28	
		LFM550S300	27.7	30	30.3	
		LFM550S360	35.64	36	36.36	
		LFM550S480	47.52	48	48.48	
		LFM550S540	53.46	54	54.54	
Operating Output Current Range	V <sub>in</sub> =90V <sub>ac</sub> ~264V <sub>ac</sub> , See Derating Curve	LFM550S120	0		45.83	A
		LFM550S150	0		36.66	
		LFM550S240	0		22.91	
		LFM550S280	0		19.64	
		LFM550S300	0		18.33	
		LFM550S360	0		15.27	
		LFM550S480	0		11.45	
		LFM550S540	0		10.18	
Holdup Time	V <sub>in</sub> =115V <sub>ac</sub>	All	10	12		ms
Output Voltage Regulation						
Load Regulation	10% Load to full load	All			±0.5	%
Line Regulation	V <sub>in</sub> =High line to low line	All			±0.3	%
Output Voltage Adjustment	P <sub>o</sub> ≤ max rated power, I <sub>o</sub> ≤ I <sub>o max</sub>	All	-5		+5	%



## LFM550 Series

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Over Voltage Protection	Latch off	LFM550S120			16	V <sub>dc</sub>
		LFM550S150			20	
		LFM550S240			32	
		LFM550S280			35	
		LFM550S300			35	
		LFM550S360			45	
		LFM550S480			55	
		LFM550S540			60	
Over Current Protection	Auto recovery (Output is rated load)	All	110	120	140	%
Short Circuit Protection	Auto recovery	All				
Over Temperature 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	LFM550S120			120	mV
		LFM550S150			150	
		LFM550S240			240	
		LFM550S280			280	
		LFM550S300			300	
		LFM550S360			360	
		LFM550S480			480	
		LFM550S540			540	
Load Capacitance	1. V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> 2. Output is max. Load 3. Ambient temperature=25°C	LFM550S120			37500	uF
		LFM550S150			30000	
		LFM550S240			18750	
		LFM550S280			16070	
		LFM550S300			15000	
		LFM550S360			12500	
		LFM550S480			9370	
		LFM550S540			8340	
Efficiency	1. V <sub>in</sub> =230V <sub>ac</sub> 2. Output is rated load 3. Ambient temperature=25°C	LFM550S120		93		%
		LFM550S150		94		
		LFM550S240		94		
		LFM550S280		95		
		LFM550S300		95		
		LFM550S360		95		
		LFM550S480		96		
		LFM550S540		96		

### ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute (without dielectric breakdown)	All			4000	V <sub>ac</sub>
Input to Earth (Ground)	1 Minute (without dielectric breakdown)	All			2000	V <sub>ac</sub>
Output to Earth (Ground)	1 Minute (without dielectric breakdown)	All			360	V <sub>ac</sub>
Isolation Resistance	Input to output	All	100			MΩ



# LFM550 Series

## FEATURE CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		T.B.D		kHz

## GENERAL SPECIFICATIONS

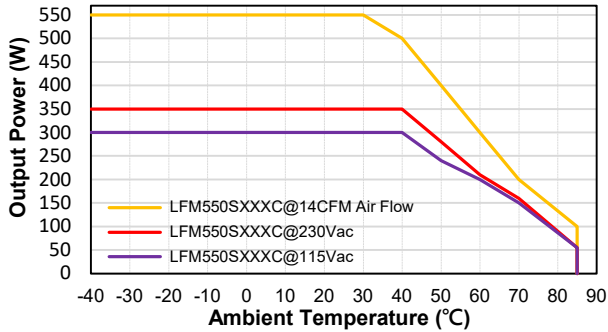
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	$I_o=100\%$ ; $T_a=25^\circ\text{C}$ per MIL-HDBK-217F	All	T.B.D			k hours
Life Time	@75% Load, $40^\circ\text{C}$		T.B.D			k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meet MIL-STD-810F Table 516.5, Table 516.5-I 10ms, each axis 3 times ( $\pm X$ · $\pm Y$ · $\pm Z$ axis)	All		75		g
Vibration	Meet MIL-STD-810F Table 514.5C-VIII, 15~2000Hz, X · Y · Z axis, 1 hour (each axis), Total 3 hrs.	All		4		g
Weight		-C		T.B.D		grams
Dimensions		-C	3.30x5.09x1.00 Inches (83.9x129.4x25.4 mm)			
Safety	Class I, IEC/EN/UL62368-1					Ed. 3.0
EMC Emission	EN55032 Class B, 47 CFR FCC Part 15 Subpart B, Oct.2014 EN61000-3-2:2019, EN61000-3-3:2013, EN61000-6-3:2012, EN61000-6-4:2019, EN61204-3:2018					Class B
Conducted Disturbance	EN 55032, 47 CFR FCC Part 15					Class B
Radiated Disturbance	EN 55032, 47 CFR FCC Part 15					Class B
Harmonic Current Emissions	EN 61000-3-2: 2019					Class A
Voltage Fluctuations & Flicker	EN 61000-3-3:2013					
EMC Immunity	EN55035, EN61204-3:2018, EN61000-6-1:2019, EN61000-6-2:2019					
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008 Air Discharge: $\pm 8\text{kV}$ , Contact Discharge: $\pm 4\text{kV}$					Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2020					Criterion A
Electrical Fast Transient (EFT)	IEC61000-4-4:2012, $\pm 1\text{kV}$ , $\pm 2\text{kV}$					Criterion A
Surge	IEC61000-4-5:2014, L-N: $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , L-E (Ground): $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , $\pm 2\text{kV}$					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 61000-4-11:2020 Dip: 30% 10ms, Dip: 60% 100ms, Dip >95% 5000ms					Criterion A
Voltage Interruptions	IEC 61000-4-11:2020, >95% 5000ms					Criterion B
Application Note Link						<a href="#">LFM550 Series App Notes</a>



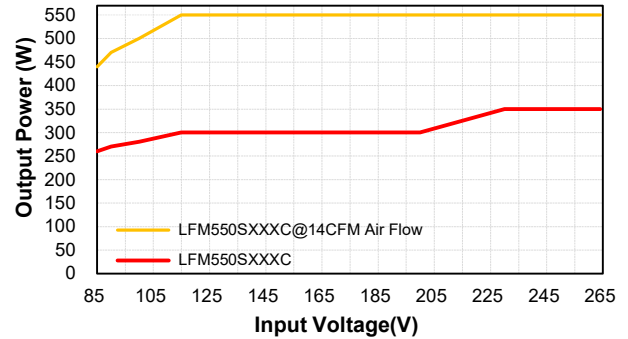
## CHARACTERISTIC CURVE

### Power Derating Curve(T.B.D)

Output power vs Ambient Temperature

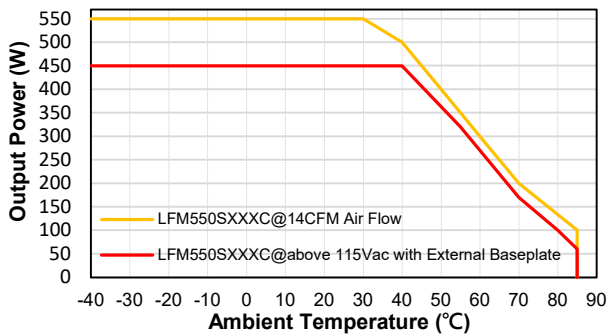


Output power & Input Voltage

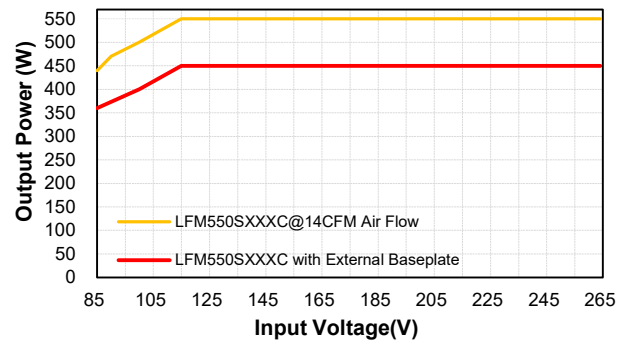


### Conduction Convection with External Baseplate (T.B.D)

Output power vs Ambient Temperature



Output power & Input Voltage





# LFM550S Series

## MECHANICAL SPECIFICATION

### LFM550SXXXC

