LFM750M SERIES
750 WATT MEDICAL
AC-DC POWER SUPPLY WITH PFC

Features

- Universal Input Range 85~264Vac
- Universal Input Range 120~368Vdc
- Accepts AC or DC input
- High Efficiency up to 94%
- Class I & Clss II
- 25.4mm Low Profile Package
- No Load Input Power Consumption<0.6W
- No Load Input Power Consumption<0.7W for 54V
- Approval Safety IEC/EN/UL 60601-1 2 MOPP
- Continuous Short Circuit Protection
- Over Voltage Protection
- Over Temperature Protection
- High Power Density 37.43 W/Inches^3
- Active PFC Function



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT				RIPPLE & NOISE NOTE1	VOLTAGE ACCURACY NOTE2	VOLTAGE ADJ. RANGE	LINE REGULATION NOTE3	LOAD REGULATION NOTE4	% EFF. (Typ.) NOTE5
		With Fan @230Vac	Without Fan @230Vac	With Conduction Cooling							
				Fan	Without Fan @230Vac						
		NOTE6		NOTE6&7	NOTE7						
LFM750M120C	12 V	58.34 A	26.66 A	62.50 A	50.00 A	150 mV	±1%	11.4-12.6 V	±0.5%	±1%	91.5%
LFM750M150C	15 V	46.67 A	21.33 A	50.00 A	40.00 A	150 mV	±1%	14.25-15.75 V	±0.5%	±1%	92.0%
LFM750M240C	24 V	29.17 A	13.33 A	31.25 A	25.00 A	240 mV	±1%	22.8-25.2 V	±0.5%	±1%	92.5%
LFM750M280C	28 V	25.00 A	11.42 A	26.78 A	21.43 A	280 mV	±1%	28-29.4 V	±0.5%	±1%	92.5%
LFM750M300C	30 V	23.33 A	10.66 A	25.00 A	20.00 A	300 mV	±1%	28.5-31.5 V	±0.5%	±1%	93.0%
LFM750M360C	36 V	19.44 A	8.88 A	20.83 A	16.66 A	360 mV	±1%	34.2-37.8 V	±0.5%	±1%	93.0%
LFM750M480C	48 V	14.58 A	6.66 A	15.62 A	12.50 A	480 mV	±1%	45.6-50.4 V	±0.5%	±1%	93.5%
LFM750M540C	54 V	12.96 A	5.92 A	13.88 A	11.11 A	540 mV	±1%	51.3-55.0 V	±0.5%	±1%	94.0%

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 100Vac to 240Vac with full load.
4. Load regulation is measured from 10% to 100% full load.
5. Typical efficiency at 230 Vac and full load at 25℃.
6. Forced air convection with 22 CFM above.
7. With additional cooling conduction plate. 43.18 cm by 43.18cm with min. 0.3cm thick.

PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Type	Mounting Inserts
LFM750	O	XXX	X	-YZ
LFM750	M：Medical	120：12V 150：15V 240：24V 280：28V 300：30V 360：36V 480：48V 540：54V	C：With Cover	Blank：Through Hole C0：Threaded Hole

Part Number Example:

LFM750M120C: With Cover 750W, Medical 12V_{dc} Output, Through Hole

LFM750M120C-C0: With Cover 750W, Medical 12V_{dc} Output, Threaded Hole

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	85 120		264 368	V_{ac} V_{dc}
Operating Temperature	**See derating curve**	All	-40		80	°C
Operating Case Temperature	At the center of base plate (T_c = Case temperature)	All	-40		90	℃
Storage Temperature		All	-40		85	°C
Operating Altitude		All			5000	m

INPUT CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100 134		240 334	V_{ac} V_{dc}
Input Frequency Range		All	47		63	Hz
Maximum Input Current	100% Load, V_{in}=100Vac	All			10	A
Leakage Current	Contact leakage current Earth leakage current	All			100 300	uA
Inrush Current	V_{in}=240V_{ac}, Cold start at 25℃	All		30		A
Under Voltage Protection		All	65		75	V_{ac}
Power Factor	230V_{ac} @ Full load	All		0.98		

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., T_c=25℃	LFM750M120	11.88	12	12.12	V_{dc}
		LFM750M150	14.85	15	15.15	
		LFM750M240	23.76	24	24.24	
		LFM750M280	28	28	28.28	
		LFM750M300	29.7	30	30.3	
		LFM750M360	35.64	36	36.36	
		LFM750M480	47.52	48	48.48	
		LFM750M540	53.46	54	54.54	
Operating Output Current Range	V_{in}=85V_{ac}~264V_{ac}, **See derating curve**	LFM750M120			62.5	A
		LFM750M150			50	
		LFM750M240			31.25	
		LFM750M280			26.78	
		LFM750M300			25	
		LFM750M360			20.83	
		LFM750M480			15.62	
		LFM750M540			13.88	
Holdup Time	V_{in}=115V_{ac}	All	10			ms
Output Voltage Regulation						
Load Regulation	10% Load to full Load	All			±1	%
Line Regulation	V_{in}=High line to low line	All			±0.5	%
Output Voltage adjustment	P_o≦max. rated power, I_o≦I_o max.	LFM750M280	0		+5	%
	P_o≦max. rated power, I_o≦I_o max.	LFM750M540	-5		+2	
	P_o≦max. rated power, I_o≦I_o max.	Others	-5		+5	

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Over Voltage Protection	Latch off (AC recycle to reset)	LFM750M120		16		V_{dc}
		LFM750M150		25		
		LFM750M240		35		
		LFM750M280		35		
		LFM750M300		35		
		LFM750M360		50		
		LFM750M480		60		
		LFM750M540		63		
Over Current Protection	Auto recovery (output is rated load)	All	120		220	%
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℃	LFM750M120			150	mV
		LFM750M150			150	
		LFM750M240			240	
		LFM750M280			280	
		LFM750M300			300	
		LFM750M360			360	
		LFM750M480			480	
		LFM750M540			540	
Efficiency	1. Input voltage is $230V_{ac}$ 2. Output is rated load 3. Ambient temperature=25℃	LFM750M120		91.5		%
		LFM750M150		92		
		LFM750M240		92.5		
		LFM750M280		92.5		
		LFM750M300		93		
		LFM750M360		93		
		LFM750M480		93.5		
		LFM750M540		94		
Load Capacitance	1. Vin=115Vac and $230V_{ac}$ 2. Output is max. load 3. Ambient temperature=25℃	LFM750M120			46800	uF
		LFM750M150			37500	
		LFM750M240			23400	
		LFM750M280			20000	
		LFM750M300			18750	
		LFM750M360			15600	
		LFM750M480			8100	
		LFM750M540			10400	

ISOLATION CHARACTERISTICS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute (without dielectric breakdown)	All			4250	V_{ac}
Input to Earth (Ground)	1 Minute (without dielectric breakdown)	All			2000	V_{ac}
Output to Earth (Ground)	1 Minute (without dielectric breakdown)	All			2000	V_{ac}
Isolation Resistance	Input to output	All	100			MΩ

FEATURE CHARACTERISTICS

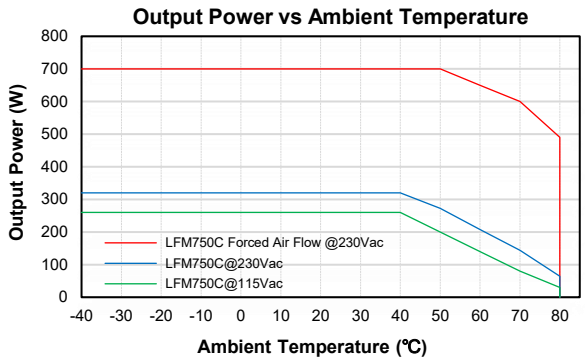
PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		78		kHz

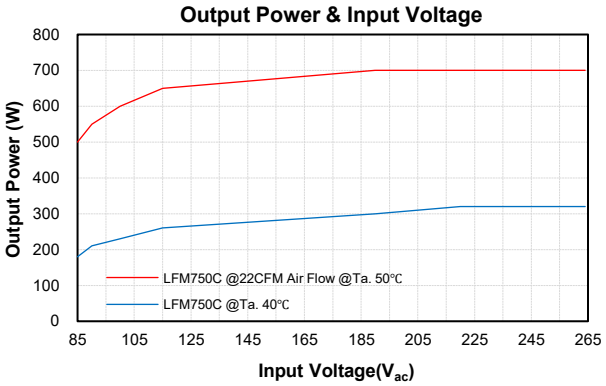
GENERAL SPECIFICATIONS

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	I_o=100%; T_a=25℃ per MIL-HDBK-217F I_o=100%; T_a=25℃ per Telcordia SR332	All	280 940			K hours
Life Time	@75% Load, 40℃ With base plate	All	74			k hours
Humidity	Non-condensing	All			95	% RH
Shock	Meet MIL-STD-810F Table 516.5,Table 516.5-1 10ms, each axis 3 times(±X、±Y、±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		All		600		g
Dimensions		All	6.09x3.29x1.00 Inches (154.8x83.5x25.4 mm) mm)			
Safety	Class I, Class II, ANSI/AAMI ES 60601-1, IEC 60601-1, EN 60601-1					Ed. 3.2
	Class I, Class II, IEC/EN/UL 62368-1					Ed. 3.0
EMC Emission	EN 55011, Class B, IEC/EN 61000-3-2, EN 61000-3-3, 47 CFR FCC Part 18					
	EN 55032 (Class B), EN 61000-6-3, EN 61000-6-4, EN 61204-3, EN 61000-3-2, EN 61000-3-3, 47 CFR FCC Part 15 Subpart B					
Conducted Disturbance	EN 55011, EN 55032, 47 CFR FCC Part 18 & Part 15					Class B
Radiated Disturbance	EN 55011, EN 55032, 47 CFR FCC Part 18 & Part 15					Class B
Harmonic Current Emissions	IEC/EN 61000-3-2					Class A, C
Voltage Fluctuations & Flicker	EN 61000-3-3					Criterion A
EMC Immunity	EN 60601-1-2, IEC/EN 61000-4-2, 3, 4, 5, 6, 8, 11					Ed 4.1
	EN 55035, EN 61000-6-1, EN 61000-6-2, EN 61204-3					
Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 4: Air Discharge: ±15kV, Contact Discharge: ±8kV					Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC/EN 61000-4-3, Level 3: 80 to 1000MHz, 3V/m					Criterion A
Electrical Fast Transient (EFT)	EN 61000-4-4, Level 3: ±2kV					Criterion A
Surge	EN 61000-4-5, Level 4: L-N, ±2kV, Level 4: L-E (Ground), ±4kV					Criterion A
Conducted Disturbances, Induced by RF Fields	IEC/EN 61000-4-6, Level 2					Criterion A
Power Frequency Magnetic Field	EN 61000-4-8, Level 4					Criterion A
Voltage Dips	IEC/EN 61000-4-11, DIP: 70% Residual					Criterion A
Voltage Interruptions	IEC/EN 61000-4-11, <5% Residual					Criterion B
Application Note Link	LFM750M Series App Notes					

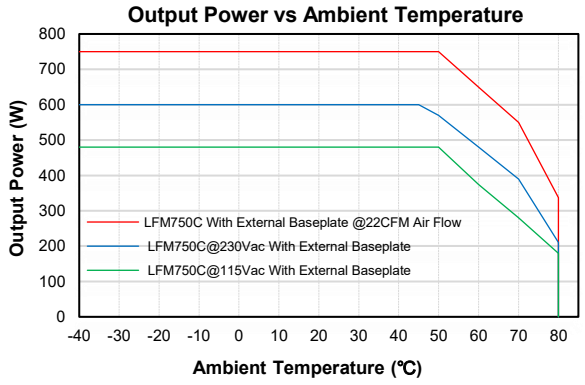
CHARACTERISTIC CURVE

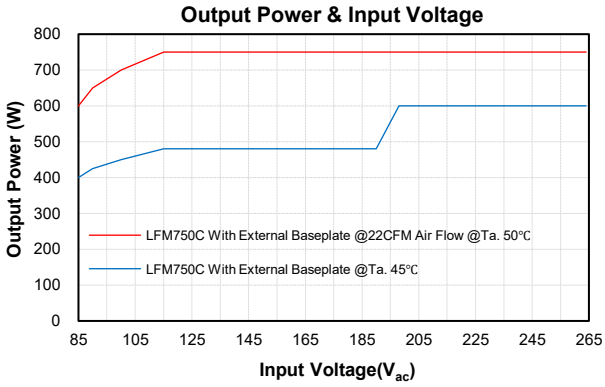
Power Derating Curve

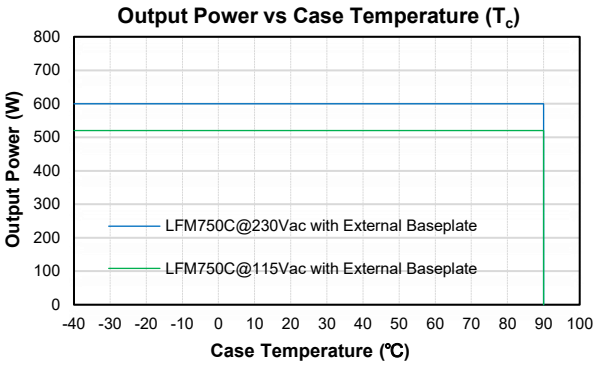




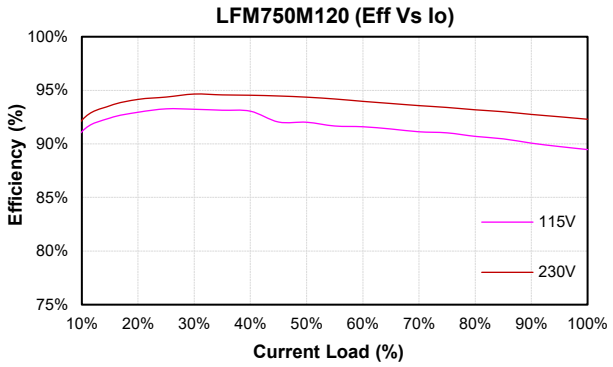
Conduction Convection with External Baseplate (4.18cmx43.18cmx0.3cm)

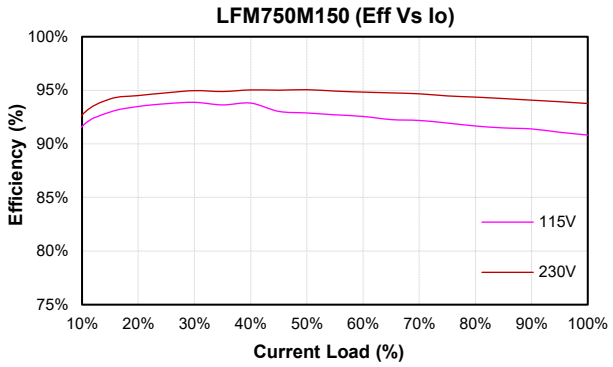


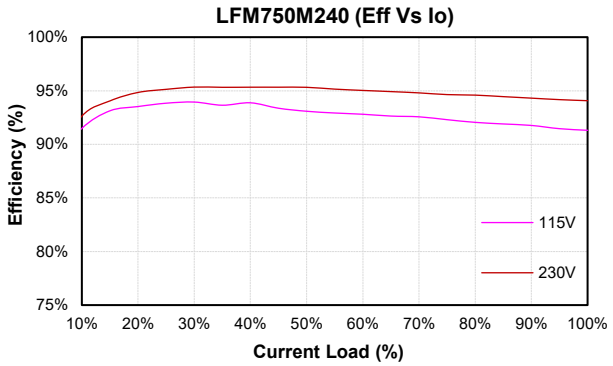


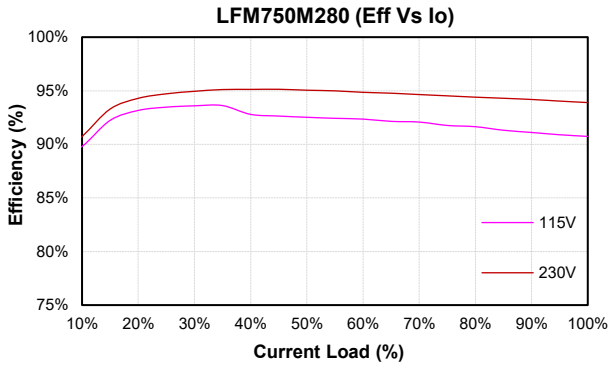


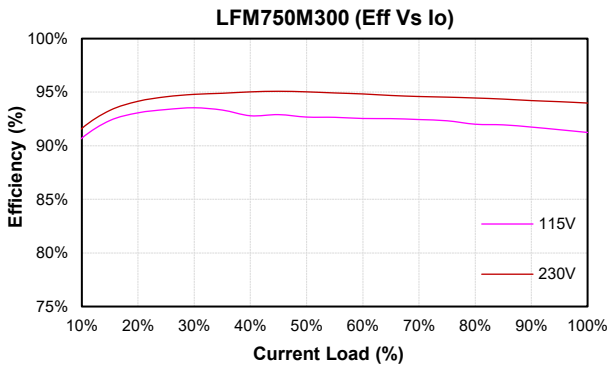
Performance Data

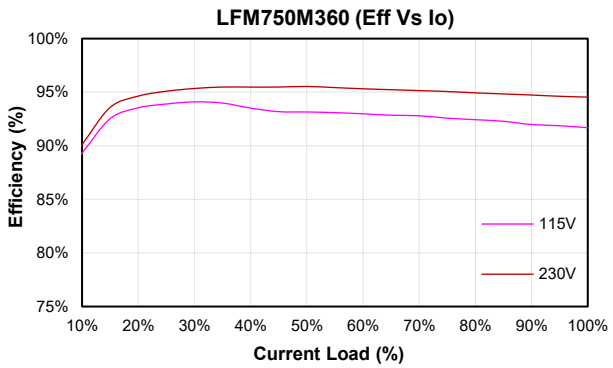


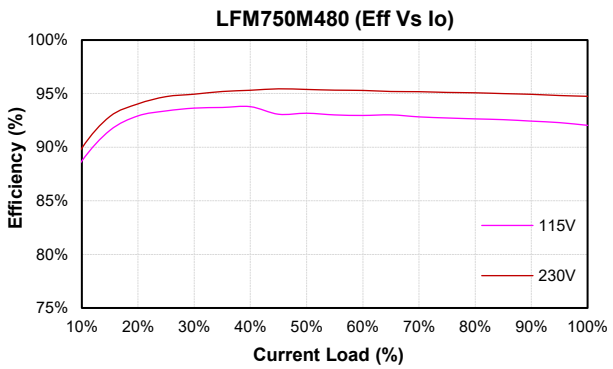


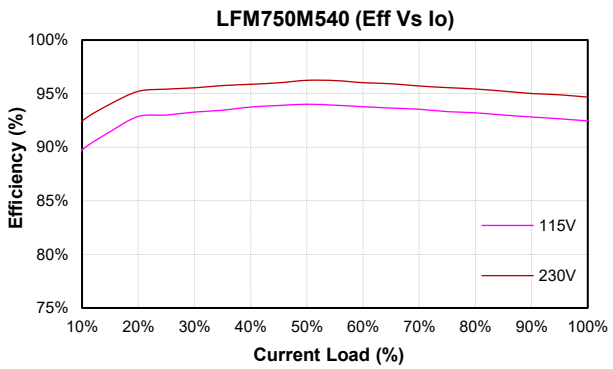




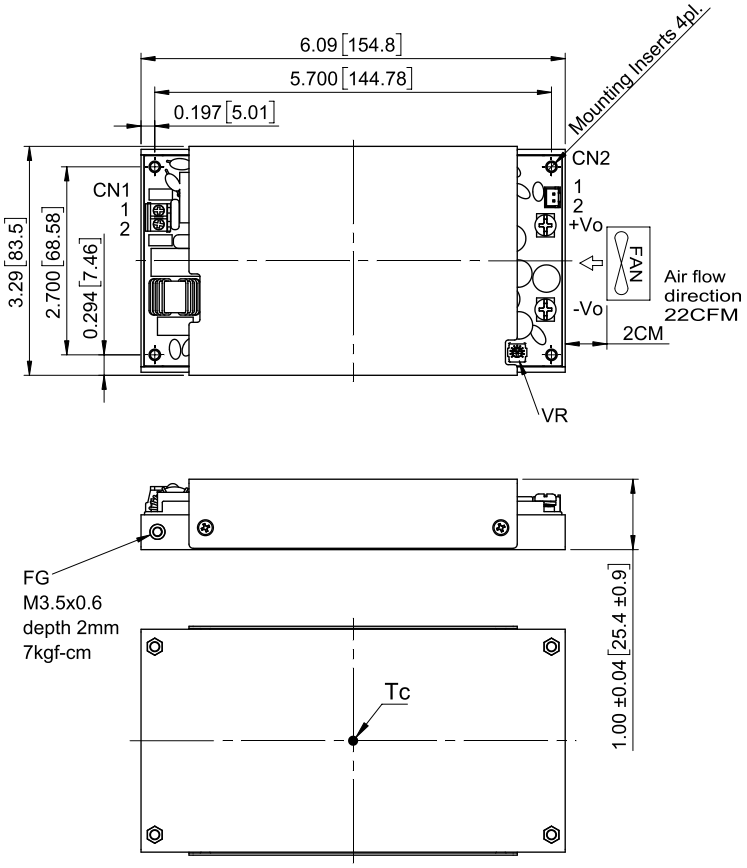








MECHANICAL SPECIFICATION



LFM750MXXXC
LFM750MXXXC-C0

All Dimensions in Inches[mm]
Tolerance Inches: x.xx=±0.03, x.xxx=±0.020
Millimeters: x.x=±0.7, x.xx=±0.50

AC Input Connector(CN1):ECE ETB22

Pin	Function	Mating Wire Range
1	ACL	14~16 AWG
2	ACN	

DC Output Connector(CN2):TKP 8822-02-NHB or equivalent

Pin	Function	Mating Housing	Terminal
1	Rs+	JST XHP-2 or equivalent	JST SXH-001T-P0.6N or equivalent
2	Rs-		

DC Output Connector:KANG YANG PCB-58M4

Function	The screw locked torque
+Vo	M4 7kgf-cm
-Vo	

Mounting Inserts

Series	Option
Blank	∅3.2 Through depth 10.5mm
-C0	M3x0.5 Threaded depth 10.5mm

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