## **225 Watt Medical**



## Features

- 4 x 2 x 1 Inches Form factor
- 225 Watts with Forced Air Cooling & 112.5 Watts Convection Cooling
- Approval to EN60601 3<sup>rd</sup> Edition
- Efficiencies upto 94%
- -40 to 70 degree operating temperature\*
- Dual fusing
- 12V Fan Output, Thermal Shut-Down feature
- > 800K Hours MTBF
- Standby Power < 0.5W
- Medical (BF) Safety Approvals

	Electrical Specifications		
Input Voltage	85-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 95% at 85V AC)		
Input Frequency	47-63 Hz		
Input Current	115 VAC: 2.2 A max. 230 VAC: 1.1 A max.		
No Load Power	less than 0.5W typical		
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A		
Leakage Current	300 uA Typical, (N.A. For Class II Option) Touch current <100uA		
Efficiency	94%(48V), 93%(24V,30V), 92%(12V,15V)		
Hold-up Time	at 225W:10 ms ; 110W: 16 ms		
Power Factor	exceeds 0.95 with Full Load		
Output Power	225W with 13 CFM, 112.5W Convection		
Line Regulation	+/-0.5%		
Load Regulation	+/-0.5%		
Transient Response	sponse 25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4% ,		
	recovery time < 5 ms		
Rise Time	55ms typical		
Set Point Tolerance	+/-1%		
Over Current Protection	>110%		
Over Voltage Protection	110 to 140%		
Short Circuit Protection	Hiccup mode		
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz		
Operating Temperature	-40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation		
Storage Temperature	-40 to +85°C		
Relative Humidity	5% to 95%, noncondensing		
Altitude	Operating: 10,000 ft.; Nonoperating: 40,000 ft.		
MTBF	> 800 kh; Bellcore TR-332		
Isolation Voltage	Input to Output — 4000 VAC medical applications.		
Input to GND - 1500 VAC (Not Applicable For Class II Option)			
	Output to GND- 1500VAC for type BF , 500 VAC for type B (Not Applicable For Class II Option)		
Cooling	225W with 13 CFM forced air cooling at 100 to 264VAC (refer Mechanical Drawing)		
	112.5W with natural convection cooling at 100 to 264VAC.		

Model Number	Voltage	Max. Load (Convection)	Max. Load (13 CFM)	Min. Load	Ripple <sup>1</sup>
LFMWLP225-1001	12 V	9.37A	18.75A	0.0 A	1%
LFMWLP225-1002	15V	7.5A	15A	0.0 A	1%
LFMWLP225-1003	24V	4.68A	9.37A	0.0 A	1%
LFMWLP225-1004	48 V	2.34A	4.68A	0.0 A	1%
LFMWLP225-1005	30 V	3.75A	7.5A	0.0 A	1%
LFMWLP225-1006	58 V	1.94A	3.88A	0.0 A	1%
LFWLP225-CK metal cover kit accessory					

Connectors					
J1	Pin 1	AC NEUTRAL			
	Pin 2	NOT FITTED			
	Pin 3	AC LINE			
J2	Pin 1,2,3	V1 -VE			
	Pin 4,5,6	V1 + VE			
J3	Pin 1	FAN -VE			
	Pin 2	FAN +VE			

## Notes

- 1. Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.
- 2. Class II means without input Earth pin.
- 3. Combined output power of main output, fan supply shall not exceed max. Power rating.
- 4. Fan supply output voltage tolerance including set point accuracy, line and load regulation is  $\pm 1/10\%$  and Ripple and noise is less than 10%.
- 5. Specifications are for nominal input voltage, 25°C unless otherwise stated.

	Mechanical Specifications		
AC Input Connector (J1)	Molex: 26-60-4030		
	Mating: 09-50-3031; Pins: 08-50-0106		
DC Output Connector (J2)	Molex: 26-60-4060		
	Mating: 09-50-3061; Pins: 08-50-0106		
Aux (Fan) Output(J3)	AMP :640456-2		
	Mating: 640440-2		
Dimensions	4 x 2 x 1 inches		
	(101.60 x 50.8x 25.4 mm)		
Weight	200 gm approx		
	EMC		
CE Mark	Complies with LVD Directive		
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B		
Static Discharge	EN61000-4-2, Level-3		
RF Field Susceptibility	EN61000-4-3, Level-3		
Fast Transients/Bursts	EN61000-4-4, Level-3		
Radiated Emissions	Level A radiated,		
	Level B radiated with external core		
Surge Susceptibility	EN61000-4-5, Level-3		
Harmonic Current	EN61000-3-2, Class D		
	Safety		
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1		
Approval Agency	Nemko, UL, C-UL		
Safety File Number(s)	(Pending)		



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