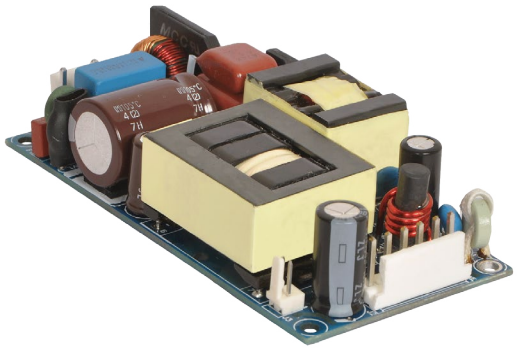
225 Watt Medical



Features

- 4 x 2 x 1 Inches Form factor
- 225 Watts with Forced Air Cooling
- 7 Year Extended Warranty Option
- Efficiencies upto 94%
- -40 to 70 degree operating temperature*
- Dual fusing
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- No Load Power < 0.5W
- Medical (BF) Safety Approvals
- Meets standard IEC60601-1-2 : 2014 (4th Edition)

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, upto 120W Convection
Line Regulation	+/-0.5%
Load Regulation	+/-0.5%
Transient Response	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%
Output Voltage Adjustment	+/-3% (Ref. Note 9)
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[7]	- 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: 16,000 ft.; Nonoperating: 40,000 ft.
MTBF	3.37m Hours, Telcordia -SR332-issue 3
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[6] (refer Mechanical Drawing) upto 120W with natural convection cooling[6] (refer Derating Curve)

Please read our datasheet & drawing disclaimer here.

Model Number	Description	Voltage	Max. Load (Convection) (112.5W) 50°C	Max.Load (Convection) (120W) 40°C	Max. Load (13 CFM) (225W)	Min. Load	Ripple[1]
LFMWLP225-1001	**with Screw Terminal**	12 V	9.37A	10.0A	18.75A	0.0 A	1%
LFMWLP225-1301	**with Molex Connector**	12 V	9.37A	10.0A	18.75A	0.0 A	1%
LFMWLP225-1002	**with Screw Terminal**	15 V	7.5A	8.0A	15A	0.0 A	1%
LFMWLP225-1302	**with Molex Connector**	15 V	7.5A	8.0A	15A	0.0 A	1%
LFMWLP225-1003	**with Screw Terminal**	24 V	4.68A	5.0A	9.37A	0.0 A	1%
LFMWLP225-1303	**with Molex Connector**	24 V	4.68A	5.0A	9.37A	0.0 A	1%
LFMWLP225-1004	**with Screw Terminal**	48 V	2.34A	2.5A	4.68A	0.0 A	1%
LFMWLP225-1304	**with Molex Connector**	48 V	2.34A	2.5A	4.68A	0.0 A	1%
LFMWLP225-1005	**with Screw Terminal**	30 V	3.75A	4.0A	7.5A	0.0 A	1%
LFMWLP225-1305	**with Molex Connector**	30 V	3.75A	4.0A	7.5A	0.0 A	1%
LFMWLP225-1006	**with Screw Terminal**	58 V	1.94A	2.07A	3.88A	0.0 A	1%
LFMWLP225-1306	**with Molex Connector**	58 V	1.94A	2.07A	3.88A	0.0 A	1%
LFWLP225-CK metal cover kit accessory							
To order the extended warranty product please add the suffix –EX to your required part number For Example - MWLP225-1001-EX (See Note 8)							

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 & 2	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 μF (Electrolytic capacitor) in parallel with a 0.1 μF capacitor at rated line voltage and load ranges.
2. Class II version available, Add "-II" suffix at the end of the Model Number.
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 +/-15 % and Ripple and noise is less than 10 %. With V1 fully loaded, Vfan need to have min load of 20mA to be within regulation band.
5. Specifications are for nominal input voltage, 25°C unless otherwise stated.
6. 225W with 13CFM forced air cooling and 120W with natural convection cooling at 100 to 264VAC.
7. Output ripple can be more than 10% of the output voltage.
8. The extended warranty period is 7 years from the date of manufacture and will continue for 6 months thereafter to allow for transport and stock holding prior to end customer receipt. The extended warranty is a "return to base" warranty and does not imply a guarantee of 7 year operation. The standard EOS warranty T&C's apply for the extended warranty period. Refer to your local EOS representative for further details.
9. Adjustment potentiometer is located on the SMT side of the PCB.
10. When used in Cover Kit, de-rate output power to 70 % under all operating conditions

Mechanical Specifications

AC Input Connector (J1)	Molex: 26–60–4030 Mating: 09–50–3031; Pins: 08–50–0106
DC Output Connector (J2) Option 1 (Screw Terminal)	Molex: 39357 Series or equivalent
DC Output Connector (J2) (Molex Connector)	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

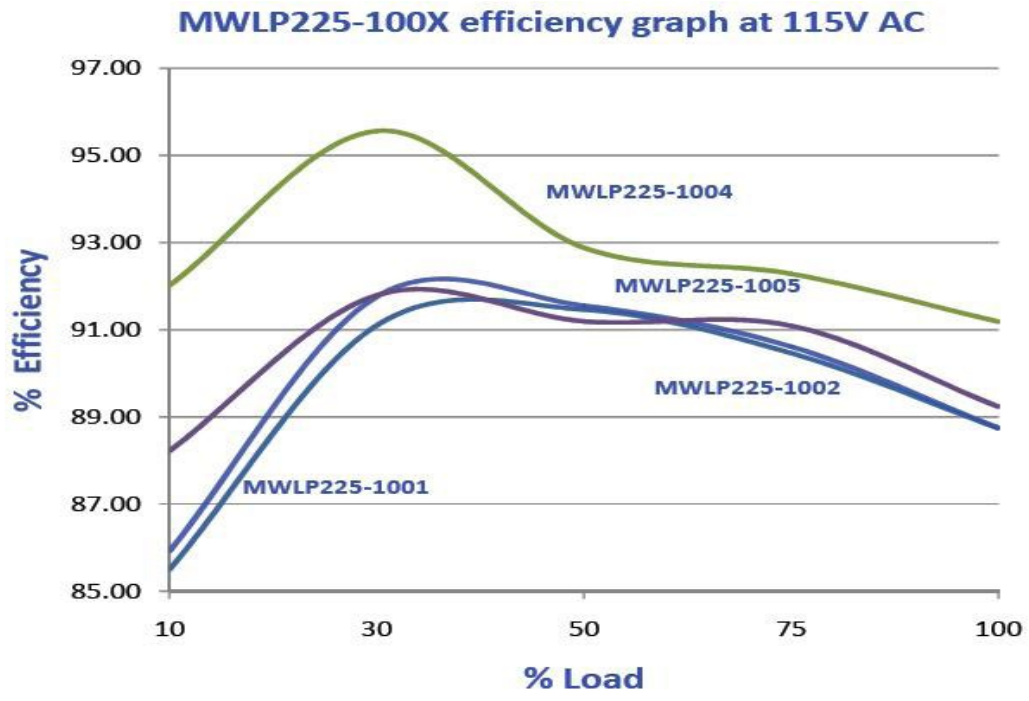
EMC

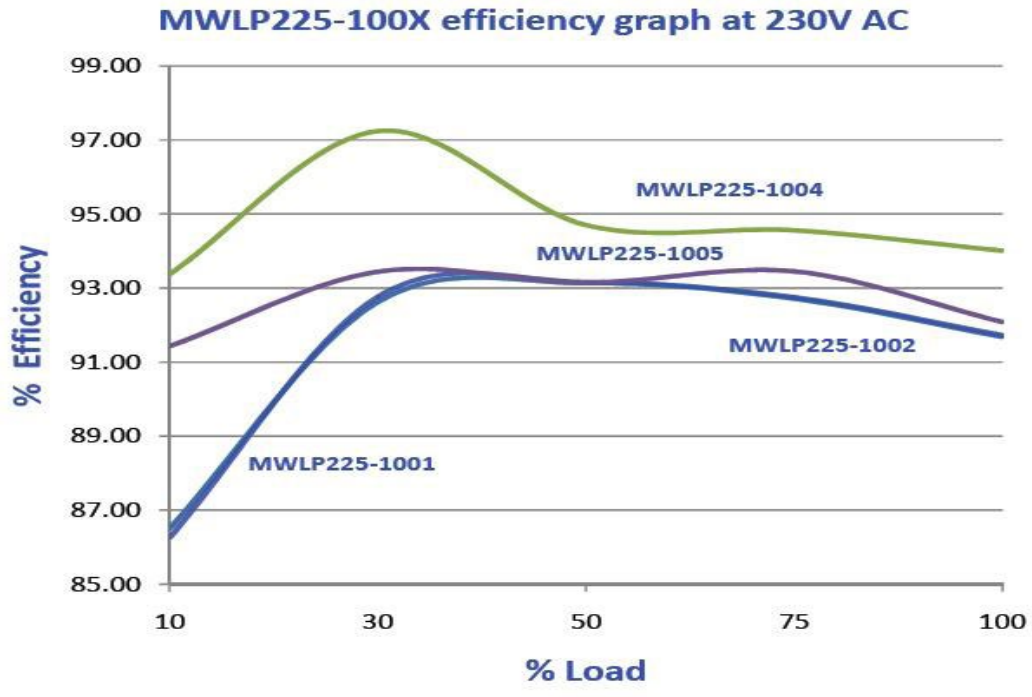
Parameter	Conditions/Description	Criteria
Conducted Emissions	EN 55011-B,CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55011 A	Pass Level B with external core (King core K5B RC 25x12x15-M in input cable)
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 4, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 4, Criterion A
Voltage dips, interruptions	EN 61000-4-11	Criterion B

Safety

CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1
Safety File Number(s)	Class-I : UL: Certificate Number 20141230-E173812, Nemko: Certificate No. P14219157, CB Certif. No.:NO83948 Class-II : UL: Certificate Number 20141230-E173812, NEMKO: Certificate No. P14219181, CB Certif. No. NO84076

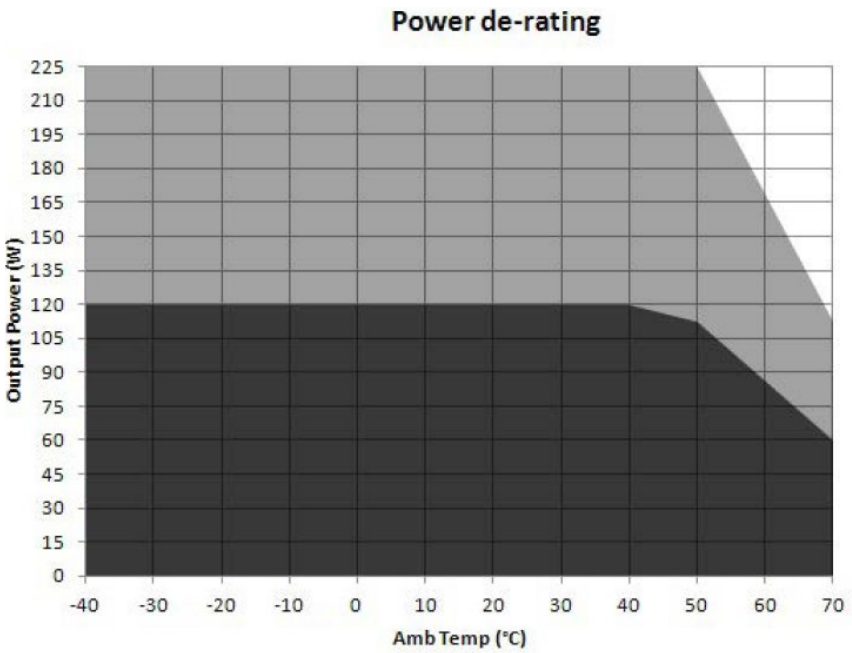
Efficiency Graph





Innovations in Power

Derating Curve

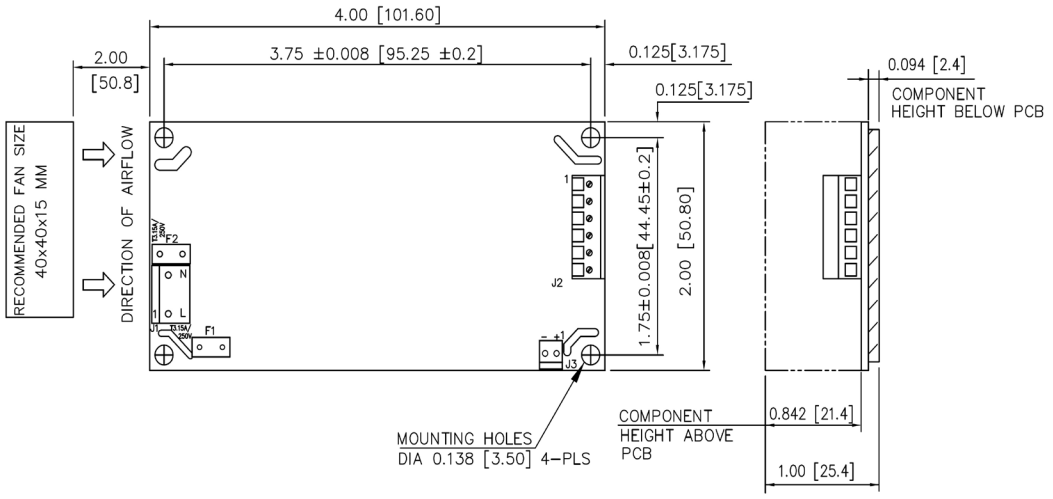


Convection load: 120W up to 40 °C
De-rate between 40-50 °C @ 0.625% per °C
De-rate above 50 °C @ 2.33% per °C

Forced air cooled load : 225W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Mechanical Drawing

Option 1

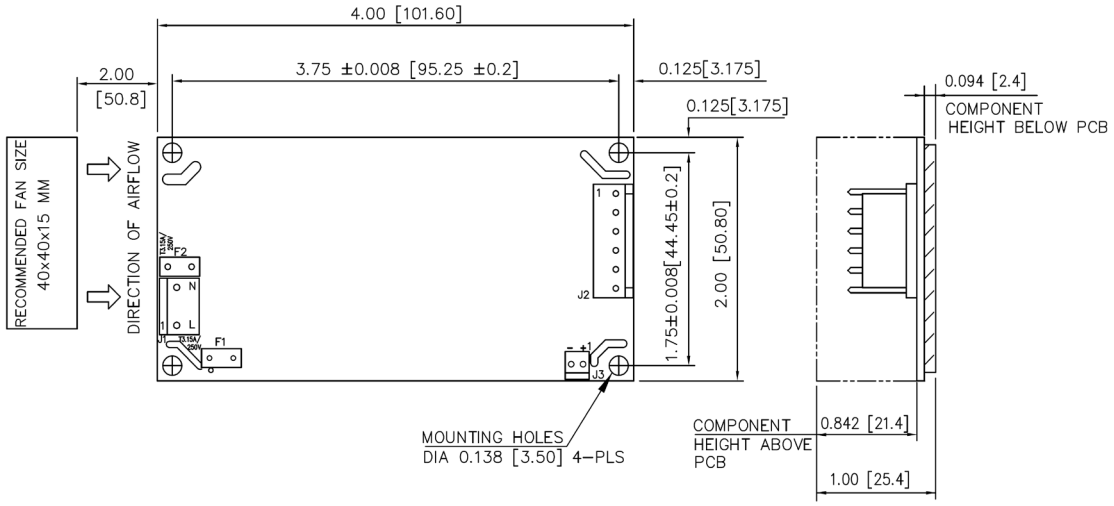


MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE :+/–0.04 [+/–1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following
1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

Mechanical Drawing

Option 2



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/–0.04[+/–1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following
1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.