

60 Watt Medical (MWLT)



Features

- 4 x 2 x 1.2 inches
- Ultra high efficiency > 85%
- 50–65 W from 1 to 3 outputs
- Low leakage current < 250 μ A
- Nemko, UL & CSA approvals to IEC60601
- EN55022–B, CISPR22–B, FCC Part15 Level B, IEC60601–1–2
- No Load Power < 0.3 W
- Class 1 & Class 2 options
- Cover kit accessory available

Electrical Specifications

AC Input	90–264 V, Universal	
Input Frequency ⁵	47–400 Hz	
Input Current	120 VAC: 1.5 A max.	230 VAC: 0.75 A max.
No Load Power	< 0.3 W for single output models; < 0.5 W for multi output models	
Inrush Current	120 VAC: 30 A max.	230 VAC: 60 A max.
Leakage Current	120 VAC: < 140 μ A	230 VAC: < 250 μ A
Efficiency ¹	120 VAC: 85% typical	230 VAC: 85% typical
Hold-up Time	120 VAC: 6 ms	230 VAC: 6 ms
Output Power	50–65 W	
Line Regulation	+/-0.3%	
Load Regulation	V1: +/-0.5%; V2 & V3: +/-5%	
Transient Response	< 10%, 50% to 100% load change, 50/60 Hz, 50% duty cycle, 0.1 A/ μ s, recovery time < 5 ms	
Rise Time	< 100 ms	
Set Point Tolerance	V1: +/-3%; V2 & V3: +/-5%	
Output Adjustability	V1: +/-10%	
Over Current Protection	130% typical above rating	
Over Voltage Protection	130% typical for V1 only	
Short Circuit Protection	Short term, autorecovery	
Switching Frequency	Approximately 67 kHz	
Operating Temperature	–20 to 70°C, refer derating curve; –20 to 0°C, start-up is guaranteed	
Storage Temperature	–40 to +85°C	
Relative Humidity	95% Rh, noncondensing	
Altitude	Operating: 10,000 ft.; Nonoperating: 40,000 ft.	
MTBF	> 100 kh, MIL–HDBK–217F	
Isolation Voltage	Min. 5700 VDC between input to output, 2MOPP; 1500 VAC input to ground, 1MOPP; 500 VAC output to ground	
Cooling	Convection	

Model Number	Voltage	Max. Load ²	Min. Load ⁶	Ripple ³
LFMWLT60-1000	V1=5.1 V	10.0 A	0.0 A	1%
LFMWLT60-1001	V1=12 V	5.0 A	0.0A	1%
LFMWLT60-1002	V1=15 V	4.0 A	0.0 A	1%
LFMWLT60-1003	V1=24 V	2.5 A	0.0 A	1%
LFMWLT60-1004	V1=48 V	1.25 A	0.0 A	1%
LFMWLT60-3000	V1=5.2 V, V2=12.5 V, V3=-12.8 V	V1=8.0 A, V2=3.0 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT60-3001	V1=5.2 V, V2=24 V, V3=-12.8 V	V1=8.0 A, V2=1.5 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT60-3002	V1=5.2 V, V2=14.6 V, V3=-14.8 V	V1=8.0 A, V2=2.5 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT60-3003	V1=3.3 V, V2=5.2 V, V3=-12.8 V	V1=8.0 A, V2=3.0 A, V3=0.5 A	V1=1.0 A, V2=0.1 A, V3=0.0 A	V1=1.5%, V2 & V3=1%
LFWLT60-CK metal cover kit accessory				

Connectors		
J1	Pin 1	AC NEUTRAL
	Pin 2	AC LINE
Spade Connector		EARTH
J2	Pin 1	V1
	Pin 2	V1
	Pin 3	RTN
	Pin 4	RTN
	Pin 5	V3
	Pin 6	V2
J3	Pin 1	+V1 SENSE
	Pin 2	-V1 SENSE

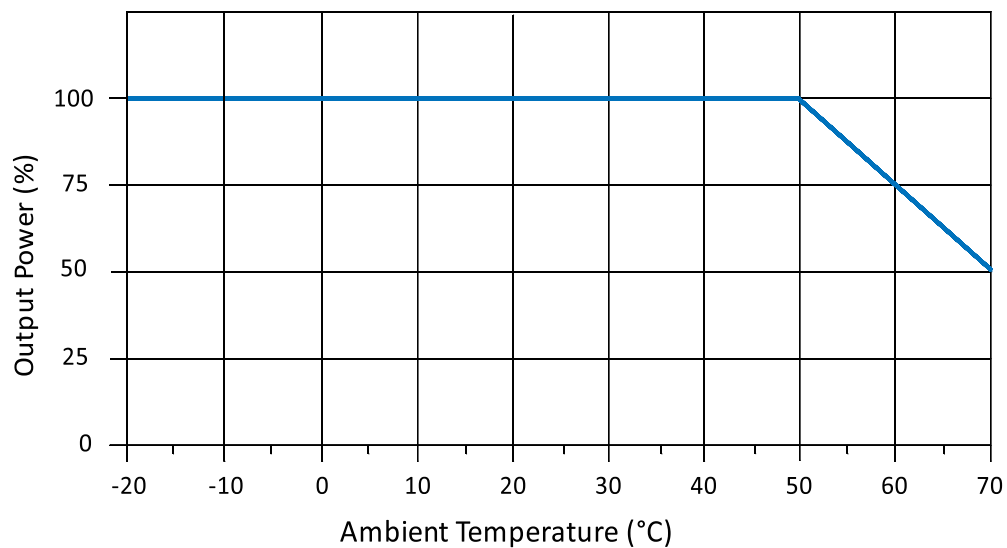
Notes

1. For MWLT60-3003 efficiency is 75% typical.
2. Single output models deliver 65 W, except MWLT60-1000 (50 W).
Triple output models deliver 60 W, except MWLT60-3003 (45 W).
3. Maximum current per output channel. Do not exceed total output power rating.
4. Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
5. Safety approved 47-63 Hz.
6. Min Load specified to meet cross regulation.
7. Add -2 suffix to order Class 2 product.
8. Specifications are for nominal input voltage, 25°C and max. load unless otherwise stated.
9. Derate output power linearly to 80% from 90 VAC to 80 VAC input.

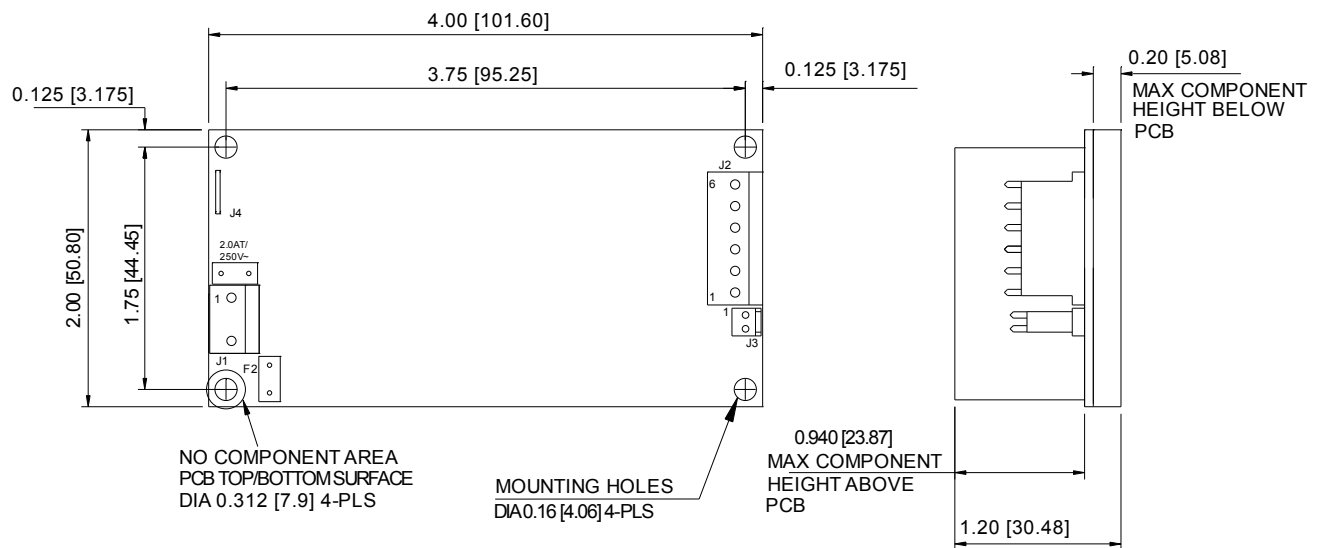
Mechanical Specifications

AC Input Connector (J1)	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
EARTH	Molex: 19705-4301 Mating: 190030001
DC Output Connector (J2)	Tyco: 640445-6 or equivalent Mating: 647402-6; Pins: 3-647409-1
Signal Connector (J3)	Molex: 22-23-2021 or equivalent Mating: 22-01-2021
Dimensions	4.0 x 2.04 x 1.2 inches (101.6 x 51.82 x 30.48 mm)
Weight	150 g
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	EN55022-B, CISPR22-B, FCC PART15-B To be controlled in end system
Surge Susceptibility	EN61000-4-5, Level-3
Harmonic Current	EN61000-3-2, Class A
Safety*	
Safety Standard(s)	EN60601-1, IEC60601-1 (ed.3), UL60601-1 (1st Edition), CSA C22.2 No. 601.1, Class 1 SELV
Approval Agency	Nemko, UL, C-UL
*Safety File Number(s)	Pending

Derating Curve



Mechanical Drawing



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN.TOLERANCE: ± 0.02 [± 0.5 mm]