

# 40 Watt Medical (MWLT)



## Features

- 4 x 2 x 1.2 inches
- Ultra high efficiency > 85%
- Low leakage current < 250  $\mu$ 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 <sup>4</sup>	47-400 Hz
Input Current	120 VAC: 0.85 A max.                      230 VAC: 0.45 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 $\mu$ A                      230 VAC: < 250 $\mu$ A
Efficiency <sup>1</sup>	120 VAC: 85% typical                      230 VAC: 85% typical
Hold-up Time	120 VAC: 6 ms                      230 VAC: 6 ms
Output Power	40 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/ $\mu$ 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 +70°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 <sup>2</sup>	Min. Load <sup>5</sup>	Ripple <sup>3</sup>
LFMWLT40-1000	V1=5.1 V	8.0 A	0.0 A	1%
LFMWLT40-1001	V1=12 V	3.5 A	0.0 A	1%
LFMWLT40-1002	V1=15 V	2.7 A	0.0 A	1%
LFMWLT40-1003	V1=24 V	1.7 A	0.0 A	1%
LFMWLT40-1004	V1=48 V	0.83 A	0.0 A	1%
LFMWLT40-3000	V1=5.2 V, V2=12.5 V, V3=-12.8 V	V1=6.0 A, V2=2.0 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT40-3001	V1=5.2 V, V2=24 V, V3=-12.8 V	V1=6.0 A, V2=1.0 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT40-3002	V1=5.2 V, V2=14.6 V, V3=-14.8 V	V1=6.0 A, V2=1.5 A, V3=0.5 A	V1=0.5 A, V2=0.1 A, V3=0.0 A	1%
LFMWLT40-3003	V1=3.3 V, V2=5.2 V, V3=-12.8 V	V1=6.0 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

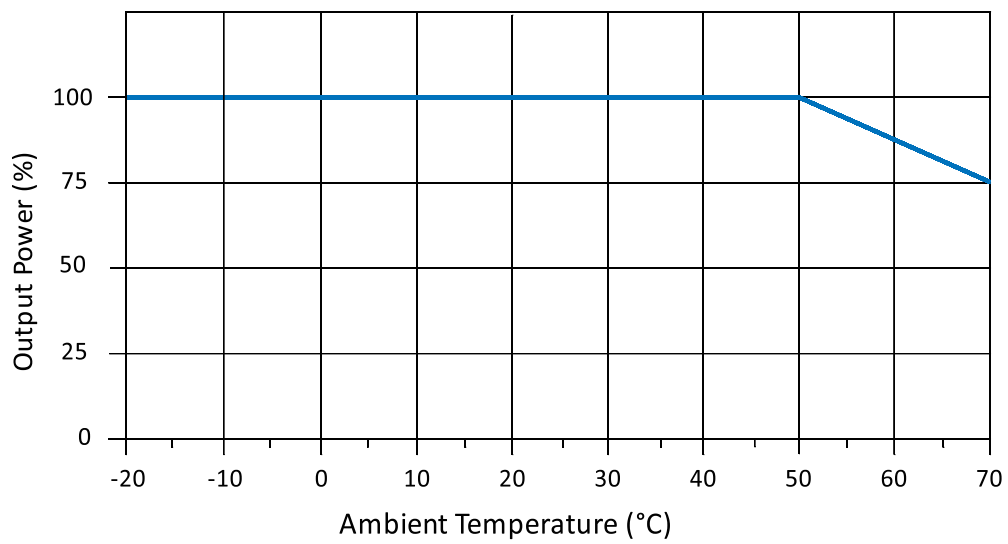
## Notes

1. For MWLT40-3003 efficiency is 75% typical.
2. Maximum current per output channel. Do not exceed total output power rating.
3. 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.
4. Safety approved 47-63 Hz.
5. Min Load specified to meet cross regulation.
6. Add -2 suffix to order Class 2 product.
7. Specifications are for nominal input voltage, 25°C and max. load unless otherwise stated.
8. Derate output power linearly to 80% from 90 VAC to 80 VAC input.

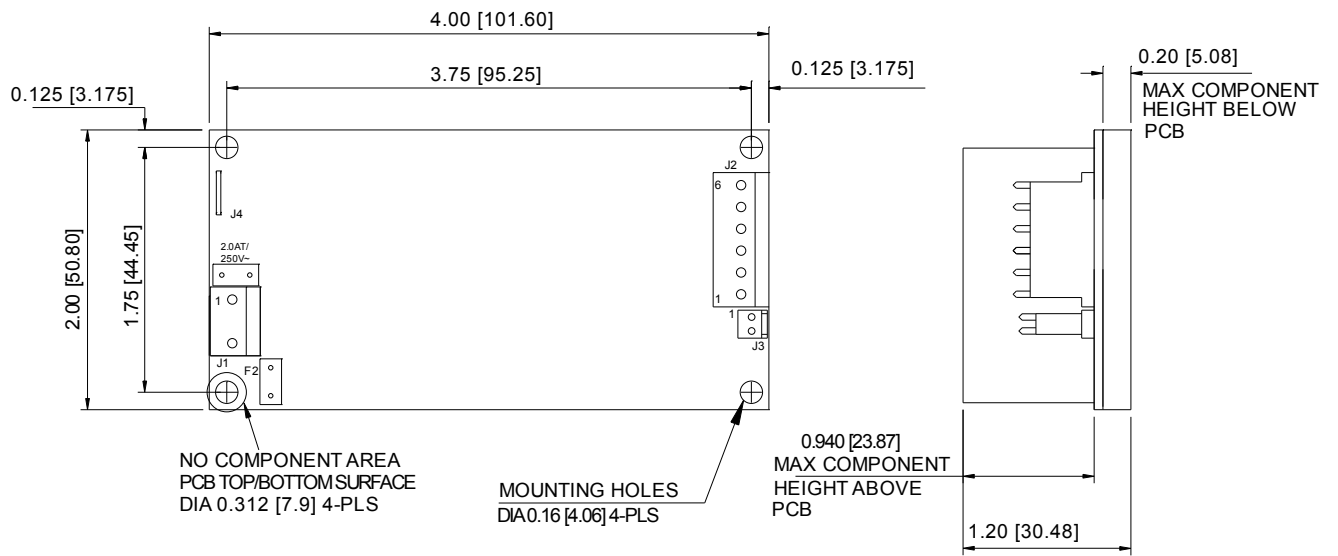
## Mechanical Specifications

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 2.0 x 1.2 inches (101.6 x 50.8 x 30.48 mm)
Weight	150 g
<b>EMC*</b>	
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
<b>Safety*</b>	
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



NO COMPONENT AREA  
 PCB TOP/BOTTOM SURFACE  
 DIA 0.312 [7.9] 4-PLS  
 MOUNTING HOLES  
 DIA 0.16 [4.06] 4-PLS

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