



## Features

- 5 x 3 x 1.07 inches form factor
- Ultra high efficiency > 85%
- 80 W universal input medical AC/DC
- Low leakage current < 250  $\mu$ A
- Nemko, UL & Approved to CSA Standards IEC60601
- EN55022-B, CISPR22-B, FCC Part15 Level B, IEC60601-1-2
- Cover kit accessory available

## Electrical Specifications

AC Input	90-264 V, Universal	
Input Frequency	47-63 Hz	
Input Current	120 VAC: 1.7 A max.	230 VAC: 0.9 A max.
Inrush Current	120 VAC: 17 A max.	230 VAC: 35 A max.
Leakage Current	120 VAC: < 140 $\mu$ A	230 VAC: < 250 $\mu$ A
Efficiency <sup>1</sup>	120 VAC: 85% typical	230 VAC: 87% typical
Hold-up Time	120 VAC: 10 ms	230 VAC: 16 ms
Output Power	60 to 80 W	
Line Regulation	+/-0.3%	
Load Regulation	V1: +/-1%; V2, V3 and V4: +/-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	< 40 ms	
Set Point Tolerance	V1: +/-3%; V2, V3 & V4: +/-5%	
Over Current Protection	110 to 160%	
Over Voltage Protection (For V1 & quad output model only)	4.1 +/-0.2 V for 3.3 V; 6.4 +/-0.4 V for 5 V	
Short Circuit Protection	Short term, autorecovery	
Switching Frequency	Boost converter: 60 kHz typical Resonant converter: 45 kHz typical	
Operating Temperature	0 to 70°C, refer derating curve	
Storage Temperature	-40 to +70°C	
Relative Humidity	95% Rh, noncondensing	
Altitude	Operating: 10,000 ft.; Nonoperating: 40,000 ft.	
MTBF	3.71m Hours, Telcordia SR332 Issue-3	
Isolation Voltage	Min. 5657 VDC between input to output	
Cooling	Convection	

Model Number	Voltage	Max. Load <sup>2</sup>	Min. Load	Ripple <sup>3</sup>
LFMVL80-1000	V1=5.1 V	12.0 A	1.0 A	1%
LFMVL80-1001	V1=12 V	6.8 A	0.2 A	1%
LFMVL80-1002	V1=15 V	5.5 A	0.2 A	1%
LFMVL80-1003	V1=24 V	3.4 A	0.1 A	1%
LFMVL80-1004	V1=48 V	1.7 A	0.2 A	1%
LFMVL80-4000	V1=5.1 V, V2=12.25 V, V3=-5.1 V, V4=-12.5 V	V1=10.0 A, V2=3.0 A, V3=0.8 A, V4=0.8 A	V1=3.0 A, V2=0.1 A, V3=0.0 A, V4=0.0 A	1%
LFMVL80-4001	V1=5.1 V, V2=24 V, V3=12.5 V, V4=-12.5 V	V1=10.0 A, V2=2.0 A, V3=0.8 A, V4=0.8 A	V1=3.0 A, V2=0.1 A, V3=0.0 A, V4=0.0 A	1%
LFMVL80-4002	V1=5.1 V, V2=15.9 V, V3=-5.1 V, V4=-15.9 V	V1=10.0 A, V2=3.0 A, V3=0.8 A, V4=0.8 A	V1=3.0 A, V2=0.1 A, V3=0.0 A, V4=0.0 A	1%
LFMVL80-4003	V1=5.1 V, V2=12.25 V, V3=23.6 V, V4=-12.5 V	V1=10.0 A, V2=3.0 A, V3=0.8 A, V4=0.8 A	V1=3.0 A, V2=0.1 A, V3=0.0 A, V4=0.0 A	1%
LFMVL80-4004	V1=3.3 V, V2=5.1 V, V3=12.5 V, V4=-12.5 V	V1=10.0 A, V2=3.0 A, V3=0.8 A, V4=0.8 A	V1=3.0 A, V2=0.1 A, V3=0.0 A, V4=0.0 A	V1=1.5%, V2, V3 & V4=1%
LFVLT80-CK metal cover kit accessory				

Connectors		
J1	Pin 1	AC NEUTRAL
	Pin 2	AC LINE
Spade Connector		EARTH
J2	Pin 1, 2, 3, 4	V1
	Pin 5, 6, 7, 8	RTN
	Pin 9, 10	V2
	Pin 11	V3
J3	Pin 12	V4
	Pin 1	RTN
	Pin 2	POWER FAIL/GOOD

## Notes

1. For MVL80-4004 efficiency is 80% 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. Power fail and power good signal for quad output models only and optional.
5. Specifications are for nominal input voltage, 25°C and max. load unless otherwise stated.
6. Derate output power linearly to 80% from 90 VAC to 80 VAC input.



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## Mechanical Specifications

AC Input Connector (J1)	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
EARTH	Molex: 19705-4301 or equivalent Mating: 190030001
DC Output Connector (J2)	Tyco: 1-640445-2 or equivalent Mating: 1-647402-2; Pins: 3-647409-1
Signal Connector (J3)	Molex: 22-23-2021 or equivalent Mating: 22-01-2021
Dimensions	5.0 x 3.04 x 1.07 inches (127.0 x 77.22 x 27.18 mm)
Weight	250 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)	Nemko: P12215289 UL: E173812

## Signal

Power Fail/Good Signal <sup>4</sup>	Signal goes high after a delay of 100 ms once main output is within regulation band. Signal goes low 2 ms advance before output goes out of regulation due to mains failure
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