DATASHEET

N2Power™

N2Power ML100 AC-DC Series

High-Efficiency Medical Power Supplies

MLO100
(Open-Frame)

HIGHLIGHTS

- 100 W AC-DC
- *High-Efficiency*–up to 92%
- Low standby power consumption–under 0.3 Watt
- Wide input voltage range 85 to 264 VAC
- Also supports DC-DC (input 120 to 370 VDC)
- Convection cooled full power
- Active Power Factor correction
- Built-in EMI filter
- Output voltage adjustable (±10%)
- Open-frame dimensions 2" x 3" x 1.16"
- 4000 VAC input to output 2xMOPP insulation
- Protection type Class I and Class II
- Low-leakage current – under 75 uA
- Operating altitude – up to 5000 m
- Three-year warranty

MLU100
(U-Frame)

MLE100 (Enclosed)

MLD100 (DIN Rail)

CONNECTOR OPTIONS

JST standard – Molex or Terminal Block optional

HIGH EFFICIENCY IN A SMALL PACKAGE

The ML100 Series provides up to 92% efficiency in an AC-DC power supply. This unique design reduces energy consumption and generates less wasted heat. It requires little forced air cooling and decreases AC loads, resulting in greater economy of operation.

A POWER SUPPLY DESIGN **LEADER**

N2Power leads the power density race with its high-efficiency ML100 AC-DC power supplies, which provide up to 92% efficiency. In fact, comparisons of efficiencies show that our supplies can reduce energy losses by up to 50%. Our advanced technology yields a very small footprint and offers the highest power density in its class. This unique design also generates less wasted heat—reducing the need for forced air cooling, decreasing AC power consumption, increasing reliability, and maximizing its economy of operation. By building our power supplies with a focus on maximizing efficiency, we can provide our valued customers with reduced energy costs, longer product lifespans, and a greater return on their investment.

2xMOPP

Contact us regarding custom and modified standard supplies for unique applications.

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Rev062322

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MODEL	PART NUM	OUTPUT VOLTAGE	OUTPUT CURRENT (A)	RIPPLE & NOISE (P-P)	EFFICIENCY
MLO100-12 MLU100-12 MLE100-12 MLD100-12 MLO100-12B MLU100-12B MLE100-12B MLD100-12B	400211-01-7 400212-01-5 400213-01-3 400214-01-1 400211-08-2 400212-07-2 400213-07-0 400214-07-8	12	8.34	120mV	91%
MLO100-15 MLU100-15 MLE100-15 MLD100-15 MLO100-15B MLU100-15B MLE100-15B MLD100-15B	400211-02-5 400212-02-3 400213-02-1 400214-02-9 400211-09-0 400212-08-0 400213-08-8 400214-08-6	15	6.67	150mV	92%
MLO100-18 MLU100-18 MLE100-18 MLD100-18 MLO100-18B MLU100-18B MLE100-18B MLD100-18B	400211-07-4 400212-13-2 400213-13-2 400214-13-2 400211-14-0 400212-14-0 400213-14-0 400214-14-0	18	5.56	160mV	92%
MLO100-24 MLU100-24 MLE100-24 MLD100-24 MLO100-24B MLU100-24B MLE100-24B MLD100-24B	400211-03-3 400212-03-1 400213-03-9 400214-03-7 400211-10-8 400212-09-8 400213-09-6 400214-09-4	24	4.17	160mV	92%
MLO100-28 MLU100-28 MLE100-28 MLD100-28 MLO100-28B MLU100-28B MLE100-28B MLD100-28B	400211-04-1 400212-04-9 400213-04-7 400214-04-5 400211-11-6 400212-10-6 400213-10-4 400214-10-2	28	3.58	180mV	92%
MLO100-36 MLU100-36 MLE100-36 MLD100-36 MLO100-36B MLU100-36B MLE100-36B MLD100-36B	400211-05-8 400212-05-6 400213-05-4 400214-05-2 400211-12-4 400212-11-4 400213-11-2 400214-11-0	36	2.78	190mV	91%
MLO100-48 MLU100-48 MLE100-48 MLD100-48 MLO100-48B MLU100-48B MLE100-48B MLD100-48B	400211-06-6 400212-06-4 400213-06-2 400214-06-0 400211-13-2 400212-12-2 400213-12-0 400214-12-8	48	2.09	340mV	91%

Note: If you can't find your preferred output voltage listed on the table above, please contact a sales representative. We can easily modify standard PSUs to meet client-specific voltage requirements.

INPUT SPECIFICATIONS	
Nominal Input Voltage:	85 – 264 VAC 120 – 370 VDC
Input Frequency Range:	47 – 63 Hz
Input Current:	1.15 A @ 115 VAC 0.55 A @ 230 VAC
Safety Isolation:	4000VAC Input to output 1500 VAC Input to ground
Inrush Current:	60 A @ 230 VAC
Leakage Current:	75 µA @ 264 VAC
OUTPUT SPECIFICATIONS	
Total Output:	100W
Output Voltages:	12 to 48V
Voltage Tolerance:	±1.0%
Line Regulation:	±0.2% (low line to high line/ full load)
Load Regulation:	±0.5% (no load to full load)
Hold-up Time:	Minimum 16 ms at 115 VAC, full load
Efficiency:	Up to 92%
Minimum Load:	0%
PROTECTION	
Over Voltage Protection:	Latch mode at 115 - 135% of V_{OUT}
Over Power Protection:	Hiccup mode at 115-150% of I_{OUT} rated
Short Circuit Protection:	Continuous protection, with auto recovery
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature:	–25 to +80˚C (Refer to output load derating curve)
Storage Temperature:	– 40 to +85˚C
Relative Humidity:	5% to 95% RH
MTBF (full load at 25°C):	790,000 hours
Vibration	Certified IEC 60068-2-6

MLO models are Open Frame, MLU models are U-Frame, MLE models are Enclosed and MLD models are DIN Rail.

Model No. suffix: B = Class II protection; blank = Class I protection

Contact us regarding custom and modified standard supplies for unique applications. For complete specifications on all models, please visit our website at N2Power.com

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Compliance*

Safety:
IEC/ EN/ ANSI/AAMI ES 60601-1, IEC/ EN/ UL 60950-1, IEC/EN/UL62368-1

EMC:

Emissions:	EN55011, EN55032, EN60601-1-2 & FCC Part 18/15 (Conducted: Class B; Radiated: Class A) EN 61000-3-2, EN 61000-3-3
Immunity:	EN55024, EN60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-8, EN 61000-11

Notes:
1. All parameters NOT specifically mentioned are measured at 230VAC input, rated load and 25°C ambient temperature.
2. The power supply is considered a component which will be installed into a unit of equipment. The equipment itself must also be certified as EMC compliant.

***This product is not designed for use systems, equipment used in hazardous in critical life support environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than those listed herein.**

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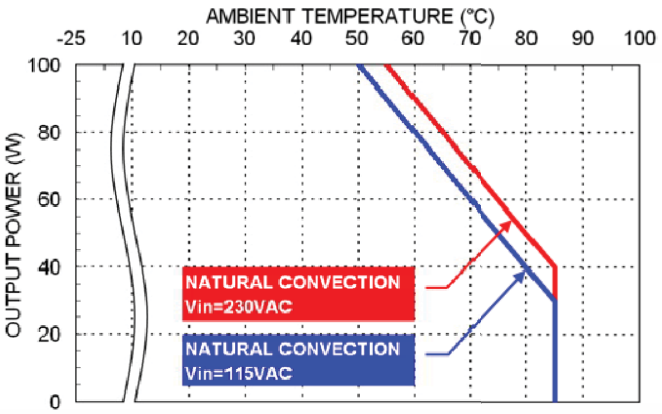
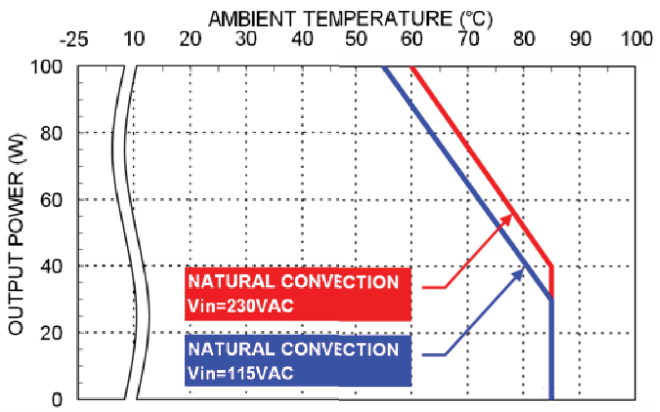
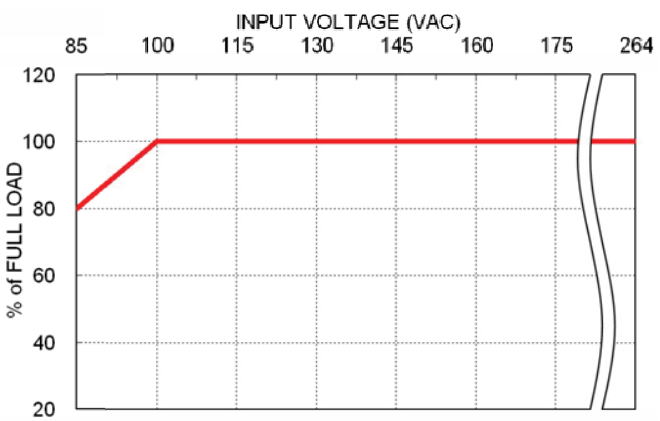
OPERATING CHARACTERISTICS



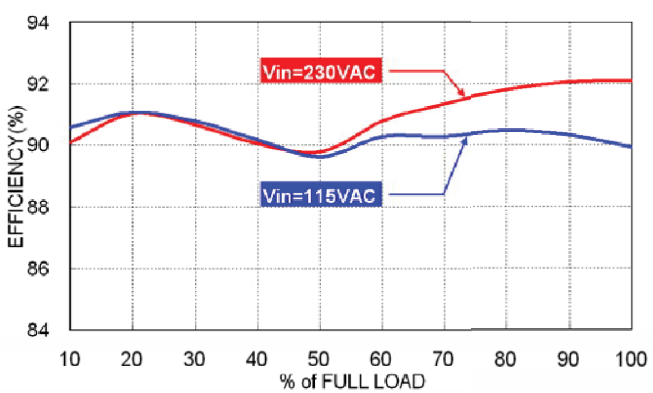
Derating Curve vs. Ambient Temperature
MLO100 and MLU100



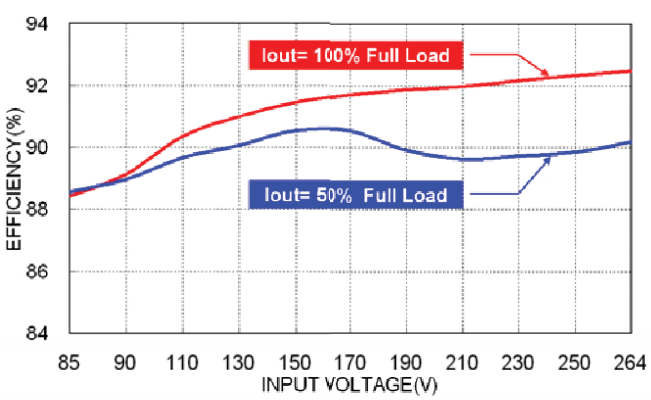
Derating Curve vs. Ambient Temperature
MLE100 and MLD100



Derating Curve vs. Input Voltage
All ML100 Models



Efficiency vs. Output Load
All ML100-24B Models



Efficiency vs. Input Voltage
All ML100-24B Models

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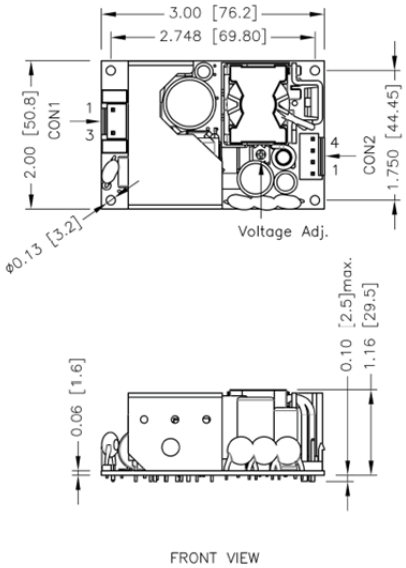
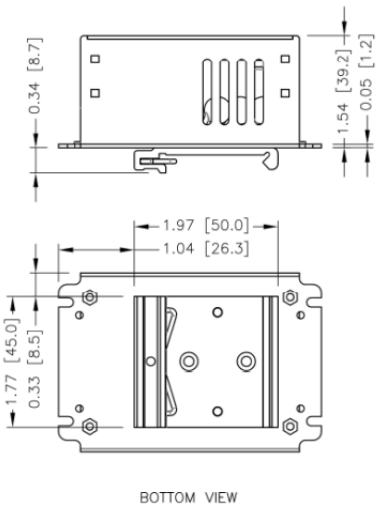
MECHANICAL DRAWINGS

Open-Frame Type



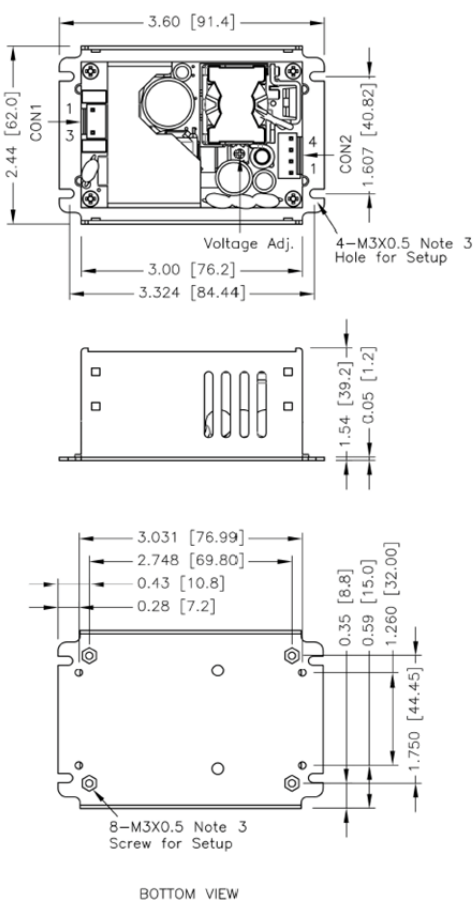
FRONT VIEW

DIN Rail Type



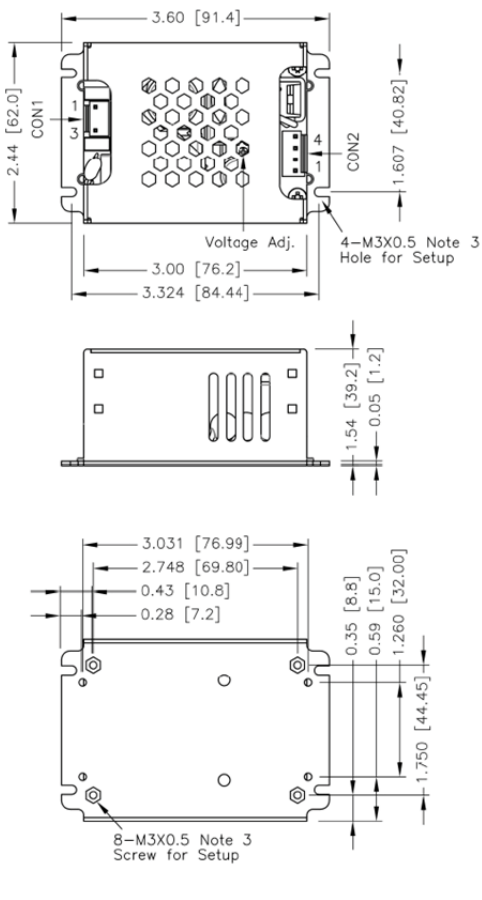
BOTTOM VIEW

U-Frame Type



BOTTOM VIEW

Enclosed Type



BOTTOM VIEW

Connector Pin Assignments

CON1 – Input Connector	
Pin 1	Line
Pin 3	Neutral

CON2 – Output Connector	
Pin 1, 2	- V_{out}
Pin 3, 4	+V_{out}

Notes

1. All dimensions are in inches [mm]
2. Tolerance: x.xx±0.02 (x.x±0.5) x.xxx±0.01 (x.xx±0.25)
3. M3x0.5 screw locked torque MAX 5Kgf.cm/0.49N.m
4. Any one of the four screw holes of the Open Frame chassis can be used as a PG connection point for CLASS I application.

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