

HIGHLIGHTS

- High efficiency – up to 92%
- Low standby power consumption – under 0.3 Watt
- Wide input voltage range 85 to 264VAC, 47 to 63HZ
- Also supports DC-DC (input 120 to 370VDC)
- Convection cooled
- Active Power Factor correction
- Built-in EMI filter
- Output voltage adjustable ($\pm 10\%$)
- Open-frame dimensions 2" x 3" x 1.16"
- 4000VAC input to output 2XMOPP insulation
- Protection type Class I and Class II
- Low leakage current – under 75uA
- Operating altitude – up to 5000m
- 3 year warranty

POWER SUPPLY LEADER

N2Power continues to lead the power density race with its miniature, high efficiency ML100 Series AC-DC power supplies. Our state of the art technology yields a very small 2" x 3" footprint, reduces wasted power, and offers among the highest power densities in the market in the 100 watt range, exceeding 14 watts per cubic inch. This design means reduced energy costs, a greater return on your investment, higher reliability and longer product life.

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.

CONNECTOR OPTIONS

JST standard – Molex or Terminal Block optional



Every effort has been made to keep the information contained in this document current and accurate as of the date of publication. However, no guarantee is given or implied that the document is error-free or that it is accurate with regard to any specification. N2Power reserves the right to change specifications without notice.



MLO100 (Open-Frame)



MLU100 (U-Frame)



MLE100 (Enclosed)



MLD100 (DIN Rail)



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%

INPUT SPECIFICATIONS	
Voltage range	85 - 264VAC, 120 - 370VDC
Frequency range	47 - 63Hz
Power Factor (min.)	0.95
AC current (max.)	1.15A / 115VAC, 0.55A / 230VAC
Inrush current (typ.)	60A / 230VAC
No-load input power	< 0.3W
Leakage current	< 75uA / 264VAC
Startup, Rise time	1000ms, 20ms at full load
Hold up time	16ms at 115VAC and full load
OUTPUT SPECIFICATIONS	
Output power	100W
Voltage accuracy	±1% at 230VAC input & full load
Line regulation	±0.2% (low line to high line/ full load)
Load regulation	±0.5% (no load to full load)
Voltage adjustability	±10%
Minimum load	0%
Temperature coefficient	±0.02% / °C
Transient response	Peak deviation: 3% of Vout, Recovery time: 500µs
PROTECTION	
Input protection	Internal fuse in line & neutral: T3.15A/250VAC
Over load (hiccup mode)	% of Iout rated: 115% - 150%
Over voltage (latch mode)	% of Vout (nom): 115% - 135%
Short circuit	Continuous, automatic recovery
GENERAL SPECIFICATIONS	
Isolation voltage	Input to Output: > 4000VAC Input (Output) to FG: > 1500VAC
Isolation resistance	500VDC @ 0.1GΩ
Switching frequency	60kHz
MTBF	790,000 hours
ENVIRONMENTAL SPECIFICATIONS	
Operating temp & humidity (non-condensing)	-25 ~ +80°C (Refer to output load derating curve), 5 ~ 95% RH
Storage temp & humidity	-40 ~ +85°C, 5 ~ 95% RH
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



Compliance *

Safety:

IEC/ EN/ ANSI/AAMI ES 60601-1 (UL:E360199)
IEC/ EN/ UL 60950-1 (CB:UL/Demko)

EMC:

EMI Conduction & Radiation EN55011, EN55032, EN60601-1-2 & FCC Part 18/15
(Conducted: Class B; Radiated: Class A)

Other certifications

EN 61000-3-2, EN 61000-3-3, 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

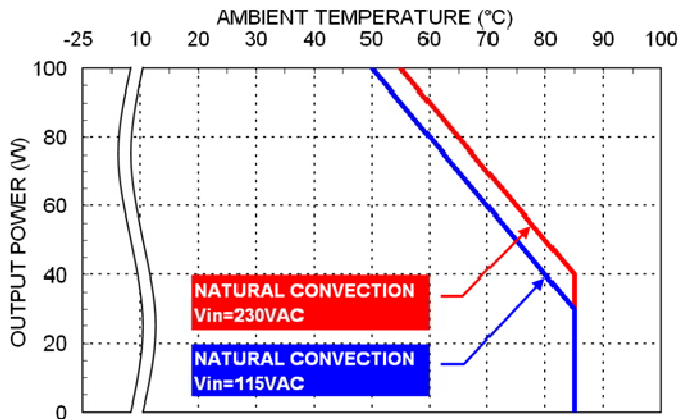
Notes:

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.

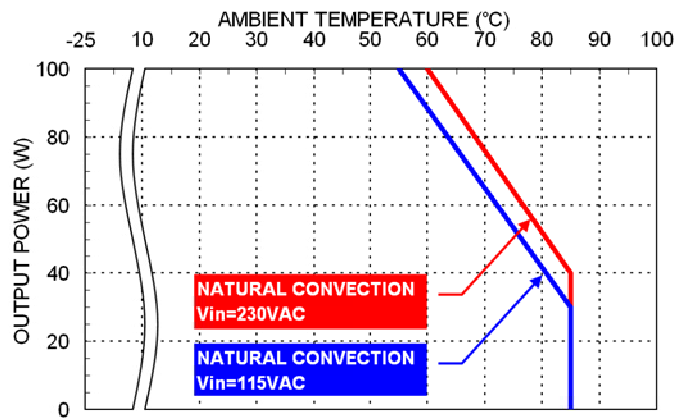
*** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than those listed herein.**



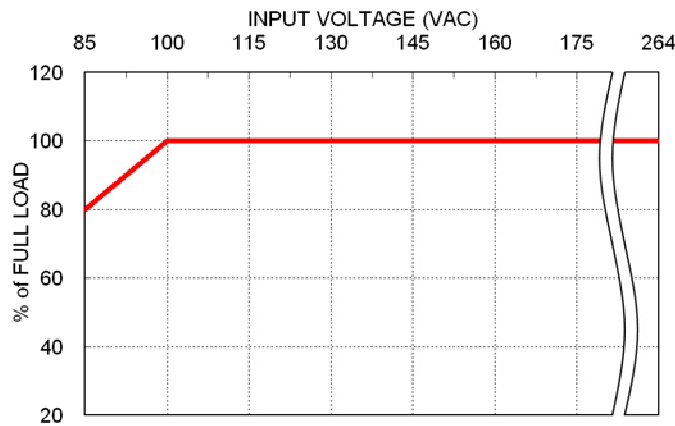
OPERATING CHARACTERISTICS



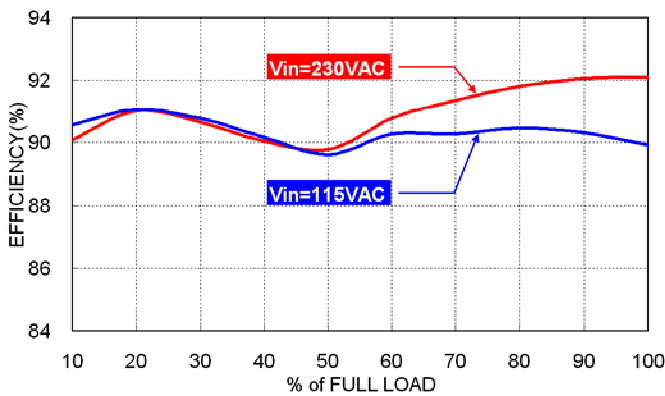
Derating Curve vs. Ambient Temperature
MLO100 and MLU100



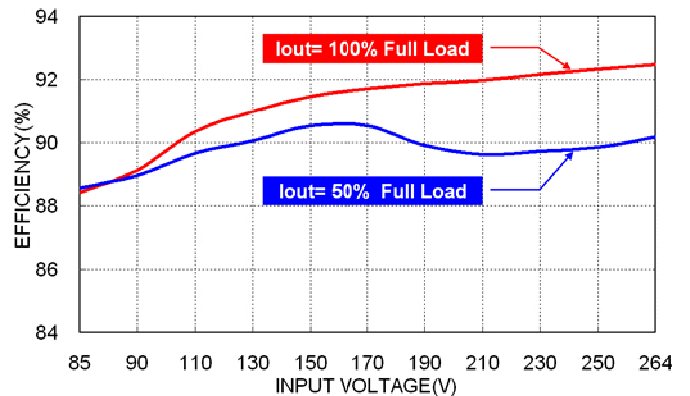
Derating Curve vs. Ambient Temperature
MLE100 and MLD100



Derating Curve vs. Input Voltage
All ML100 Models



Efficiency vs. Output Load
All ML100-24B Models

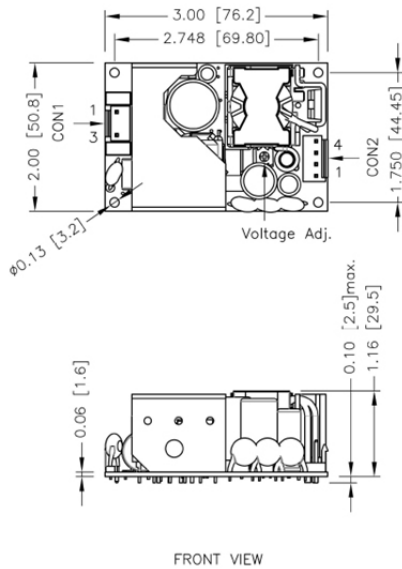


Efficiency vs. Input Voltage
All ML100-24B Models

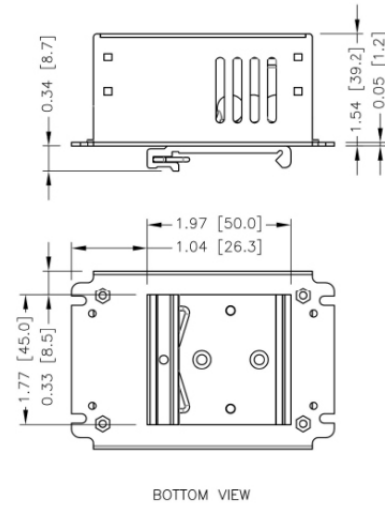


MECHANICAL DRAWINGS

Open-Frame Type



DIN Rail Type



Connector Pin Assignments

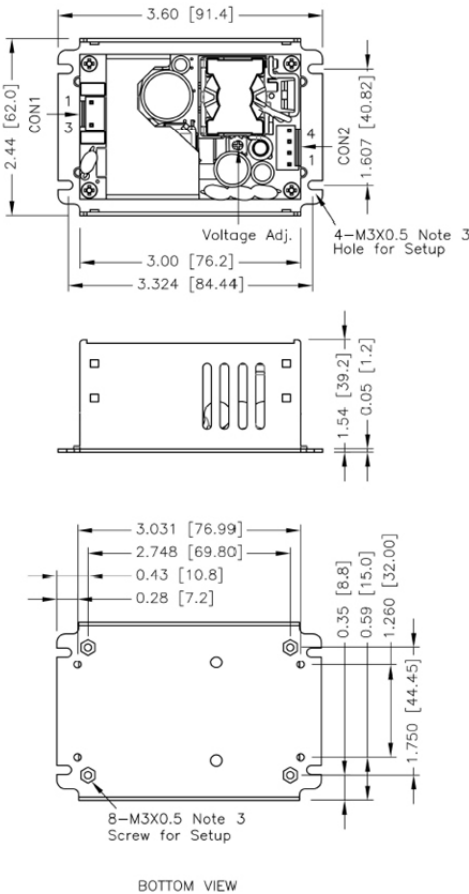
CON1 – Input Connector	
Pin 1	Line
Pin 3	Neutral

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

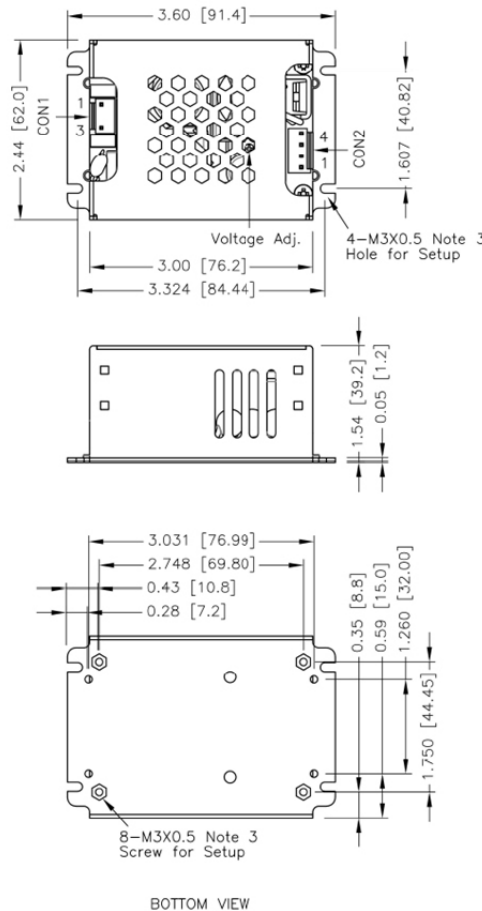
Notes

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.

U-Frame Type



Enclosed Type



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