

N2Power ML65 AC-DC Series High Efficiency Medical Power Supplies

HIGHLIGHTS

- ML65 W AC-DC
- High efficiency (up to 93.5%)
- Low standby power consumption (≤ 0.11 W)
- Wide input voltage range spans 85 to 264 VAC
- Supports DC-DC input from 120 to 370 VDC
- Convection cooled up to full power—no fan needed
- Built-in EMI filter
- Adjustable output voltage ($\pm 10\%$)
- Open frame dimensions 2.00" \times 3.00" \times 1.16"
- 4,000 VAC input to output 2 \times MOPP insulation
- Protection Class I and II
- Low leakage current (<75 μ A)
- Operating altitude up to 5,000 meters
- 3-year warranty

CONNECTOR OPTIONS

JST standard (Molex or terminal block optional)



HIGH EFFICIENCY IN A SMALL PACKAGE

The ML65 Series incorporates the latest advancements in power design to provide up to 93.5% efficiency in an AC-DC power supply. Its unique design reduces energy consumption and generates less wasted heat, decreasing AC loads and eliminating the need for forced air cooling. The result is much more cost-effective operation.



ML065
(Open-Frame)



MLU65
(U-Frame)



MLE65 (Enclosed)



MLD65 (DIN Rail)

A POWER SUPPLY DESIGN LEADER

N2Power leads the power density race with its high efficiency ML65 AC-DC power supplies, which provide up to 93.5% 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.

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



Call 805.583.7744

N2Power.com

Rev041620

Continued on next page...

N2Power ML65 AC-DC Series

High Efficiency Medical Power Supplies

INPUT SPECIFICATIONS	
Nominal Input Voltage:	85 – 264 VAC 120 – 370 VDC
Input Frequency Range:	47 – 63 Hz
Input Current:	1.6 A @ 100 VAC 0.9 A @ 240 VAC
Safety Isolation (2xMOPP Insulation):	4000 VAC Input to Output 2500 VAC Input(output) to ground
Inrush Current:	60 A @ 230 VAC, 25°C
Leakage Current:	75 µA @ 264 VAC 33 µA @ 115 VAC
OUTPUT SPECIFICATIONS	
Total Output:	65W
Output Voltages:	5 V to 53 V
Voltage Tolerance:	±1.0%
Line Regulation:	±0.2% (2)
Hold-up Time:	Minimum 16 ms (115 VAC input, full power load)
Efficiency:	Up to 93.5%
Minimum Load:	No load
PROTECTION	
Over Voltage Protection:	Latch mode at 125 – 140% of V _{OUT}
Over Power Protection:	Hiccup mode at 145% of I _{OUT}
Short Circuit Protection:	Continuous protection with auto recovery
OPERATING SPECIFICATIONS	
Operating Temperature:	–40 to +85°C
Storage Temperature:	– 40 to +85°C
Relative Humidity:	5% to 95% (non-cond.)
MTBF (full load at 25°C):	1,494,000 hours

*See MTBF Report for additional temperature values

MLO models are open frame, MLU models are U-frame, MLE models are enclosed, and MLD models are DIN rail.

Model No. suffix: C = Class I protection; D = Class II protection

Model Number	Part Number	Output	Voltage	Regulation	Max Current	Ripple & Noise P/P
MLO65-05C	400219-01-0	Vout	5	+/-0.7%	10	75 mV
MLU65-05C	400221-01-6					
MLE65-05C	400222-01-4					
MLD65-05C	400220-01-7					
MLO65-05D	400219-07-7					
MLU65-05D	400221-13-1					
MLE65-05D	400222-13-9					
MLD65-05D	400220-07-5					
MLO65-7P5C	400219-19-2					
MLU65-7P5C	400221-02-4					
MLE65-7P5C	400222-02-2					
MLD65-7P5C	400220-19-0					
MLO65-7P5D	400219-13-5					
MLU65-7P5D	400221-19-8					
MLE65-7P5D	400222-19-6					
MLD65-7P5D	400220-13-2					
MLO65-09C	400219-20-0	Vout	9	+/-0.5%	7.23	75 mV
MLU65-09C	400221-03-2					
MLE65-09C	400222-03-0					
MLD65-09C	400220-20-8					
MLO65-09D	400219-14-3					
MLU65-09D	400221-15-6					
MLE65-09D	400222-15-4					
MLD65-09D	400220-14-0					
MLO65-12C	400219-02-8					
MLU65-12C	400221-04-0					
MLE65-12C	400222-04-8					
MLD65-12C	400220-02-5					
MLO65-12D	400219-08-5					
MLU65-12D	400221-16-4					
MLE65-12D	400222-16-2					
MLD65-12D	400220-08-3					
MLO65-15C	400219-21-8	Vout	15	+/-0.5%	4.34	75 mV
MLU65-15C	400221-05-7					
MLE65-15C	400222-05-5					
MLD65-15C	400220-21-6					
MLO65-15D	400219-15-0					
MLU65-15D	400221-17-2					
MLE65-15D	400222-17-0					
MLD65-15D	400220-15-8					
MLO65-18C	400219-25-9					
MLU65-18C	400221-25-5					
MLE65-18C	400222-25-3					
MLD65-18C	400220-25-7					
MLO65-18D	400219-26-7					
MLU65-18D	400221-26-3					
MLE65-18D	400222-26-1					
MLD65-18D	400220-26-5					

Chart continued on next page...

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

Every effort has been made to ensure the information contained in this document was 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.

© Copyright 2020 | Qualstar Corporation | All rights reserved



Call 805.583.7744

N2Power.com

Rev041620

Continued on next page...

N2Power ML65 AC-DC Series

High Efficiency Medical Power Supplies

...Chart continued from previous page...

Model Number	Part Number	Output	Voltage	Regulation	Max Current	Ripple & Noise P/P
MLO65-24C	400219-03-6	Vout	24	+/-0.5%	2.71	75 mV
MLU65-24C	400221-06-5					
MLE65-24C	400222-06-3					
MLD65-24C	400220-03-3					
MLO65-24D	400219-09-3					
MLU65-24D	400221-15-6					
MLE65-24D	400222-15-4					
MLD65-24D	400220-09-1					
MLO65-241C	400219-22-6	Vout	24	+/-0.5%	2.71	75 mV
MLU65-241C	400221-07-3					
MLE65-241C	400222-07-1					
MLD65-241C	400220-22-4					
MLO65-241D	400219-16-8					
MLU65-241D	400221-19-8					
MLE65-241D	400222-19-6					
MLD65-241D	400220-16-6					
MLO65-28C	400219-23-4	Vout	28	+/-0.5%	2.33	75 mV
MLU65-28C	400221-08-1					
MLE65-28C	400222-08-9					
MLD65-28C	400220-23-2					
MLO65-28D	400219-17-6					
MLU65-28D	400221-20-6					
MLE65-28D	400222-20-4					
MLD65-28D	400220-17-4					
MLO65-281C	400219-24-2	Vout	28	+/-0.5%	2.33	75 mV
MLU65-281C	400221-09-9					
MLE65-281C	400222-09-7					
MLD65-281C	400220-24-0					
MLO65-281D	400219-18-4					
MLU65-281D	400221-21-4					
MLE65-281D	400222-21-2					
MLD65-281D	400220-18-2					
MLO65-36C	400219-04-4	Vout	36	+/-0.5%	1.81	75 mV
MLU65-36C	400221-22-2					
MLE65-36C	400222-10-5					
MLD65-36C	400220-04-1					
MLO65-36D	400219-10-1					
MLU65-36D	400221-22-2					
MLE65-36D	400222-22-0					
MLD65-36D	400220-10-9					
MLO65-48C	400219-05-1	Vout	48	+/-0.5%	1.36	150 mV
MLU65-48C	400221-11-5					
MLE65-48C	400222-11-3					
MLD65-48C	400220-05-8					
MLO65-48D	400219-11-9					
MLU65-48D	400221-23-0					
MLE65-48D	400222-23-8					
MLD65-48D	400220-11-7					
MLO65-53C	400219-06-9	Vout	53	+/-0.5%	1.24	150 mV
MLU65-53C	400221-12-3					
MLE65-53C	400222-12-1					
MLD65-53C	400220-06-6					
MLO65-53D	400219-12-7					
MLU65-53D	400221-24-8					
MLE65-53D	400222-24-6					
MLD65-53D	400220-12-5					

EMC:
EMI Conduction & Radiation EN 55011, EN 55032, EN 60601-1-2 & FCC Part 18/15 (Conducted: Class B; Radiated: Class A)

Other certifications: EN 61000-3-2, EN 61000-3-3, EN 55024, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 6100-4-6, EN 61000-8, EN 61000-11, PENDING IEC/EN/UL 62368-1

Notes:
 1. All parameters NOT specifically mentioned are measured at 230 VAC input, rated load, and 25°C ambient temperature.
 2. The power supply is considered a component that 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 that necessitate specific safety and regulatory standards other than those listed herein.**

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

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

For complete specifications on all models, please visit our website at N2Power.com

Compliance *Safety:

IEC/ EN/ ANSI/AAMI ES 60601-1 (CB: UL:E360199)
 IEC/ EN/ UL 60950-1 (CB:UL/ Demko)
 PENDING: IEC/EN/UL 62368-1

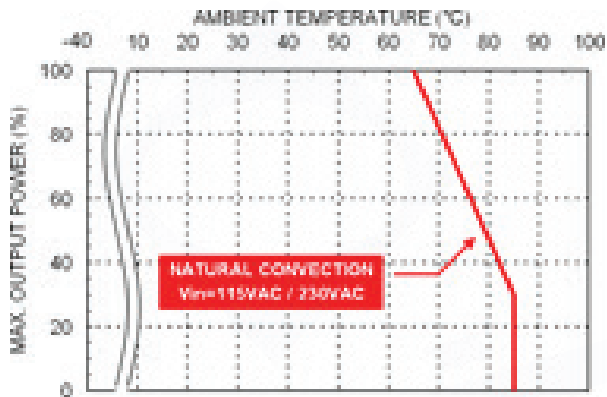
Every effort has been made to ensure the information contained in this document was current and accurate as of the date of publication. However, no guarantee is given or implied that the document is error-free or that it is accurate with regard to any specification. N2Power reserves the right to change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



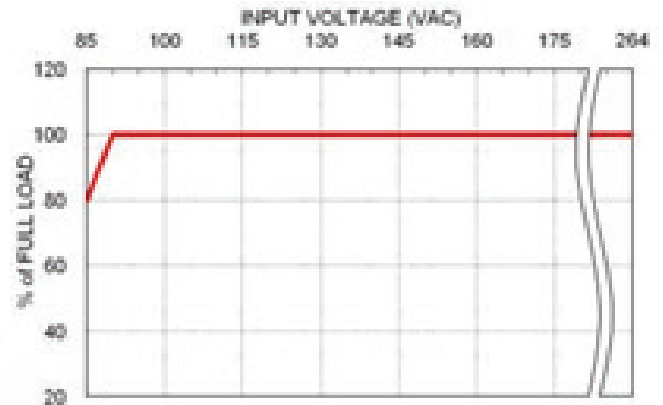
N2Power ML65 AC-DC Series

High Efficiency Medical Power Supplies

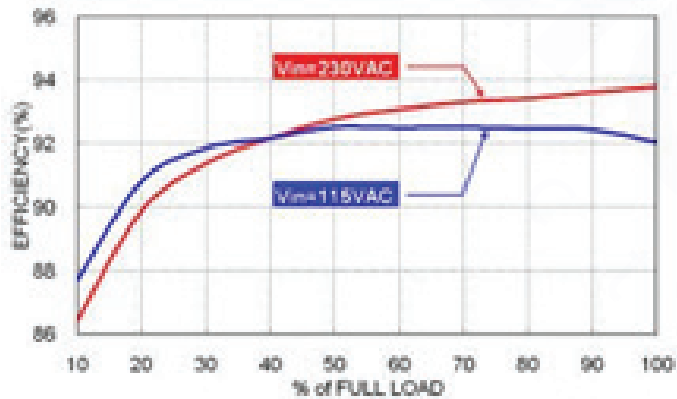
CHARACTERISTIC CURVE



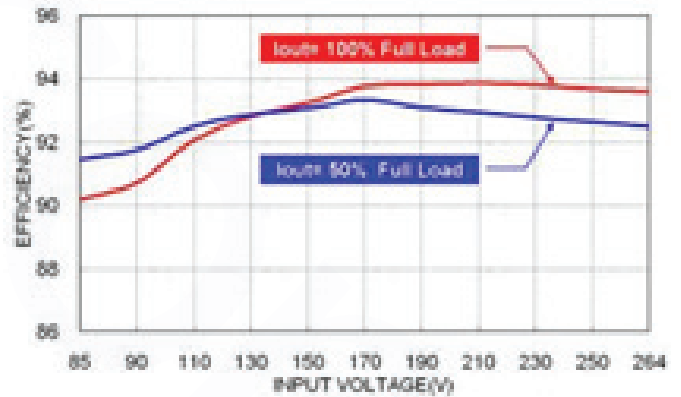
Derating Curve vs. Ambient Temperature



Derating Curve vs. Input Voltage



Efficiency VS Output Load



Efficiency VS Input Voltage

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

Every effort has been made to ensure the information contained in this document was 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.

© Copyright 2020 | Qualstar Corporation | All rights reserved

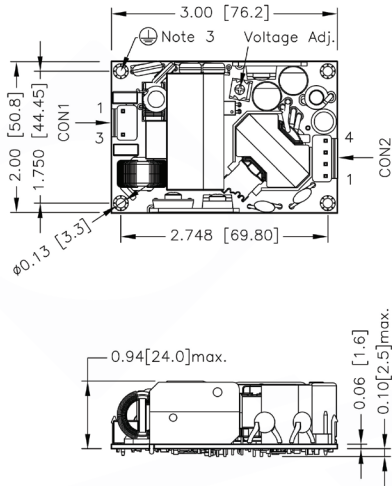


N2Power ML65 AC-DC Series

High Efficiency Medical Power Supplies

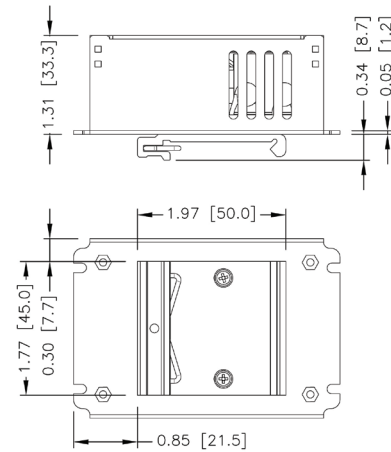
MECHANICAL DRAWINGS

Open type



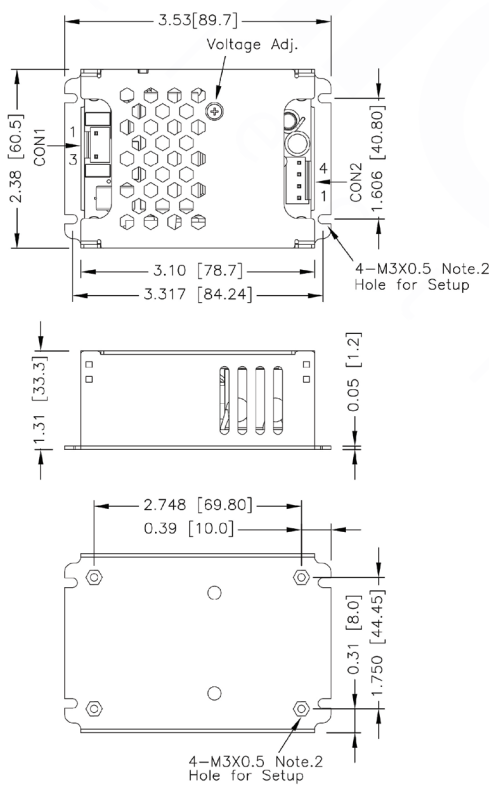
FRONT VIEW

Rail type



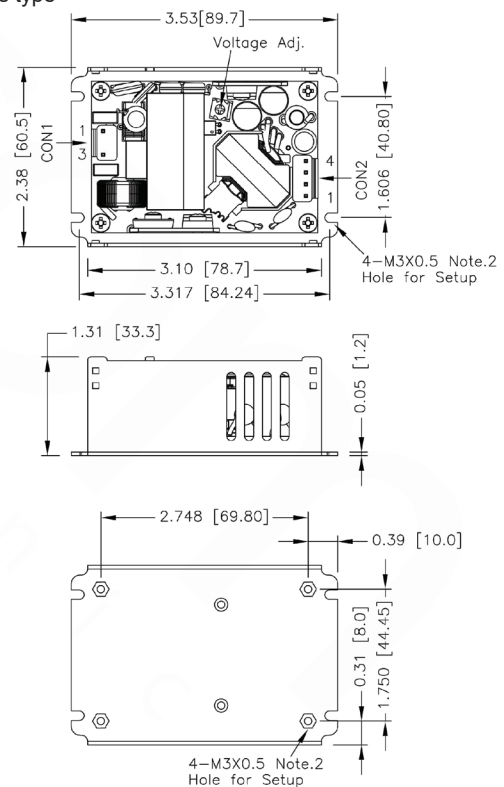
BOTTOM VIEW

Enclosed type



BOTTOM VIEW

U chassis type



BOTTOM VIEW