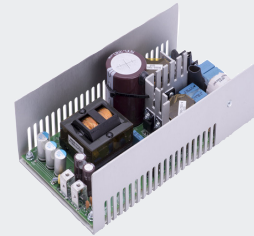


# SL POWER LU500 SERIES

500 Watts Single Output  
LED Grade



Advanced Energy's SL Power LU500 medically-approved AC-DC power supplies are available with a nominal main output of 12 V, 24 V or 48 V. LU500 power supplies provide up to 500 Watts of output power with fan cooling. All models have output overvoltage, short circuit and overload protection and a 4 x 7.25 x 2.2 inch form factor.

## AT A GLANCE

### Total Power

500 Watts

### Input Voltage

90 to 305 VAC

### # of Outputs

Single



## SPECIAL FEATURES

- 500 Watts Fan Cooled
- 180 Watts Conduction Cooled
- 150 Watts Convection Cooled
- Universal Input 90 to 305 VAC
- Active Current Share
- Class I input
- 93% efficiency @ 230VAC input,  
92% @ 115VAC input
- -10°C to +70°C Operating  
Temperature
- ROHS Compliant
- 3-years Warranty

## SAFETY

- |       |            |
|-------|------------|
| ■ EN  | EN62368-1  |
| ■ CSA | CSA62368-1 |
| ■ UL  | UL62368-1  |
| ■ CB  | IEC62368-1 |

## ELECTRICAL SPECIFICATIONS

Input	
Input Range	100 to 277 VAC, $\pm 10\%$ , 47-63Hz; 127-380VDC (External fuse required. Not safety approved) Power supply is protected against brown out condition
Input Current	5A max at 115VAC, 2.5A max at 230VAC, 2.1A max at 277VAC
Inrush Current	70A peak, cold start @ 277VAC input
Input fuses	F1, T10A, 500VAC, Provided on all models
Earth Leakage Current	<350uA@277VAC, 60Hz, NC
Efficiency	12V: 90% typical at 115VAC, full load; 92% typical at 230VAC, full load Other outputs: 92% typical at 115VAC; 93% typical at 230VAC
Switching Frequency	PFC: Variable, 50-500kHz Main converter: Variable 40-180 kHz, 65kHz typical
Isolation Voltage	Input/Ground: 1500VAC Input/Output: 3000VAC Output/Ground: 500VAC
Output	
Output Voltage	See "Ordering information" section
Output Voltage Adjustment	$\pm 5\%$ , Units must be set within 0.1% of each other for current share configuration
Ripple and Noise	12V: 1.5% of Vout, pk-pk 24V, 48V: 1% of Vout, pk-pk
Total Regulation	$\pm 2\%$
Minimum Load	Not required
Turn On Delay	<500mS Seconds at 115Vac
Hold Up Time	16mS minimum from loss of ac input at 100Vac, full load
Transient Response	<500us response time for return to within 0.5% of final value for 50% load step from 5% to 100%, $\Delta i / \Delta t < 0.2A/us$ . Max. voltage deviation is $\pm 3\%$ of final value.
Reliability	
MTBF	500,000 hours @ 110VAC, 25°C ambient
Warranty	3 years
Protection	
Overvoltage Protection	Hiccup mode, Self-recovering see models chart for trip ranges
Short circuit Protection	Self-recovering
Overtemperature Protection	Self-recovering. Automatic power shutdown at TC 135°C/115°C
Overload Protection	120% to 140% of current rating, Hiccup Mode

## EMI/EMC COMPLIANCE

Conducted emissions	EN55015 (EN55032) Class B, FCC Part 15, Subpart B, Class B
Radiated emissions	EN55011/15 Class A; FCC Part 15, Subpart A, Class A
Harmonic current emissions	EN61000-3-2, Class A,C, and D
Voltage fluctuations & flicker	EN61000-3-3, Complies
Electro static discharge immunity	EN61000-4-2, Criteria A, 8kV contact discharge, 15kV air discharge
Radiated RF EM fields susceptibility	EN61000-4-3, 10V/M Criteria A
Rated Power Frequency magnetic fields	EN61000-4-8, 3A/m
Electrical fast transients / bursts	EN61000-4-4, 2kV/5kHz
Surges line to line (DM) and line to ground (CM)	EN61000-4-5, 1kV differential, 2kV common-mode
Conducted RF Immunity	EN61000-4-6, 3Vrms

## ENVIRONMENTAL SPECIFICATIONS

Vibration	Operating: 0.003 g <sup>2</sup> /Hz, 1.5 grams overall, 3 axes, 1 hr/axis Non-operating: 0.026 g <sup>2</sup> /Hz, 5.0 grms overall, 3 axes, 10 mins/axis
Shock	Operating: Half-sine shock waveform. Impact Acceleration: 40g, Pulse duration: 8mS. Cycles: 3 times per axis in X,Y, Z direction, 6 shocks total
Heat - Sink Temperature	To maintain Safety approval & life expectancy, heatsink temperature should not exceed 85°C
Storage temperature	-40°C to +85°C
Altitude	Operating: 3,000 m. Non-operating: 150 to 12,000 m
Relative humidity	5% to 95%, non-condensing
Dimensions	4" X 7.25" X 2.2" 101.60 X 184.15 X 55.88 mm
Weight	1.5 lbs (0.68kg)

## ORDERING INFORMATION

Model Number <sup>1</sup>	Output Voltage	Output Current (w/200LFM air)	Ripple & Noise <sup>2</sup>	Total Regulation	OVP Threshold
LU500S12T	12 V	34 A	1.5%	±2%	13.8±1.0 Vdc
LU500S24T	24 V	20.8 A	1%	±2%	27.6±1.0 Vdc
LU500S48T <sup>3</sup>	48 V	10.4 A	1%	±2%	55.5±2.0 Vdc

Notes:

1. Input Connector: "T" = Terminal Block and replace with "E" = 3pin Molex

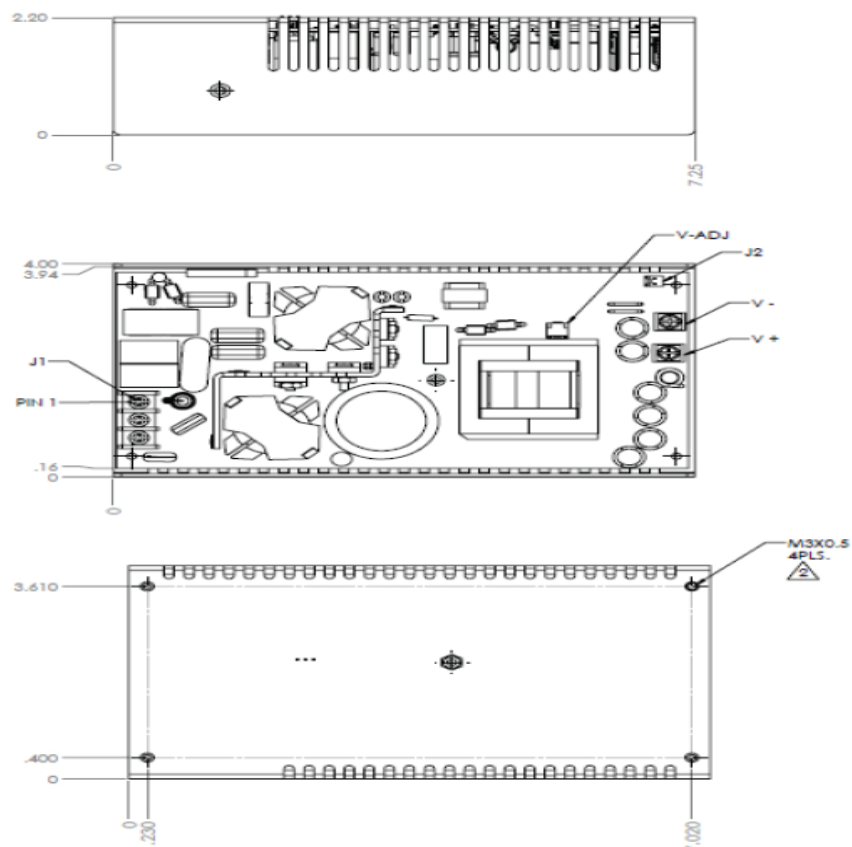
2. Measured with noise probe directly across output terminals with 0.1µF ceramic and 10µF low ESR capacitors. For main output load of less than 5%, total noise & ripple will increase to 2%.

3. Consult AE for availability.

## SAFETY

EN	EN62368-1
CSA	CAN/CSA62368-1
UL	UL62368-1
IEC	IEC62368-1

## MECHANICAL DRAWING



## CONNECTOR INFORMATION

INPUT (J1)	TERMINAL BLOCK	3 TERMINAL MAGNUM: A102203-07-CA OR EBY: 5002-03-N-12 OR DKL: DT-35-B07W-03		CONFIGURATION #1 AC LINE #2 AC NEUTRAL #3 GROUND	
SHARE/ SENSE (J2)	CONNECTOR	2 PIN AMP(TYCO) 640456-2 OR MOLEX 22-23-2021		PIN CONFIGURATION #1 +SENSE (+) #2 SHARE (-)	MATING HOUSING: AMP(TYCO) 1375820-2, OR 3-640441-2(DC) MATING CONTACT: AMP(TYCO) 1375819-1  MATING HOUSING: MOLEX 22-01-3022 MATING CONTACT: MOLEX 08-50-0114
OUTPUT (V+, V-)		BUSS BAR (M3 x 0.5 SCREW)		CONFIGURATION #1 POSITIVE (+) #2 COMMON (-)	



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## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

**PRECISION | POWER | PERFORMANCE | TRUST**

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