



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



### 85 Watts

- Medical & IT Safety Approvals
- Energy Efficiency Level VI & EU CoC Tier 2 Compliant
- 4th Edition Medical EMC
- IP32 Environmental Rating
- Class I and Class II Versions
- <0.15 W Standby Power
- 0 °C to 60 °C Operation
- Low Earth Leakage Current
- 3 Year Warranty



#### Dimensions:

**ALM85:**  
5.315 x 2.441 x 1.457" (135.0 x 62.0 x 37.0 mm)

The ALM85 series of medical external power supplies is fully approved to international medical & IT safety standards. It has been designed with very high efficiency and low standby power, enabling it to meet the latest environmental legislation. The unit has a fully sealed enclosure complying with IP32 and a smooth surface finish making it easier to wipe down in a clinical setting.

### Models & Ratings

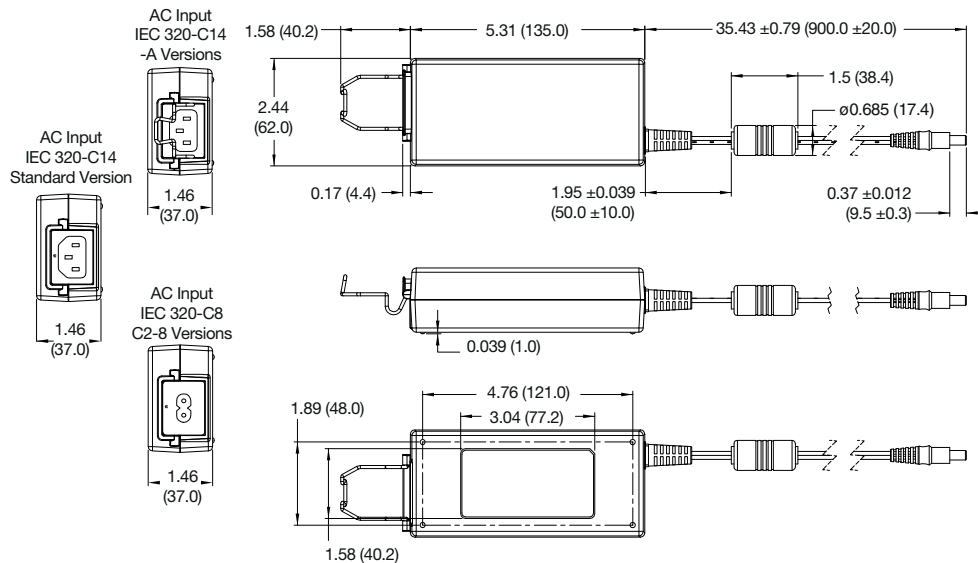
Output Power	Output Voltage	Output Current	Total Regulation	Model Number <sup>(1,2)</sup>
80 W	12.0 V	6.67 A	±5%	ALM85US12
	15.0 V	5.33 A		ALM85US15
85 W	19.0 V	4.47 A		ALM85US19
	24.0 V	3.54 A		ALM85US24

#### Notes

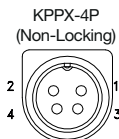
1. For class II versions, add suffix 'C2-8' to the end of the part number e.g. ALM85US24C2-8.

2. For optional input connector retention clip add suffix '-A' to the model number, e.g. ALM85US24-A (not available for C2 versions)

### Mechanical Details

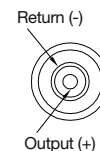


#### 12 & 15 V Versions



Pin	Connection
1	+Vout
2	+Vout
3	RTN
4	RTN
Shell	Not Connected

#### 19 & 24 V Versions



#### Notes

- All dimensions shown in inches (mm). Tolerance is 0.02 (0.5) maximum, except output cable length.
- Weight: 0.78 lbs (355 g) approx.
- For European mains lead order part EU-MAINS-IEC for C14 versions, or EU-MAINS-8 for C8 versions.
- For UK mains lead order part UK-MAINS-IEC for C14 versions, or UK-MAINS-8 for C8 versions.

- For US mains lead order part US-MAINS-IEC for C14 versions, or US-MAINS-8 for C8 versions.
- Output connector: 12 V & 15 V: 4 pin power din with pin 1 & 2 - positive and pin 3 & 4 - return, equivalent to KPPX-4P (non-locking). 19 V & 24 V: DC barrel jack; 5.5 outer diameter, 2.5 mm inner diameter with centre positive.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	80		264	VAC	Derate linearly from 100% load at 90 VAC to 80% load at 80 VAC. 300 VAC/5 s maximum
Input Frequency	47		63	Hz	
Input Current		1.7/0.9		A	Measured at 115/230 VAC
Inrush Current			60/120	A	115/230 VAC, cold start at 25 °C
Power Factor					EN61000-3-2 Class A
Earth Leakage Current			250	µA	264 VAC, 60 Hz
No Load Input Power			0.15	W	
Input Protection	T3.15A/250 VAC internal fuse in both line & neutral				

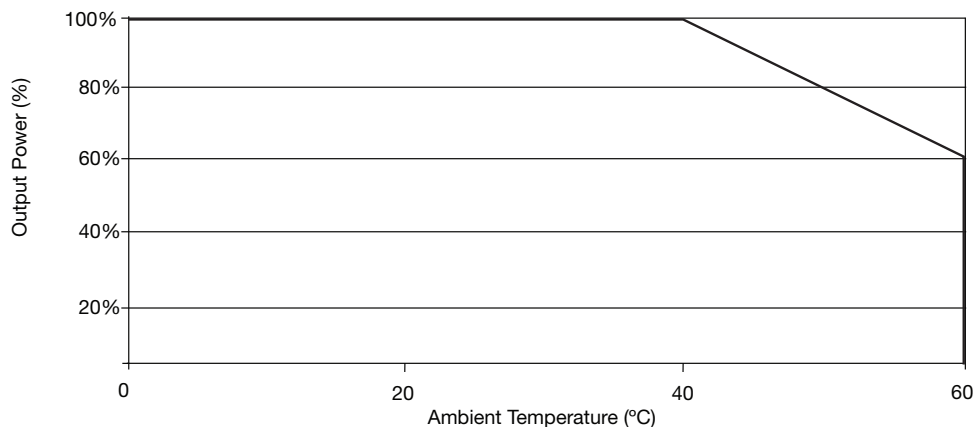
### Output

Characteristic	Min.	Typ.	Max.	Units	Notes & Conditions
Output Voltage	12		24	VDC	See Models and Ratings table
Initial Set Accuracy			±2	%	At 50% load
Minimum Load					No minimum load required
Start Up Delay			2	s	
Start Up Rise Time			150	ms	
Hold Up Time	10/20			ms	Full load and 115/230 VAC
Line Regulation			±0.5	%	
Total Regulation			±5	%	
Transient Response			4	%	Maximum deviation, recovering to less than 1% within 500 µs for 25% step load
Ripple and Noise			1.5	% pk-pk	20 MHz bandwidth, measured with 20 MHz Bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor.
Overshoot			10	%	At turn on / turn off
Overload Protection	115		175	%	
Overvoltage Protection			150	%	Recycle mains to reset
Short Circuit Protection	Trip and restart (hiccup), auto resetting				
Thermal Protection	Measured internally, auto resetting				
Temperature Coefficient		0.02		%/°C	
Patent Leakage Current			95	µ A	264 VAC, 60 Hz

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+60	°C	Derate from 100% load at 40 °C to 60% load at 60 °C
Cooling	Natural convection				
Operating Humidity	5		95	%RH	Non-condensing
Storage Temperature	-20		+80	°C	
Operating Altitude			5000	m	
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep, 60 mins for each of 3 axes				

### Derating Curve

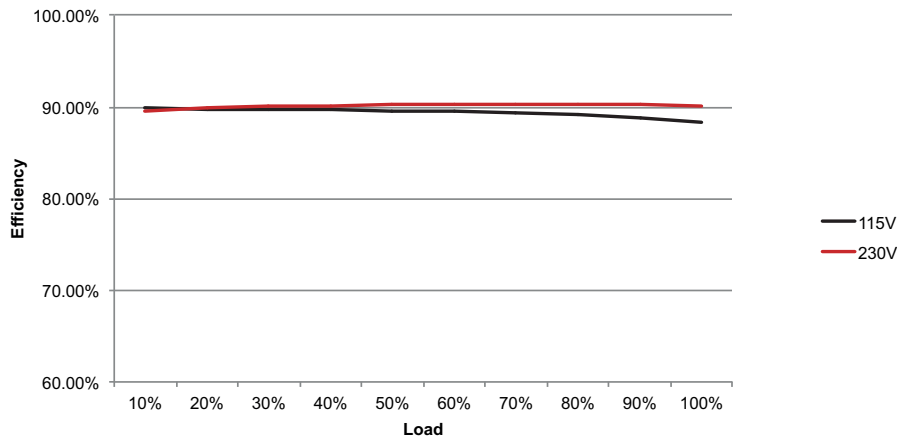


### General

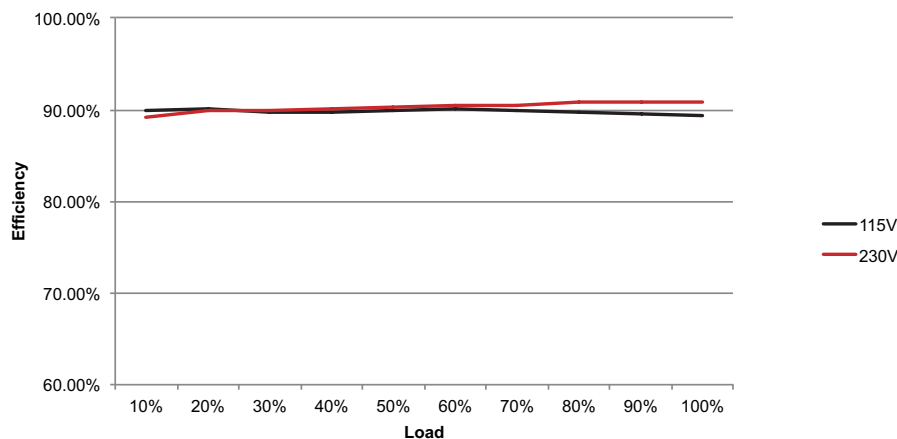
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	88			%	See curves.
Isolation: Input to Output Input to Ground Output to Ground			4000	VAC	2 x MOPP
			1500	VAC	1 x MOPP (Class I versions only)
			500	VAC	Class I versions only
Switching Frequency		65 KHz		kHz	PWM
Power Density		4.55		W/in <sup>3</sup>	
Mean Time Between Failure		>300		kHrs	MIL-HDBK-217F at 25 °C GB
Weight		0.78 (355)		lb (g)	

### Efficiency Curves

#### ALM85US12



#### ALM85US24



### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Emissions	EN55022	Level B	Conducted & Radiated
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

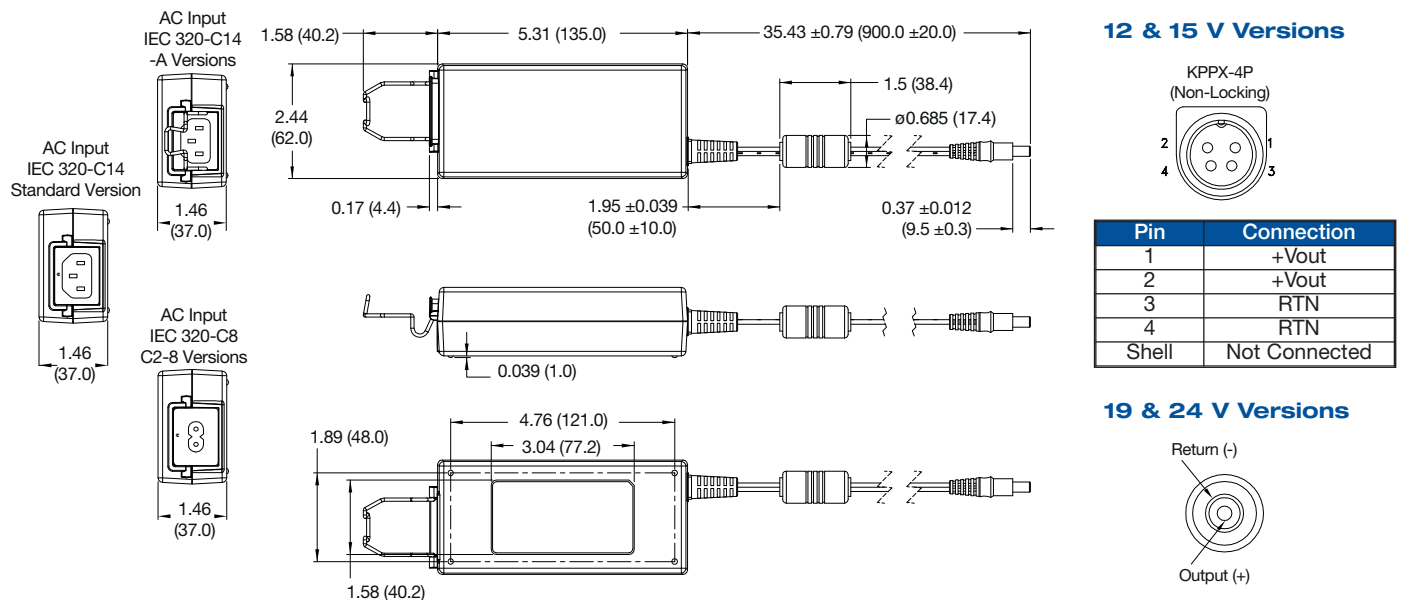
### EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3	A	±15 kV air/±8 kV contact
Radiated	EN61000-4-3	10 V/m	A	80-2700 MHz. IEC60601-1-2 Ed.4 at other frequencies
EFT/Burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	10 V	A	
Magnetic Fields	EN61000-4-8	4	A	
Dips and Interruptions	EN61000-4-11	Dip: 30% 500 ms	A/B	High Line/Low Line
		Dip: 60% 200 ms	A/B	High Line/Low Line
		Dip: 80% 5000 ms	B	
		Int: 100% 10 ms	A	
		Int: 100% 20 ms	B	
	EN60601-1-2	Dip: 30% 25 AC Cycles	A	230 VAC 100% load, 100 VAC 80%
		Dip: 60% 5 AC Cycles	A	230 VAC 100% load, 100 VAC 30%
		Int: 100% 0.5 AC Cycles	A	
		Int: 100% 1.0 AC Cycles	A	230 VAC 100% load, 100 VAC 50%
		Int: 100% 250 AC Cycles	B	

### Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1 2nd Edition	Information Technology
TUV	EN60950-1	
CB	IEC60950-1	
CE	LVD	
UL	ANSI/AAMI ES 60601-1	Medical
CSA	CSA C22.2 No. 60601	
TUV	EN60601-1	
CB	IEC60601-1	

### Mechanical Details



### Notes

- All dimensions shown in inches (mm). Tolerance is 0.02 (0.5) maximum, except output cable length.
- Weight: 0.78 lbs (355 g) approx.
- For European mains lead order part EU-MAINS-IEC for C14 versions, or EU-MAINS-8 for C8 versions.
- For UK mains lead order part UK-MAINS-IEC for C14 versions, or UK-MAINS-8 for C8 versions.
- For US mains lead order part US-MAINS-IEC for C14 versions, or US-MAINS-8 for C8 versions.
- Output connector: 12 V & 15 V: 4 pin power din with pin 1 & 2 - positive and pin 3 & 4 - return, equivalent to KPPX-4P (non-locking). 19 V & 24 V: DC barrel jack; 5.5 outer diameter, 2.5 mm inner diameter with centre positive.