LCE80 Series

AC-DC Power Supplies

XP Power

80 Watts

- Constant voltage, constant current mode
- Suitable for lighting and display applications
- Harmonics class C
- ITE & household approvals
- LPS for 12V and above
- 2″ by 4″ footprint
- Class I & class II operation
- Less than 0.5W no load input power
- 3 year warranty

GREEN XP POWER

Dimensions:

LCE80:
4.00 x 2.00 x 1.10″ (101.6 x 50.8 x 27.9 mm)

Models & Ratings

Output Power	Output Voltage	Output Current	Ripple & Noise	Efficiency[1]	Model Number
60 W	5.0 V	12.00 A	50 mV	%	LCE80US05
80 W	12.0 V	6.67 A	120 mV	%	LCE80US12
80 W	15.0 V	5.33 A	120 mV	%	LCE80US15
80 W	20.0 V	4.00 A	120 mV	%	LCE80US20
80 W	24.0 V	3.33 A	120 mV	%	LCE80US24
80 W	30.0 V	2.67 A	240 mV	%	LCE80US30
80 W	36.0 V	2.22 A	240 mV	%	LCE80US36
80 W	42.0 V	1.90 A	240 mV	%	LCE80US42
80 W	48.0 V	1.67 A	240 mV	%	LCE80US48
80 W	54.0 V	1.48 A	240 mV	%	LCE80US54

Notes

1. Minimum average efficiencies measured at 25%, 50%, 75% & 100% of 80W load and 230 VAC input.

Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	85	115/230	305	VAC	Derate load from 100% at 90 VAC to 90% at 85 VAC
No Load Input Power			0.5	W	
Efficiency		93		%	230 VAC (see fig.1 & 2)
Operating Temperature	-20		+70	°C	See derating curve (fig.3)
EMC	Conducted: EN55032, Class B, Radiated: EN55032, Class B				
Safety Approvals	CB/EN/UL/CSA for ITE and CB for household				

Input

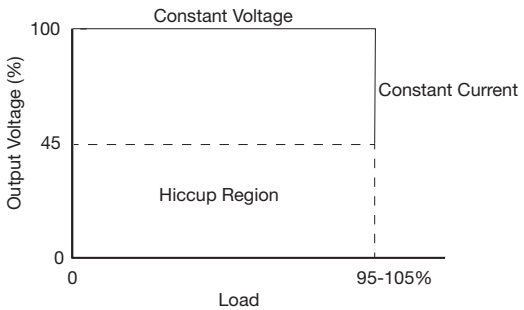
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	85	115/230	305	VAC	Derate output from 100% at 90VAC to 90% at 85VAC and 85% at 80 VAC.
Input Frequency	47	50/60	63	Hz	
Input Current - Full Load				A	115/230 VAC
Inrush Current				A	230 VAC cold start, 25 °C
Earth Leakage Current				µA	115/230 VAC/50 Hz (Typ), 264 VAC/60 Hz (Max)
No load Input Power			0.5	W	
Input Protection	F3.15 A/250 V Internal fuse fitted in line and neutral.				

Output - Main Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage - V1	5		54	VDC	See Models and Ratings table
Initial Set Accuracy			±0.5	%	50% load, 115/230 VAC
Output Voltage Adjustment	±5	±10		%	None
Minimum Load	0			A	No minimum load required
Start Up Delay			2	s	115/230 VAC full load.
Hold Up Time	20			ms	Min at full load, 115 VAC
Drift			±0.02	%	After 20 min warm up
Line Regulation			±1	%	90-264 VAC
Load Regulation			±1	%	0-95% load, 5% in constant current mode
Transient Response			4	%	Recovery within 1% in less than 500 µs or a 50-75% and 75-50% load step
Over/Undershoot			7	%	Full load
Ripple & Noise			50/120/200	mV pk-pk	5V/12-24V/30-54V. 20 MHz bandwidth and 10 µF electrolytic capacitator in parallel with 0.1 µF ceramic capacitator.
Overvoltage Protection	110		140	%	Vnom, recycle input to reset
Overload Protection	100		105	% I nom	Constant current down to 45% of nominal voltage. See fig. 1.
Short Circuit Protection					Trip & Restart
Temperature Coefficient			0.02	%/°C	

Output Characteristics

Figure 1



General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency				%	230 VAC (see fig. 2 & 3)
Isolation: Input to Output	3000			VAC	
Input to Ground	1500			VAC	
Output to Ground				VAC	
Switching Frequency	50		95	kHz	Main converter
Power Density			9	W/in³	
Mean Time Between Failure		300		kHrs	MIL-HDBK-217F, Notice 2 +25 °C GB
Weight		0.32 (145)		lb(g)	

Efficiency Vs Load

Figure 2
LCE80PS12

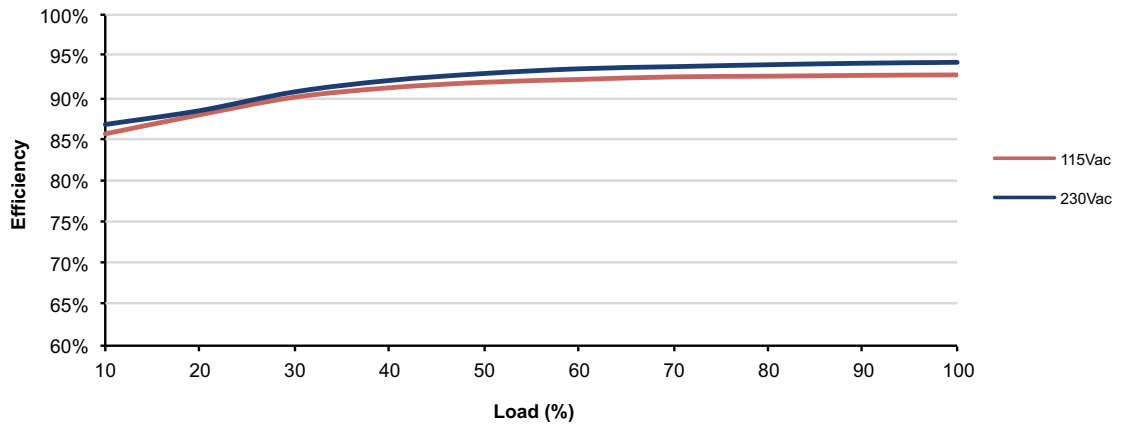
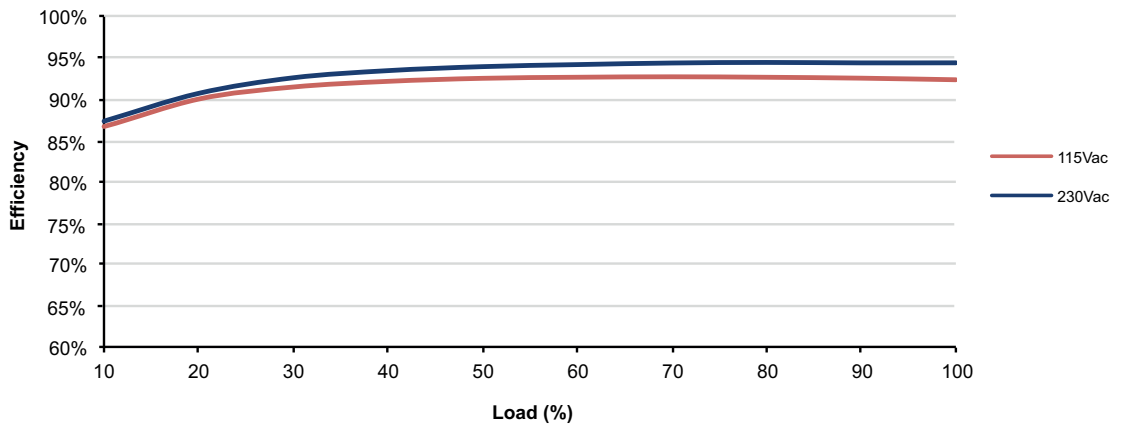


Figure 3
LCE80PS24

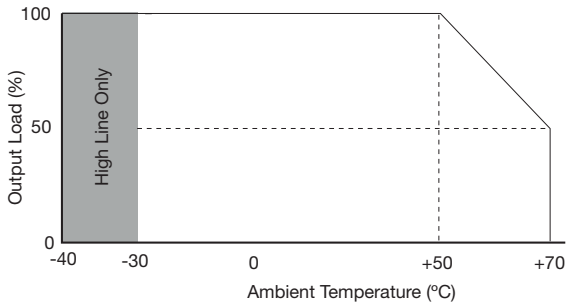


Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+70	°C	See derating curve, fig.4
Storage Temperature	-40		+85	°C	
Cooling	10			CFM	Forced-cooled > 100W
Humidity	5		95	%RH	Non-condensing
Operating Altitude			5000	m	
Shock	±3 x 30g shocks in each plane, total 18 shocks. 30g = 11ms (+/- 0.5msecs), half sine. Conforms to EN60068-2-27				
Vibration	Single axis 10-500 Hz at 2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

Temperature Derating Curve

Figure 4



EMC: Emissions

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Conducted	EN55032	Class B		
Radiated	EN55032	Class B		
Harmonic Current	EN61000-3-2	Class A, C		Class C for 50W load and above
Voltage Functions	EN61000-3-3			

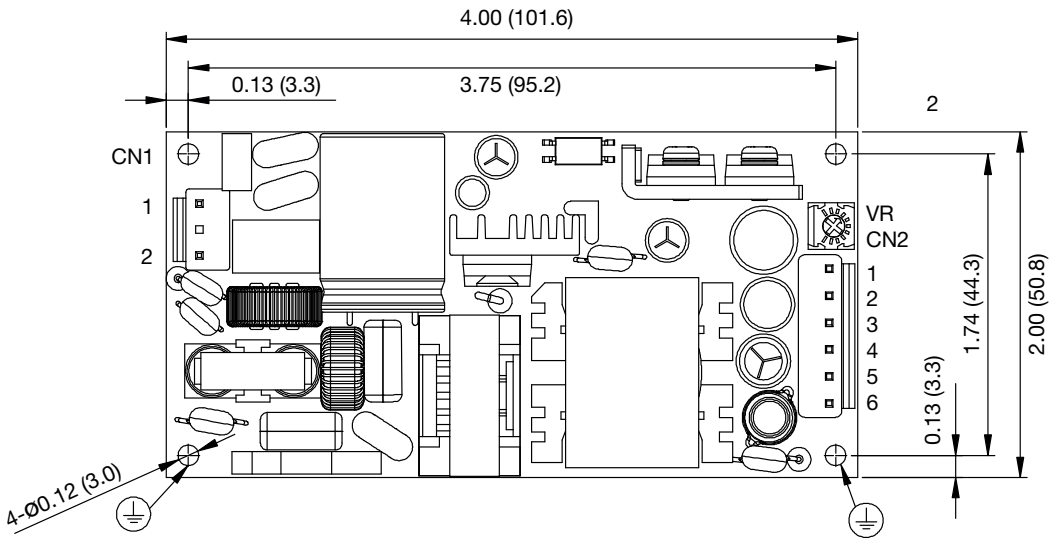
EMC: Immunity

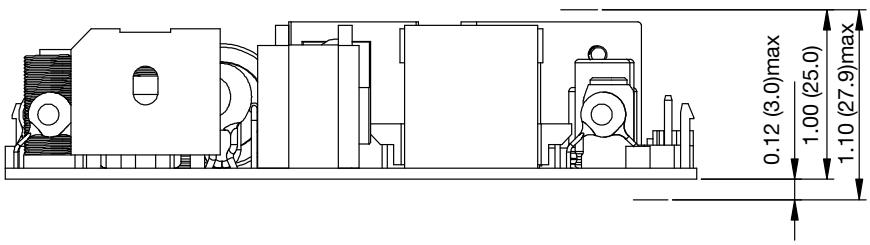
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Low Voltage PSU EMC	EN61204-3	High severity level	as below	
ESD	EN61000-4-2	3	A	
Radiated	EN61000-4-3	3	A	
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	Installation class 4	A	
Conducted	EN61000-4-6	3	A	
Magnetic Fields	EN61000-4-8	3	A	
Dips and Interruptions	EN61000-4-11 (100 VAC)	Dip >95% (0 VAC), 8.3 ms	A	
		Dip 30% (70 VAC), 416 ms	A	
		Dip >95% (0 VAC), 4160 ms	B	
	EN61000-4-11 (240 VAC)	Dip >95% (0 VAC), 10.0 ms	A	
		Dip 30% (168 VAC), 500 ms	A	
		Dip >95% (0 VAC), 5000 ms	B	

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
CB Report	IEC60950-1-1, IEC62368-1	Information Technology
UL	UL60950-1, UL62368-1	Information Technology
TUV	EN62368-1	Information Technology
CB Report	IEC60335-1	Household

Mechanical Details





CN1	
Pin 1	AC-L
Pin 3	AC-N

CN2	
Pin 1	+Vo
Pin 2	+Vo
Pin 3	+Vo
Pin 4	-Vo
Pin 5	-Vo
Pin 6	-Vo

Standard input and output connectors (CN1 & CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series and JST SVH-21/41T-P1.1 series crimp terminal or equivalent.

Mounting holes marked with ⏚ must be connected to safety earth in Class I applications or connected together in Class II application.

Notes

1. All dimensions shown in inches (mm).
   Tolerance: ±0.02 (0.5)
2. Weight: 0.32lbs (145g) approx.