

15 Watt

- Energy Efficiency Level VI
- Interchangeable Connectors
- Universal Input
- Output Voltages from 5.0 V to 48.0 V Available
- Class II Construction
- Low Cost



Dimensions:

VEB15:

2.36 x 1.71 x 1.58" (60.0 x 43.5 x 40.2 mm)

Models & Ratings

Output Power	Output Voltage ⁽¹⁾	Output Current	Total Regulation ⁽²⁾	Efficiency ⁽⁴⁾	Model Number ⁽³⁾
12 W	5.0 V	2.40 A	5%	80%	VEB15US05-XX-L6
13.5 W	9.0 V	1.50 A	5%	83%	VEB15US09-XX-L6
15 W	12.0 V	1.25 A	5%	86%	VEB15US12-XX-L6
15 W	15.0 V	1.00 A	5%	86%	VEB15US15-XX-L6
15 W	24.0 V	0.63 A	5%	86%	VEB15US24-XX-L6
15 W	48.0 V	0.32 A	5%	86%	VEB15US48-XX-L6

Notes

1. Other output voltages available, contact sales for details.
2. Total regulation includes initial set accuracy, line and load regulation.
3. Change XX in model number to define input plug type, change to '-US' for US plug, '-UK' for UK plug, '-EU' for European plug or '-AU' for Australian plug.

4. Average of efficiencies measured at 25%, 50%, 75% & 100% load and 115 VAC input.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90		264	VAC	
Input Frequency	47		63	Hz	
Input Current			0.4	A	90 VAC
Inrush Current			60	A	240 VAC, cold start at 25 °C
Power Factor					EN61000-3-2, class A
No Load Input Power			<0.1	W	
Input Protection	T1.0A/250 VAC internal fuse in line				

Output

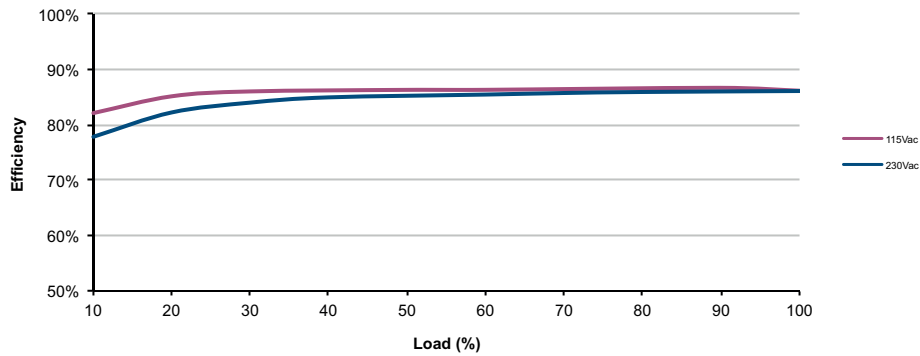
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5.0		48.0	V	See Models and Ratings table
Minimum Load	0			A	No minimum load required
Start Up Delay			3	s	
Start Up Rise Time		100		ms	
Hold Up Time		6		ms	Full load and 100 VAC
Total Regulation			5	%	See Models and Ratings table
Transient Response			4	% deviation	Recovery within <1% within 500 μ s for a 50% step load change at 0.2 A/ μ s
Ripple & Noise			2.0	pk-pk	Measured with 20 MHz bandwidth and 10 μ F electrolytic capacitor in parallel with a 0.1 μ F ceramic capacitor
Short Circuit Protection					Trip and restart (hiccup mode)
Temperature Coefficient			0.04	%/ $^{\circ}$ C	

General

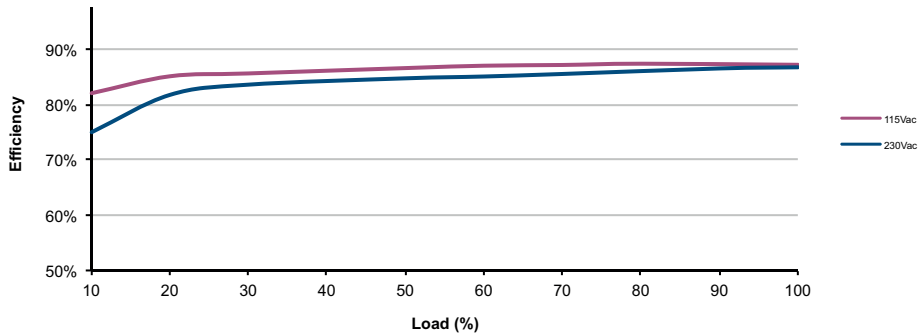
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	78		86	%	See Models and Ratings table
Isolation	3000			VAC	Input to Output
Switching Frequency	25		80	kHz	
Mean Time Between Failure		>300		kHrs	MIL-HDBK-217F at 25 $^{\circ}$ C GB
Weight		0.36 (165)		lb (g)	

Efficiency Curves

VEB15US12UK-L6



VEB15US24UK-L6



Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+60	°C	Derate from 100% load at 40 °C to 50% load at 60 °C
Storage Temperature	-40		+85	°C	
Operating Humidity	5		95	%	RH, non-condensing
Cooling					Natural convection
Shock					Able to survive 1 m drop onto concrete on each of 6 axes
Vibration	10		300	Hz	2 g 15 mins/sweep, 30 mins for each of 3 axes

EMC: Emissions

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

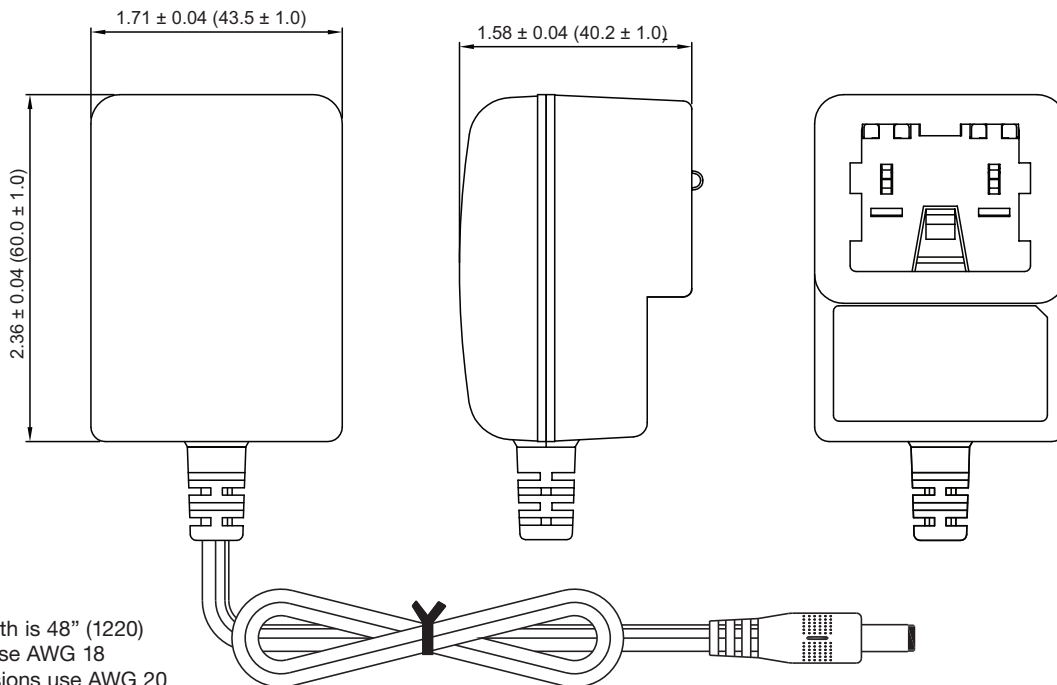
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	±4 kV contact, ±8 kV air	A	
Radiated Immunity	EN61000-4-3	3 V/m	A	
EFT/Burst	EN61000-4-4	Level 2	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted Immunity	EN61000-4-6	3 V	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	
Dips and Interruptions	EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B			

Safety Approvals

Phenomenon	Standard	Notes
CB Report	IEC60950-1	
UL	cUL60950-1	Approved as limited power source (LPS)
EN	EN60950-1	

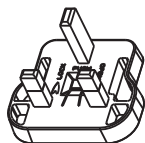
Mechanical Details



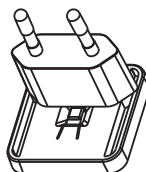
Output Cable Length is 48" (1220)
 5V & 9V versions use AWG 18
 12V, 15V & 24V versions use AWG 20
 48V version uses AWG 22

Optional AC Input Connectors

UK-Type



EU-Type



US-Type



Australia



Required model number suffix:

Add '-UK' suffix

Add '-EU' suffix

Add '-US' suffix

Add '-AU' suffix

Notes

1. All dimensions are in inches (mm). Tolerance is ± 0.04 (± 1.0), except output cable length is +4, -0 (+100, -0)
2. Weight: 0.36 lbs (165 g)
3. Output connector is 0.22 (5.5) outer diameter barrel, 0.10 (2.5) inner diameter barrel with centre positive (+) and outer negative (-). Length is 0.433 (11.0)
4. Additional mains plugs can be ordered separately. Part numbers are: VEB AC PLUG -UK, VEB AC PLUG -EU, VEB AC PLUG -US or VEB AC PLUG -AU