15 Watts
VEB15 Series



- Energy Efficiency Level V
- CEC2008, EISA2007 & ErP Compliant
- Interchangeable Connectors
- Universal Input
- Output Voltages from 5.0 V to 48.0 V
- Class II Construction
- Low Cost

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 0.4 A max at 100 VAC
Inrush Current	• 60 A max at 240 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2, class A
No Load Input Power	• <0.2 W
Input Protection	• Internal T1.0A/250 V fuse in line

Output

Output Voltage	• See table
Minimum Load	• No minimum load required
Start Up Delay	• 3 s max
Start Up Rise Time	• 100 ms typical
Hold Up Time	• 6 ms typical at full load and 100 VAC
Total Regulation	• See table
Transient Response	• 4% max. deviation, recovery to <1% within 500 µs for a 50% step load change at 0.2 A/µs
Ripple & Noise	• 2.0% pk-pk max, 20 MHz bandwidth
Overvoltage Protection	• Not fitted
Overload Protection	• 120-200%, auto recovery
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.04 %/°C

General

Efficiency	• See table
Energy Efficiency	• Level V
Isolation	• 3000 VAC Input to Output
Switching Frequency	• 25-80 kHz, variable
MTBF	• >330 kHrs per MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• 0 °C to +60 °C, derate linearly from 100% load at 40 °C to 50% load at 60 °C
Cooling	• Natural convection
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Shock	• 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 & Safety

Emissions	• EN55022, level B conducted & radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, ±4 kV contact, ±8 kV air, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2, Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A
Dips & Interruptions	• EN55024 100% 10 ms, 30% 500 ms, 100% 5000 ms, Perf Criteria A, A, B
Safety Approvals	• IEC60950-1, EN60950-1, UL/cUL60950-1, China Compulsory Certification (CCC), approved as Limited Power Source (LPS)

Models and Ratings

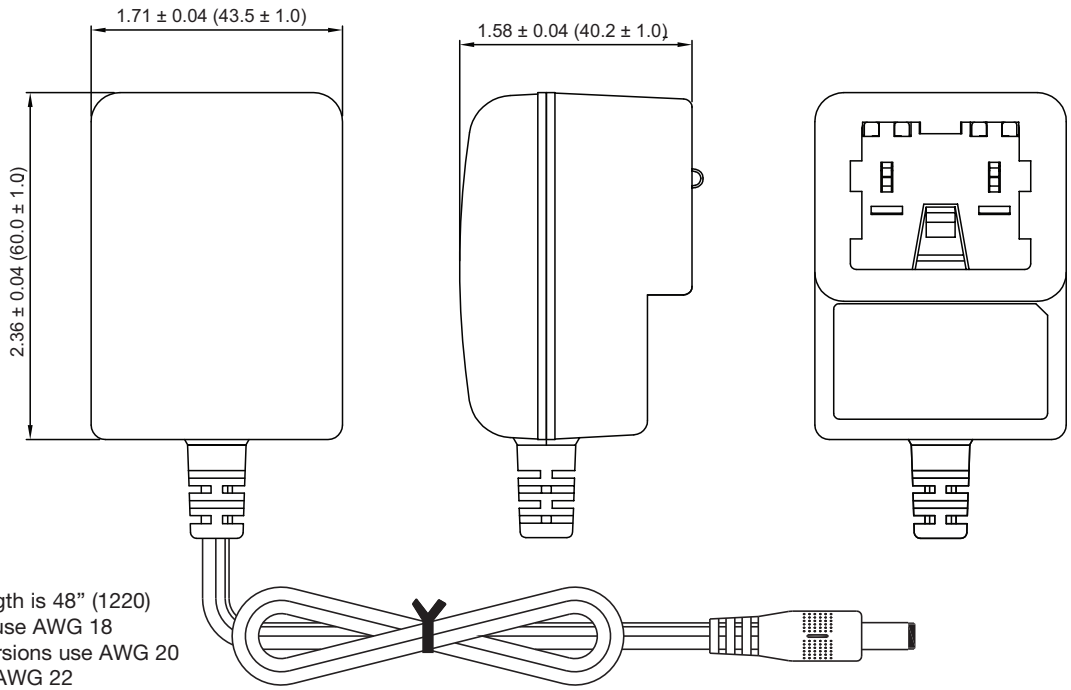
VEB15

Output Power	Output Voltage[1]	Output Current	Total Regulation[2]	Efficiency[4]	Model Number[3]
12 W	5.0 V	2.40 A	5%	78%	VEB15US05
13.5 W	9.0 V	1.50 A	5%	80%	VEB15US09
15 W	12.0 V	1.25 A	5%	81%	VEB15US12
15 W	15.0 V	1.00 A	5%	84%	VEB15US15
15 W	24.0 V	0.63 A	5%	85%	VEB15US24
15 W	48.0 V	0.32 A	5%	86%	VEB15US48

Notes

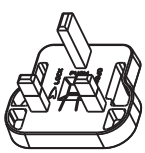
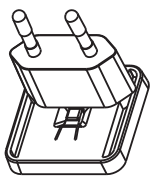
1. Other output voltages available, contact sales for details.
2. Total regulation includes initial set accuracy, line and load regulation.
3. Add suffix to model number to define input plug type, add '-US' for US plug, '-UK' for UK plug, '-EU' for European plug or '-AU' for Australian plug.
4. Average of efficiencies measured at 25%, 50%, 75% & 100% load and 115 VAC input.

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