VEC50 series

XP Power

50W External desktop

AC-DC power supplies

The 50W VEC50 are energy efficiency level VI with 0.15W standby power, these desktop/external AC-DC power supplies are limited power source (LPS) approved and are designed for high volume/low cost applications.

With class I construction the VEC50 are fitted with an IEC320-C14 inlet or optional IEC320-C6 and have a voltage input range of 90 to 264VAC.

The DC lead is fitted with a centre positive 5.5 x 2.5mm barrel jack connector.



Features

- Regulated single outputs 12V to 24VDC
- Energy efficiency level VI
- CoC Tier 2
- Limited power source approved
- <0.15W standby power
- Optional inlet connector
- China compulsory certficiation (CCC) qualified
- High power density
- Low cost
- 0°C to +65°C operation
- 1 year warranty

Applications

Household appliances

Industrial electronics

Instrumentation

Technology

Dimensions

116.3 x 52.4 x 31.3mm (4.58" x 2.06" x 1.23")

More resources

Click the link or scan the code

→ xppower.com

Models & ratings

Model number	Output voltage	Output current	Total regulation	Efficiency(1)	Output power
VEC50US12	12.0VDC	4.16A	±5%	85%	50W
VEC50US15	15.0VDC	3.33A		86%	
VEC50US19	19.0VDC	2.63A		88%	
VEC50US24	24.0VDC	2.08A		88%	

Notes:

1. Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 230 VAC input.
2. For optional IEC320-C6 inlet add suffix -C6 to the part number, e.g. VEC50US24-C6. MOQs apply, contact sales for details.

VEC50 series

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	
Input frequency	47		63	Hz	
Input current		1.0/0.7		A	Measured at 115/230 VAC
Inrush current			110		230VAC, cold start at +25°C
Power factor	EN61000-3-2 Class A				
Earth leakage current			0.7	mA	264 VAC, 60 Hz
No load input power			0.15	W	
Input protection	T3.15A/250V, fuse fitted in live line				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	12		24	VDC	See models & ratings
Minimum load	No minimum load required				
Start up delay			4	s	
Start up rise time			50	ms	
Hold up time	8			ms	Full load and 115VAC
Line regulation			±0.5	%	
Total regulation			±5	%	Including initial set accuracy
Transient response			4	%	Maximum deviation, recovering to less than 1% within 500µs for 25% step load
Ripple & noise			240	mV pk-pk	Measured with 20MHz Bandwidth and 22µF electrolytic in parallel with 0.1µF ceramic capacitor.
Temperature coefficient		±0.004		%/°C	
Short circuit protection	Trip and restart (hiccup), auto resetting				
Overshoot		5		%	At turn on / turn off
Overload protection	110		170	%	
Overvoltage protection		175			Recycle mains to reset

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		89		%	
Isolation		3000		VAC	Input to output
		1500			Input to ground
	Negative output is connected to ground				Output to ground
Switching frequency		65		kHz	±10kHz
Mean time between failure		>200		khrs	MIL-HDBK-217F, 25°C GB
Weight		245 (0.54)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	0		+65	°C	Derate from 100% load at +45°C to 50% load at +65°C
Storage temperature	-20		+85	°C	
Cooling	Natural convection				
Operating humidity	5		90	%	RH, non-condensing
Shock	IEC68-2-27, 30g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2g 10 mins/sweep, 60 mins for each of 3 axes				

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

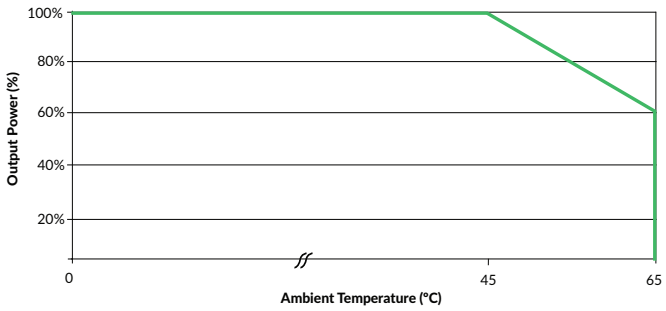
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±8kV Air, ±4kV contact	A	
Radiated immunity	EN61000-4-3	3V/m	A	
EFT/burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Inst. Class 3	A	
Conducted	EN61000-4-6	3V	A	
Magnetic fields				
Dips and interruptions	EN61000-4-11	Dip: 30% 500ms	A/B	High line/low line
		Dip: 60% 200ms	A/B	High line/low line
		Int:100% 5000ms	B	

Safety approvals

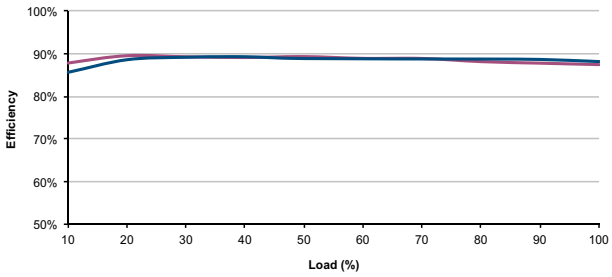
Certification	Standard	Notes & conditions
UL	UL60950-1, UL62368-1	Approved at Limited Power Source (LPS)
EN	EN60950-1, EN62368-1	
CB	IEC60950-1, IEC62368-1	
AU/NZ	AU/NZ 60950.1	
CCC	China Compulsory Certification, GB4943	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Derating curve

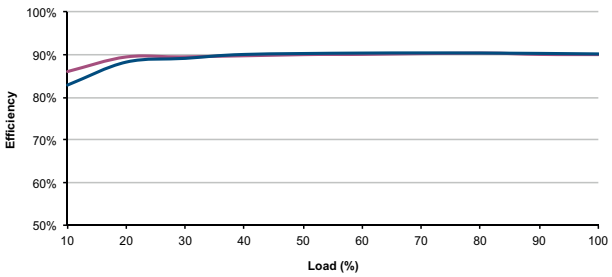


Efficiency curve

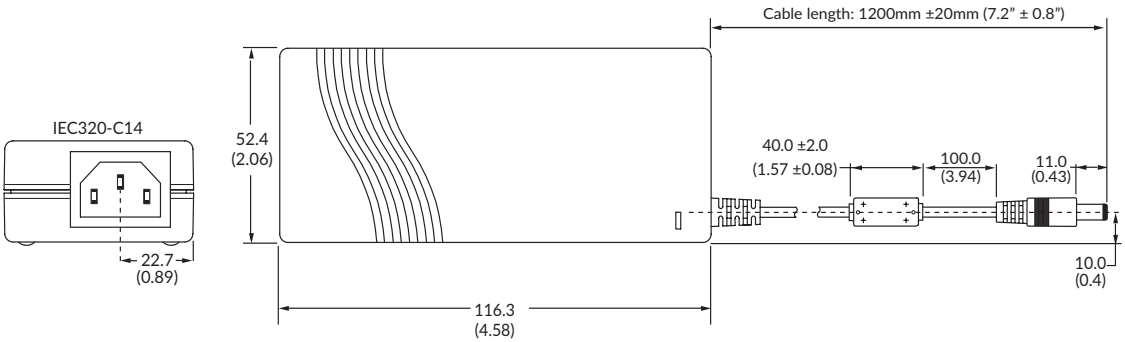
VEC50US12

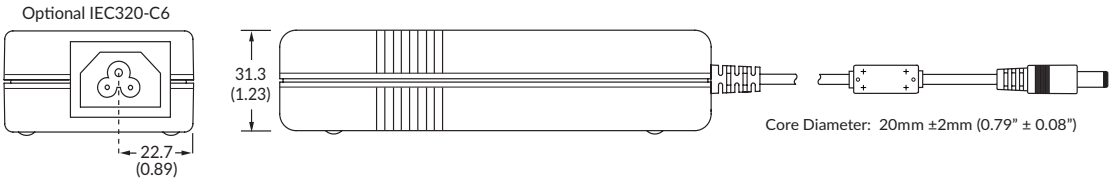


VEC50US24



Mechanical details





Power Cord for C14 inlet, Order Part:
UK - UK-MAINS-IEC
European - EU-MAINS-IEC
US - US-MAINS-IEC

Power Cord for C6 inlet, Order Part:
UK - UK-MAINS-5
European - EU-MAINS-5
US - US-MAINS-5

Notes:

1. All dimensions are shown in mm (inches), Tolerance is ±1.0 (0.04") max except output lead.
2. Weight: 245g (0.54lbs) approx.
3. Output connector is barrel type with 11mm length, 5.5mm dia. outer, 2.5mm dia. inner with center + and outer shell - polarity.