50–100 Watts
VCS Series

- Chassis Mount Industrial Supplies
- –25 °C to +70 °C Convection Cooled
- Class B Conducted & Radiated Emissions
- Output Voltages from 5 V to 48 V
- <0.5 W No Load Input Power
- Low Cost

GREEN XP POWER

Specification

Input

Input Voltage	• 85-264 VAC (127-370 VDC), see derating curve
Input Frequency	• 47-63 Hz
Input Current	• VCS50: 1.1 A, VCS70: 1.4 A, VCS100: 2.0 A typical at 90 VAC
Inrush Current	• 60 A max at 230 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2 Class A
Earth Leakage Current	• 1.0 mA maximum
Input Protection	• 50 & 70 W: T3.15 A/250 V 100 W: T4.0A/250 V, fuse fitted in live line
No Load Input Power	• <0.5 W

Output

Output Voltage	• See model table
Output Adjust	• ±10.0% (5 V & 12 V versions are -5% to +10%)
Initial Set Tolerance	• ±1.0%
Minimum Load	• None required
Start Up Delay	• 1 s maximum
Hold Up Time	• 10 ms min at 115 VAC and full load
Line Regulation	• ±0.5%, 90 VAC to 264 VAC input
Load Regulation	• 5 V & 12 V versions: ±1%, Others: ±0.5% 0% to 100% load
Transient Response	• Less than 4% deviation with a 50% to 75% load change at 1 A/µs. Output returns to within 1% in less than 500 µs
Ripple & Noise	• 1% maximum pk-pk, 20 MHz bandwidth
Overvoltage Protection	• 120-140% of nominal output, auto recovery
Overload Protection	• 110-150% of nominal, trip and restart
Short Circuit Protection	• Continuous trip and restart
Temperature Coefficient	• ±0.03%/°C after 20 min warm up

General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Switching Frequency	• 65 kHz typical
MTBF	• >500 kHrs to MIL-STD-217F at 25 °C, GB

Environmental

Operating Temperature	• -25 °C to +70 °C, see derating curve
Cooling	• Convection cooled
Operating Humidity	• 0-95% R.H, non-condensing
Storage Temperature	• -40 °C to +80 °C
Operating Altitude	• 3000 m
Shock	• ±3 x 30 g shocks in each plane, 30 g: 11 ms (±0.5 ms), half sine, compliant to EN60068-2-27 & EN60068-2-47
Vibration	• 10-500 Hz at 2 g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6

EMC & Safety

Emissions	• EN55022 Class B conducted & radiated
Harmonic Currents	• EN61000-3-2 class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A (note 3)
Surge	• EN61000-4-5, installation Class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• IEC60950-1, CSA C22.2 No.60950-1-03, UL60950-1, TUV EN60950-1

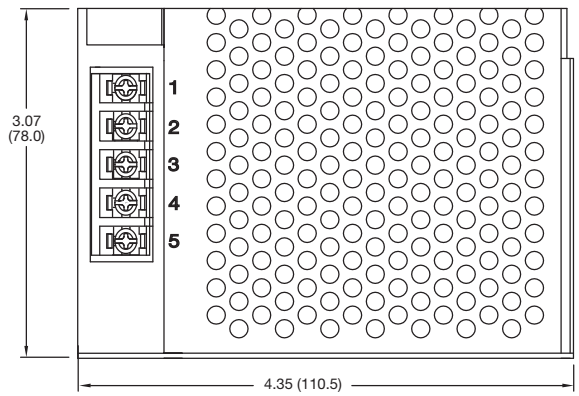
Model and Ratings

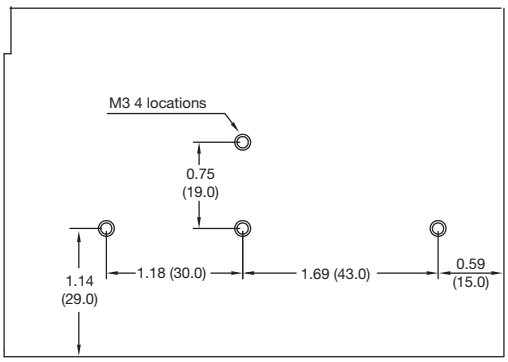
Output Power	Output Voltage	Output Current	Ripple & Noise[2]	Efficiency[1]	Model Number
40 W	5.0 V	8.00 A	50 mV	79%	VCS50US05
50 W	12.0 V	4.20 A	120 mV	85%	VCS50US12
	15.0 V	3.30 A	150 mV	86%	VCS50US15
	24.0 V	2.10 A	240 mV	88%	VCS50US24
	48.0 V	1.05 A	480 mV	88%	VCS50US48

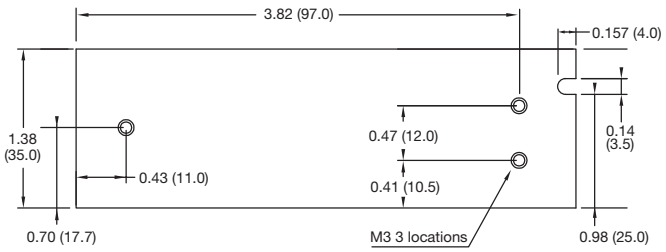
Notes

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10 °C.
3. Level 3 performance criteria A is met for loads >2%. At no load, result is performance criteria A Level 2 or less than 4% output deviation at Level 3.

Mechanical Details





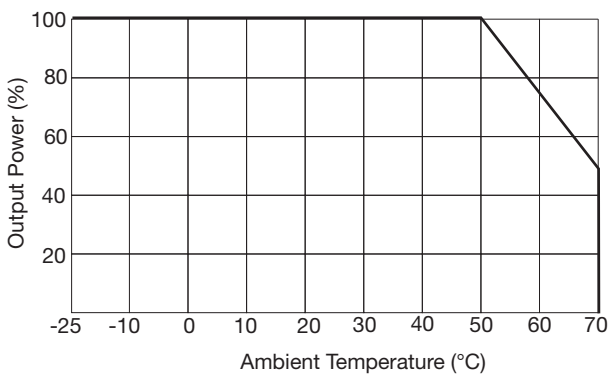


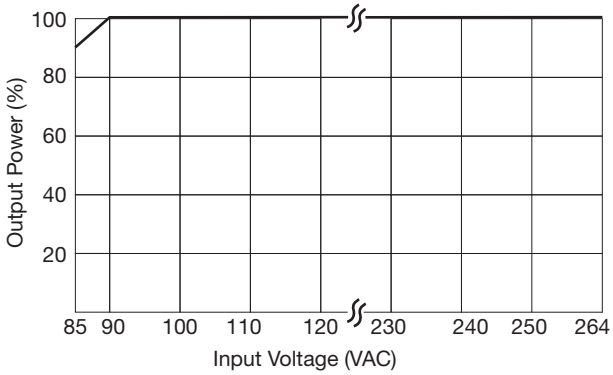
Pin	Function
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	+Vout

Notes

1. All dimensions in inches (mm)
2. Weight: 0.55 lbs (250 g) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 0.157 (4.0) from outer surface
5. Screw terminal sxizes M3

Derating Curves





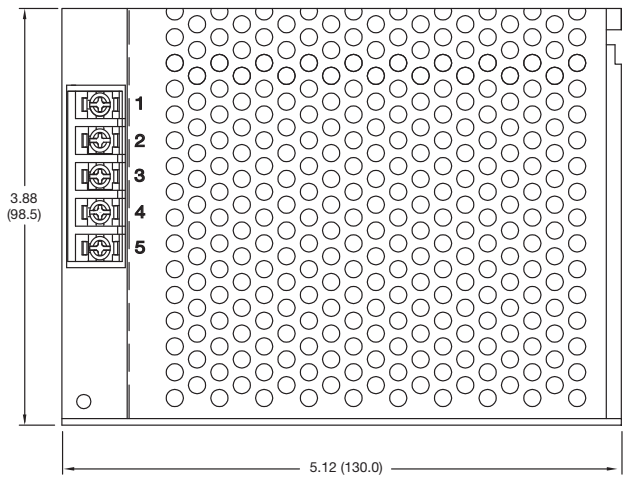
Model and Ratings

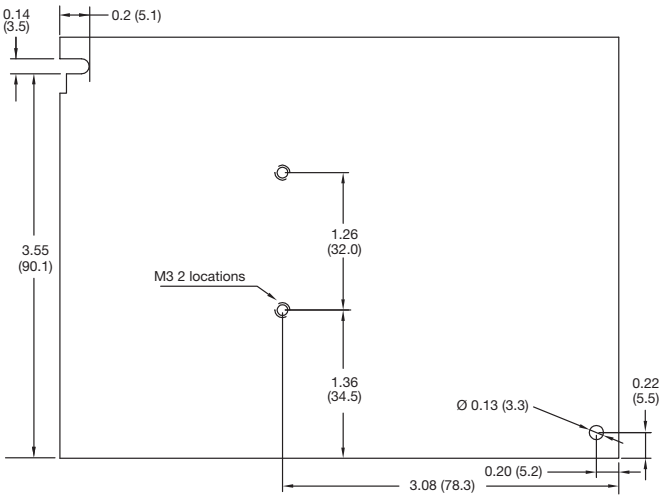
Output Power	Output Voltage	Output Current	Ripple & Noise[2]	Efficiency[1]	Model Number
50 W	5.0 V	10.0 A	50 mV	80%	VCS70US05
70 W	12.0 V	5.83 A	120 mV	87%	VCS70US12
	15.0 V	4.67 A	150 mV	87%	VCS70US15
	24.0 V	2.92 A	240 mV	87%	VCS70US24
	48.0 V	1.46 A	480 mV	87%	VCS70US48

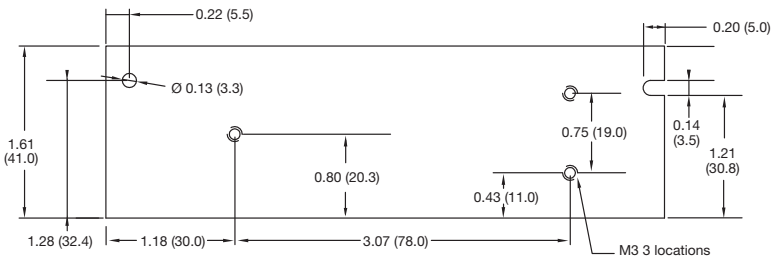
Notes

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10 ℃.
3. For all loads.

Mechanical Details





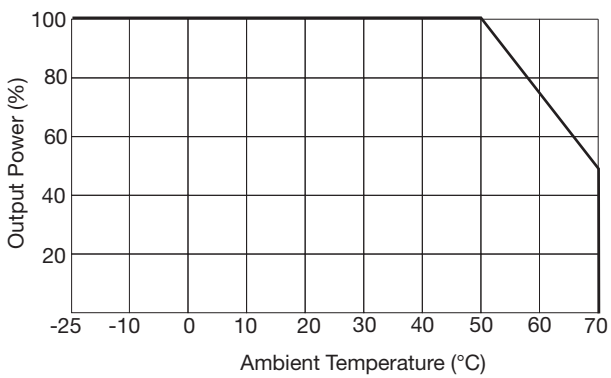


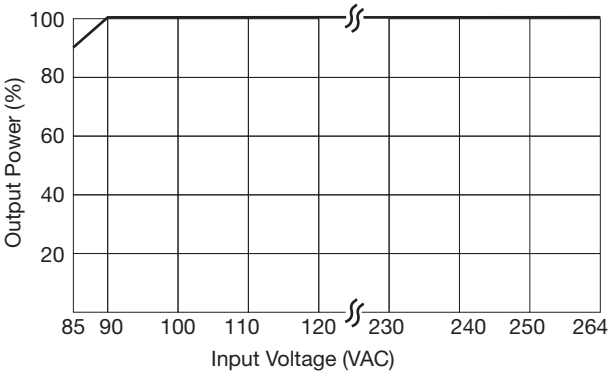
Pin	Function
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	+Vout

Notes

1. All dimensions in inches (mm)
2. Weight: 0.88 lbs (400 g) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 0.157 (4.0) from outer surface
5. Screw terminal sizes M3

Derating Curves





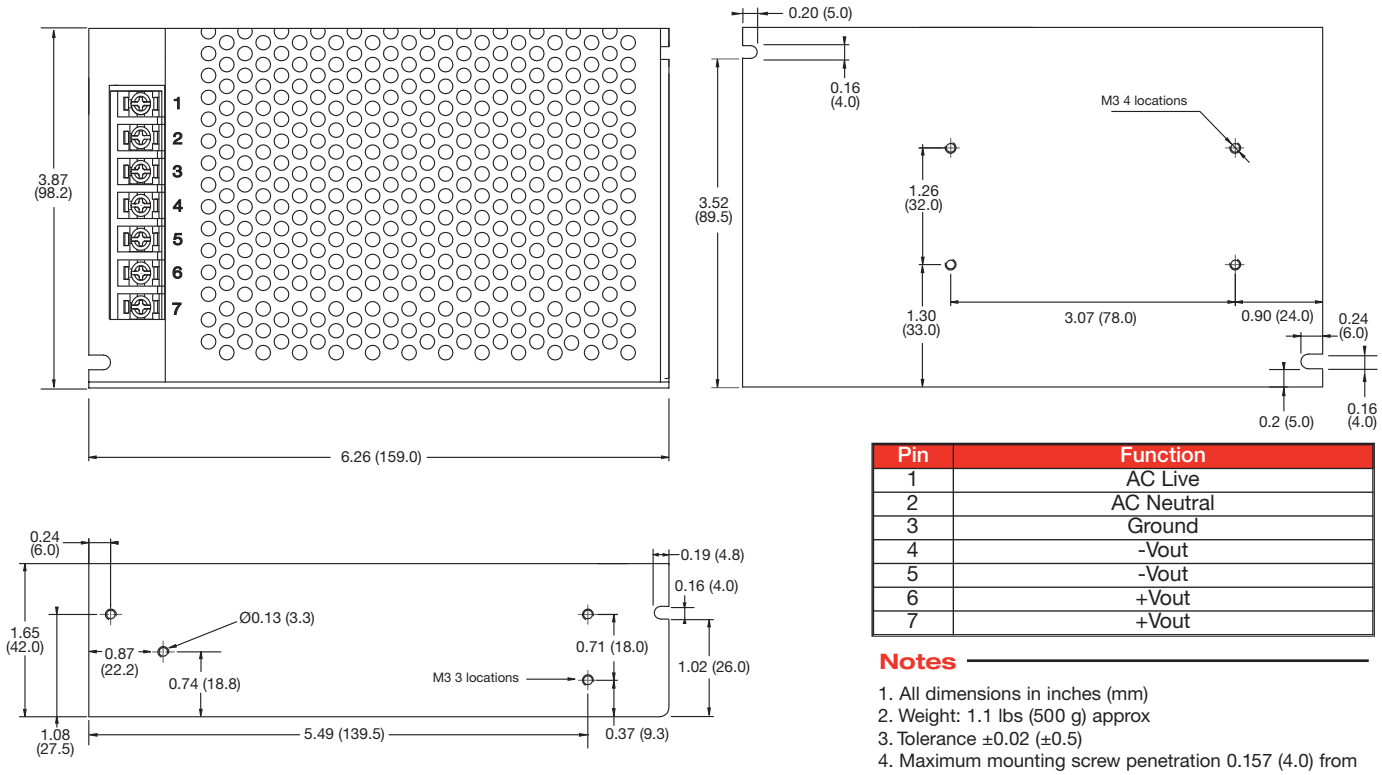
Model and Ratings

Output Power	Output Voltage	Output Current	Ripple & Noise[2]	Efficiency[1]	Model Number
70 W	5.0 V	14.0 A	50 mV	78.0%	VCS100US05
100 W	12.0 V	8.33 A	120 mV	85.0%	VCS100US12
	15.0 V	6.67 A	150 mV	86.0%	VCS100US15
	24.0 V	4.17 A	240 mV	86.5%	VCS100US24
	48.0 V	2.08 A	480 mV	88.0%	VCS100US48

Notes

1. Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
2. Ripple & Noise may exceed specified values below -10 ℃.
3. Level 3 performance criteria A is met for loads >10%. At no load, result is performance criteria A at Level 2 or less than 5% output deviation at Level 3.

Mechanical Details



Pin	Function
1	AC Live
2	AC Neutral
3	Ground
4	-Vout
5	-Vout
6	+Vout
7	+Vout

Notes

1. All dimensions in inches (mm)
2. Weight: 1.1 lbs (500 g) approx
3. Tolerance ±0.02 (±0.5)
4. Maximum mounting screw penetration 0.157 (4.0) from outer surface
5. Screw terminal sizes M4

Derating Curves