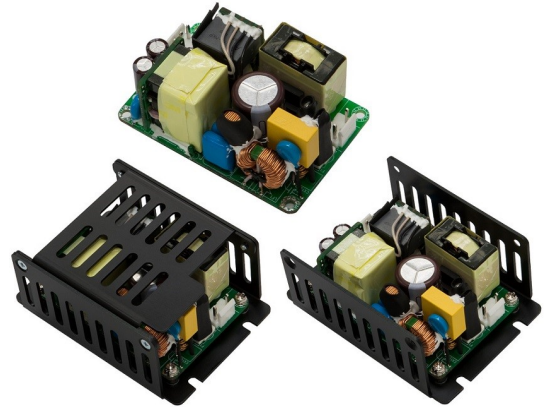


**Features:**

- Very High Power Density: 21.18W/in<sup>3</sup>
- U-Channel & Enclosed versions available
- Medical and I.T.E Approvals
- Small 2" x 3" Package
- Efficiencies up to 92%
- Suitable for BF Applied Part Applications
- Meets DoE Level VI Requirements
- No Load Power Consumption <150 mW
- Wide Operating Temperature Range from -20°C to +70°C<sup>1</sup>



**Description:**

The PPWAM150 series of single output AC/DC converters is designed for use in both medical and industrial applications. Available in eight different standard output voltages spanning most of the SELV range, this power dense 2"x3" platform offers up to 150W of continuous throughput whilst maintaining Class B emissions compliance and DoE Level VI efficiency. Open frame, U-Channel, and enclosed versions are available.

Model Number <sup>3</sup>	Output Voltage	Maximum Load with Convection Cooling	Maximum Load with 10CFM Forced Air	Ripple & Noise (Vp-p) <sup>4</sup>	Output Regulation	Total Power (Convection)	Total Power (Forced Air)
PPWAM150-12A	12V	8.34A	12.5A	120mV	±3%	100W	150W
PPWAM150-13A	15V	6.67A	10.0A	240mV	±3%	100W	150W
PPWAM150-13-1A	18V	5.56A	8.34A	240mV	±3%	100W	150W
PPWAM150-14A	24V	4.17A	6.25A	240mV	±3%	100W	150W
PPWAM150-15A	28V	3.58A	5.36A	280mV	±2%	100W	150W
PPWAM150-17A	36V	2.78A	4.17A	300mV	±2%	100W	150W
PPWAM150-18A	48V	2.09A	3.13A	300mV	±2%	100W	150W
PPWAM150-19A	54V	1.86A	2.78A	300mV	±2%	100W	150W

**NOTES:**

1. See derating curves on the third page for operation above 50°C (forced air) and 40°C (convection only)
2. Testing isolation with an AC generator is not recommended. Either perform isolation testing with a DC voltage, or consult with our engineering staff for AC test considerations.
3. Model number ending with "A" indicates open frame format.  
Replace "A" with "B" to indicate U-channel format.  
Replace "A" with "C" indicate enclosed format.
4. Measured at 20MHz bandwidth with a 47µF electrolytic and 0.1µF ceramic capacitor in parallel with the DC output rails.

### Specifications

#### Input

Input Voltage	90-264VAC
Input Frequency	47-63Hz
Input Current	2A max @ 115VAC 1A max @ 230VAC
Inrush Current	50A max @115VAC 100A max @ 230VAC
Power Factor	>0.9 (Full Load)

#### Output

Total Output Power	150W with 10CFM Forced Air 100W Convection Only
Output Voltage	See models and ratings table
Hold Up Time	10mS maximum
Efficiency	Up to 92% Average Active Mode
Output Regulation	See models and ratings table
Minimum Load	No Minimum Load

#### Protection Features

Overvoltage Protection	Latch Off
Overcurrent Protection	Hiccup Mode; OCP Threshold typically 105-160%
Short Circuit Protection	Hiccup Mode

#### Environmental

Operating Temperature	-20°C to +70°C <sup>1</sup>
Storage Temperature	-20°C to +85°C
Humidity	10% - 90% RH
Operating Altitude	<5,000m (3,000m Medical)

#### General Specifications

Dimensions Open Frame U-Channel Enclosed	2"W x 3"L x 1.18"H 2.52" x 3.57" x 1.5" 2.52" x 3.57" x 1.55"
Weight Open Frame U-Channel Enclosed	0.34 lbs. 0.44 lbs. 0.47 lbs.
No-Load Power Consumptions	<150mW
MTBF	250K hours per Tellcordia (Bellcore TR-332) at full load and 25°C ambient
Maximum Efficiency	>92%
Meets Efficiency Level	DoE Level VI

**Specifications Continued**

**Safety**

Approvals USA/Canada	UL60601-1 Ed. 3.1 UL62368-1
Approvals Europe	EN60601-1 Ed. 3.1 EN62368-1 CB to IEC62368-1 and IEC60601-1
Isolation: <ul style="list-style-type: none"> <li>• Input to Output</li> <li>• Input to Ground</li> <li>• Output to Ground</li> </ul>	4000VAC / 5656VDC <sup>2</sup> (2 x MOPP) 2000VAC / 2828VDC <sup>2</sup> (1 x MOPP) 1500VAC / 2121VDC <sup>2</sup> (1 x MOPP)
Earth Leakage Current	<100µA at 264Vac

**EMC**

**Emissions**

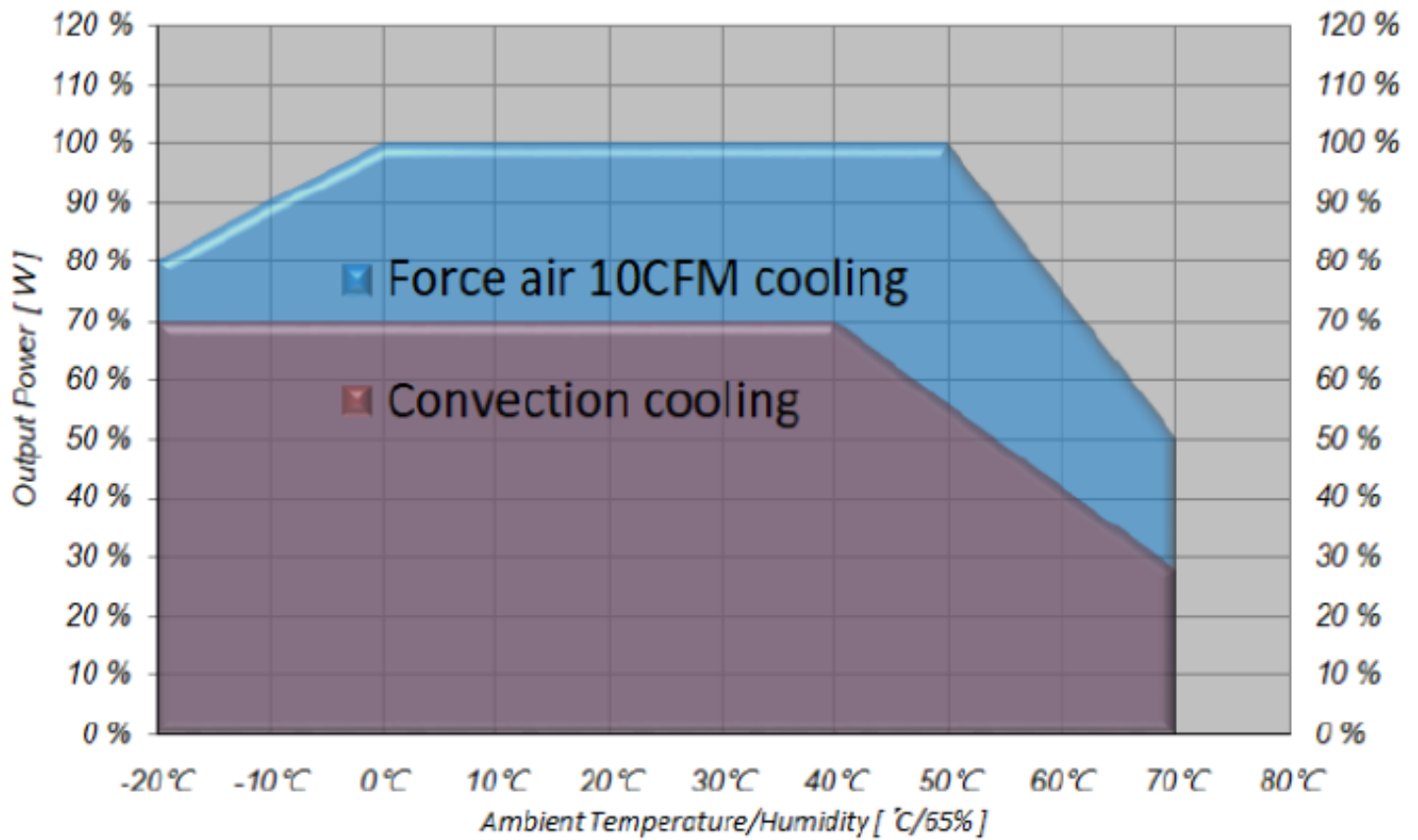
Radiated	EN55011 Class B EN55024 EN55032 Class B FCC Part 15 Class B FCC Part 18 Class B CE
Conducted	EN55011 Class B EN55024 EN55032 Class B FCC Part 15 Class B FCC Part 18 Class B CE

**Susceptibility**

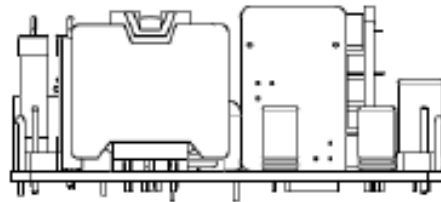
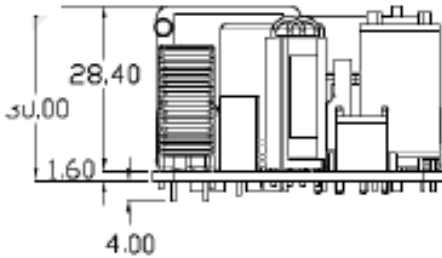
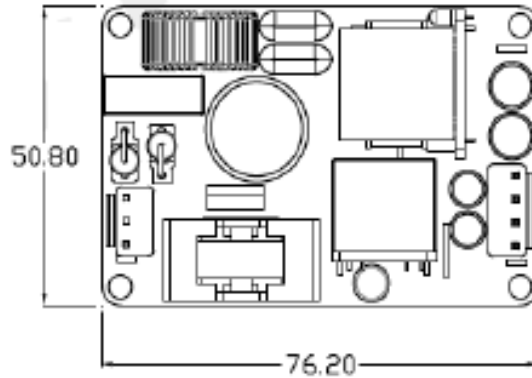
Harmonic Currents	IEC/EN60601-1-2: 2007
Voltage Flicker	IEC 61000-3-2: Class A
Electrostatic Discharge	IEC 61000-3-3
Radiated Immunity	IEC 61000-4-2: 15kV Air, 8kV contact
EFT/Burst	IEC 61000-4-3: 10V/m
Surge Immunity	IEC 61000-4-4: +/-2kV
Conducted Immunity	IEC 61000-4-5: 2005 1kV diff, 2kV com
Magnetic Field	IEC 61000-4-6: 10Vrms
Dips/Interruptions	IEC 61000-4-8: 30A/m IEC 61000-4-11: 30% reduction for 500ms, 100% reduction for 10ms

### Diagrams

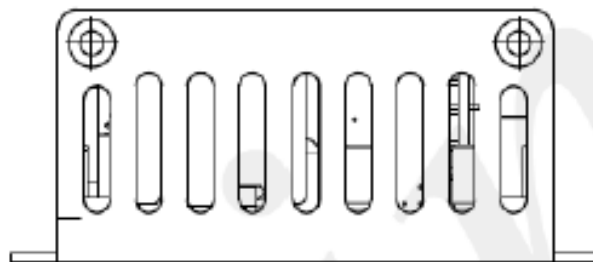
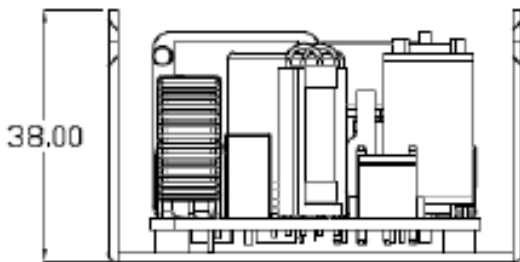
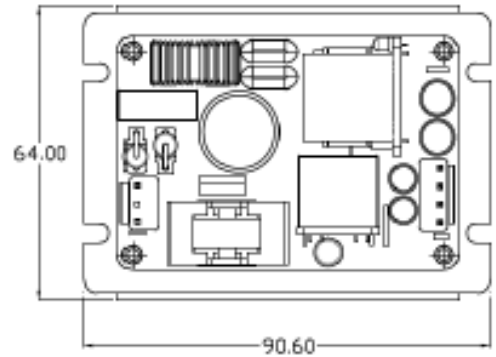
## Derating Curve



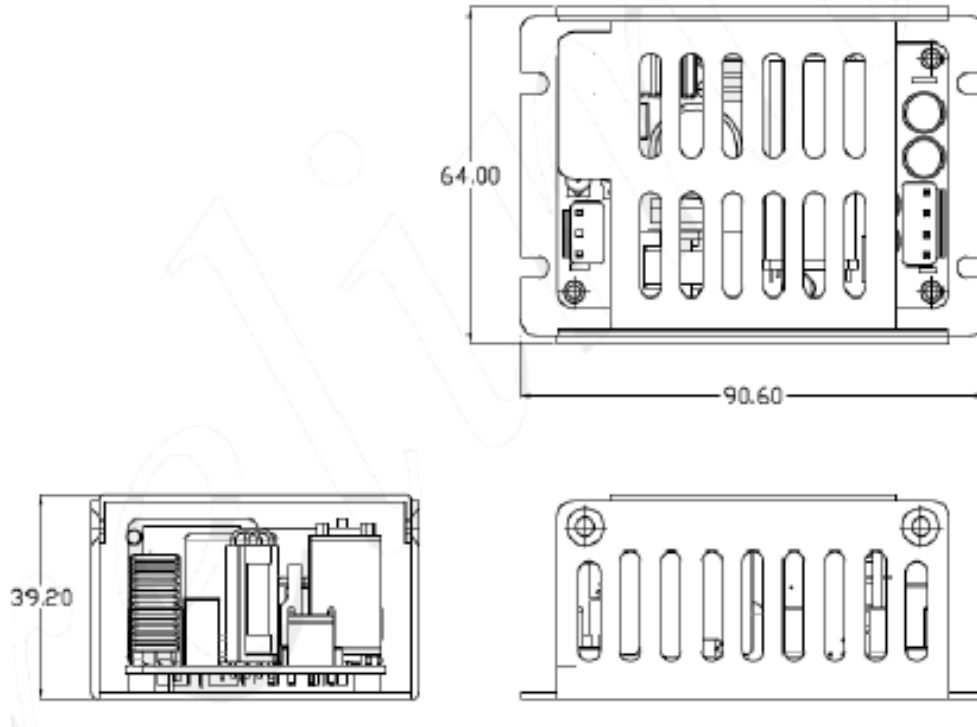
### Mechanical Drawings (Open Frame)



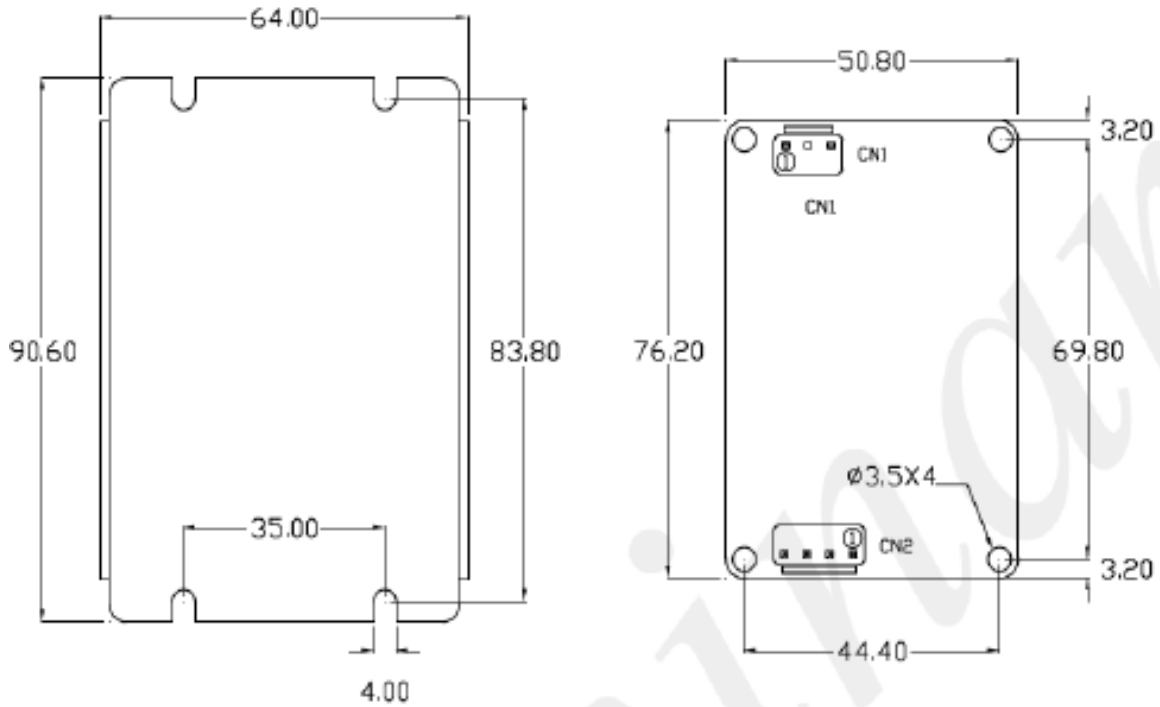
### Mechanical Drawings (U-Channel)



**Mechanical Drawings (Enclosed)**



**Outline Drawings**



### Connector Data

#### CN1 : Input Connector ( pitch : 3.96mm )

JST B3P-VH-B or equivalent

Mates with JST VHR-3N or equivalent

Pin #	Signal
1	AC Line
2	AC Neutral

#### CN2 : Main Output Connector ( pitch : 3.96mm / 3.81mm)

JST B4P-VH-B or equivalent

Mates with JST VHR-4N or equivalent

Pin #	Signal
1	GND
2	GND
3	+Vout
4	+Vout

Eurostyle P.C.B. 3.81mm Terminal Block  
16-24 AWG (1.5mm<sup>2</sup>) Wire range

Pin #	Signal
1	GND
2	GND
3	+Vout
4	+Vout