MPE-200CMU

200W, High Isolation AC/DC Power Supplies

Key Features:

- 200W Output Power
- 85-305 VAC Input
- 4,000 VAC Isolation
- Efficiency to 94%
- -40°C to +70°C Temp
- Meets EN 55032 B
- >300 kHour MBTF
- 150% Pk Load for 1 Sec
- Reinforced Insulation

Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions		Min.	Typ.	Max.	Units
Input Voltage Range	Rated Input (Certified Voltage)		100		277	VAC
	AC Input		85		305	
	DC Input		120		430	VDC
Input Frequency			47		63	Hz
Input Current	115 VAC			2.1	2.5	A
	230 VAC			1.0	1.2	
Inrush Current (Cold Start)	115 VAC			40		A
	230 VAC			80		
Power Factor	Full Load	115 VAC		0.98		--
		230 VAC		0.95		
Leakage Current	240 VAC				0.5	mA

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load	5V Output		±2		%
		Other Outputs		±1		
Line Regulation	Rated Load	5V Output		±0.5		%
		Other Outputs		±0.3		
Load Regulation	0-100% Load	5V Output		±1		%
		Other Outputs		±0.5		
Ripple & Noise (20 MHz)	5V Output				200	mV P - P
	12/24/28/36V Outputs				240	
	Other Outputs				300	
Hold-Up Time	115/230 VAC		10			ms
Temperature Coefficient				±0.03		%/°C
Temperature Derating	With Heat Sink	-40 to -30°C	4.0			%/°C
		+50 to +70°C	2.0			
	230 VAC 5V, 100 VAC Others 80%Io, No Heat Sink	-40 to -30°C	2.0			
		+50 to +70°C	2.0			
	230 VAC Others, No Heat Sink	-40 to -30°C	4.0			
		+50 to +70°C	3.0			
	100VAC 5V, 60%Io, No Heat Sink	+50 to +70°C	1.0			
Input Voltage Derating	85 - 100 VAC		2.0			%/VAC
Over Temperature Protection	Output voltage turn off, self-recovery					
Over Load Protection	Room/high temperature		110		200	%Io
	Low temperature		110			
Short Circuit Protection	Recovery time <10s after short circuit removed	5V Output	200		300	%Io
			Hiccup mode, work 200ms, turn off 10s, continuous, self-recovery			
		Other Outputs	200		300	%Io
			Hiccup mode, work 1s, turn off 10s, continuous, self-recovery			

General

Parameter	Conditions		Min.	Typ.	Max.	Units
Isolation Voltage	See Note 4	Input - Output	4000			VAC
		Input - Ground	2000			
		Output - Ground	1250			
Isolation Resistance	See Note 8		100			MΩ

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40		+70	°C
Storage Temperature Range		-40		+85	°C
Coling Method	Free Air Convection				
Operating Humidity	Non-condensing	20		90	%RH
Storage Humidity		10		95	

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHours
Safety Standards	See Model Selection Guide				
Safety Class	Class I				

MicroPower Direct
46 Eastman Street
Unit 1
Easton, MA 02375
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

MICROPOWER DIRECT

www.micropowerdirect.com

Model Selection Guide

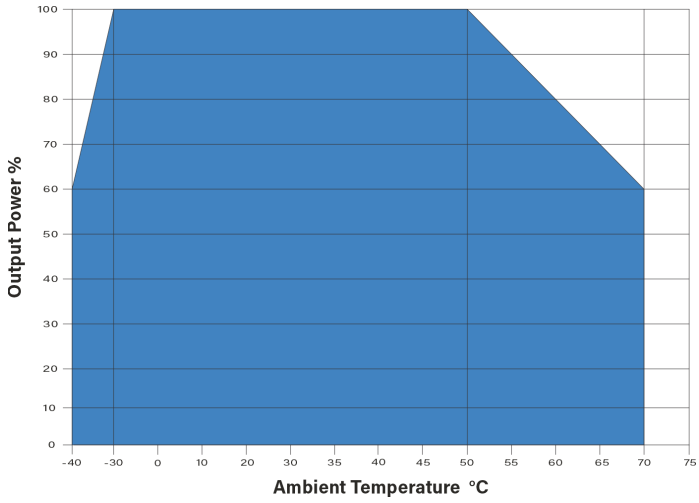
UL	Model Number	Input		Output			Over Voltage Protection (VDC) See Note 5	Output Capacitive Load (μF Max)	Efficiency (%, Typ)
		Current (A)		Voltage (VDC)	Current (A, Max)	Power (W)			
		115 VAC	230 VAC						
▪	MPE-200CMU-05	2.1	1.0	5	40	200	6.3	10000	91
▪	MPE-200CMU-12	2.1	1.0	12	16.7	200.4	16	8000	93
	MPE-200CMU-24	2.1	1.0	24	8.4	201.6	35	5000	94
	MPE-200CMU-28	2.1	1.0	28	7.15	200.2	35	4000	94
	MPE-200CMU-36	2.1	1.0	36	5.6	201.6	47	3000	94
	MPE-200CMU-48	2.1	1.0	48	4.2	201.6	60	2000	94
	MPE-200CMU-54	2.1	1.0	54	3.7	199.8	63	1000	94
	* MPE-200CMU-05, -12 have UL/cUL 62368 recognition (UL certificate). Contact factory for safety standard status of other models.								

Notes:

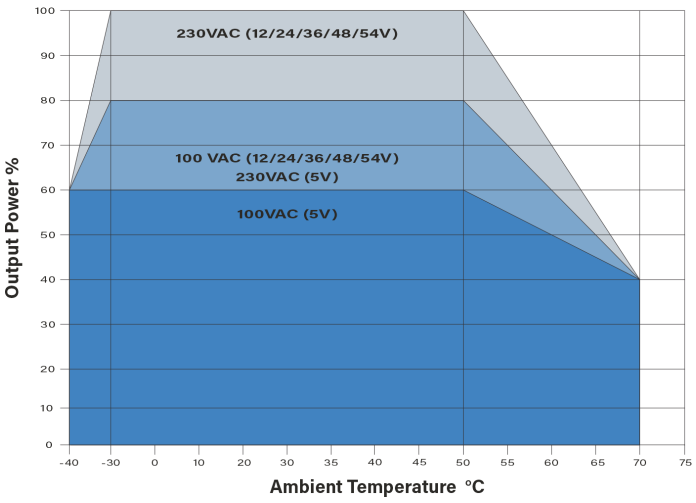
1. The "tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2. EMC performance indicators are on page 4.
3. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
4. Input-output isolation is tested for 60 seconds with a leakage current of <5 mA.
5. A temperature derating of 5°C/1000m is required for operating altitude greater than 2000m.
6. The output voltage can be adjusted by the ADJ knob. Turn clockwise to increase and counterclockwise to decrease.
7. At light load an audible noise is generated in order to improve efficiency. This does not affect performance or reliability.
8. Isolation resistance is given for input - output, input - ground and output - ground. It is tested at 500VDC, ambient temperature 25±5°C, 95%RH non-condensing humidity.

For the protective terminal cover option, add the suffix "**-TC**" to the model number (i.e. **MPE-200CMU-12-TC**).

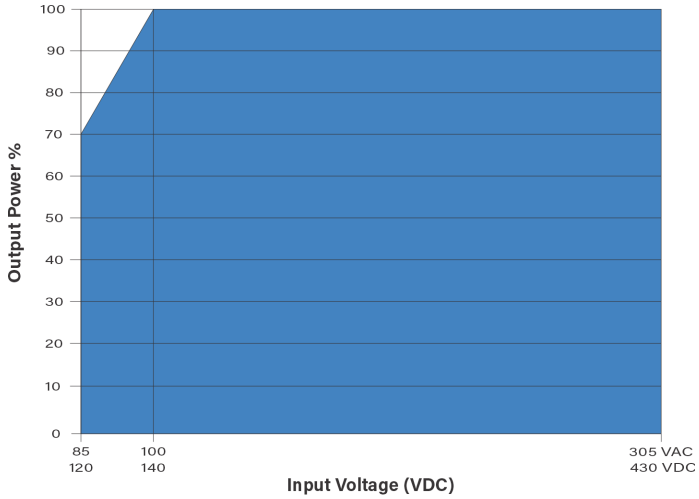
Temperature Derating: No Heat Sink



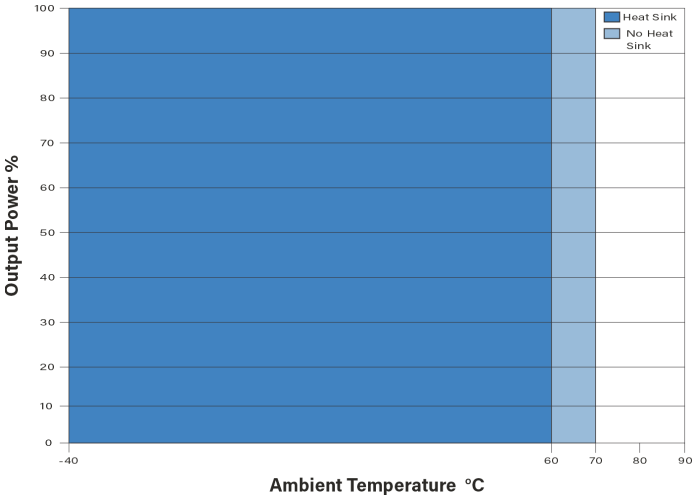
Temperature Derating with Heat Sink



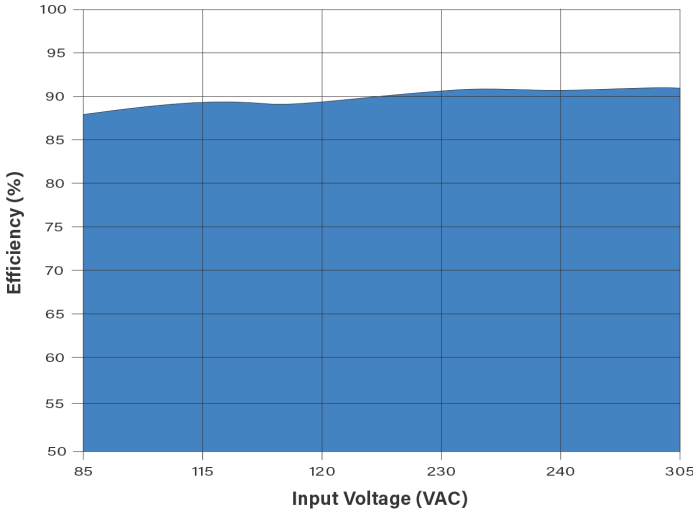
Input Voltage Derating (+25°C)



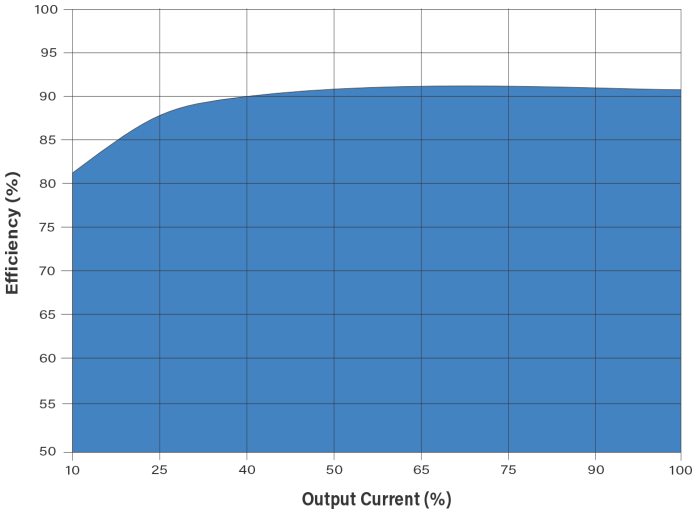
Case Temperature Derating



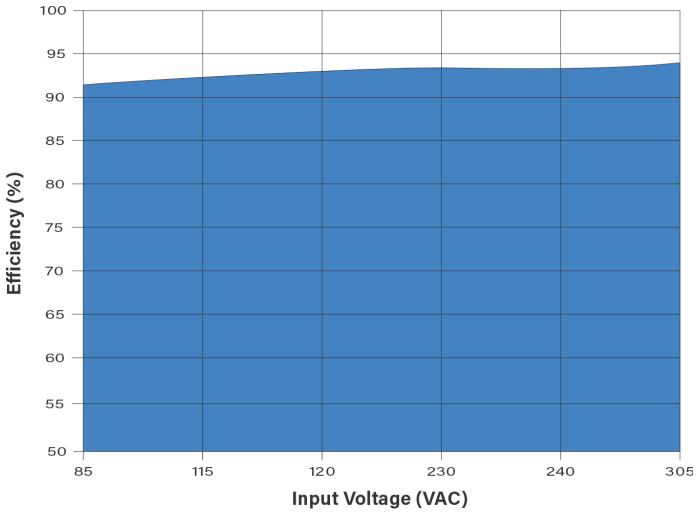
Efficiency vs Input Voltage: 5V (Full Load)



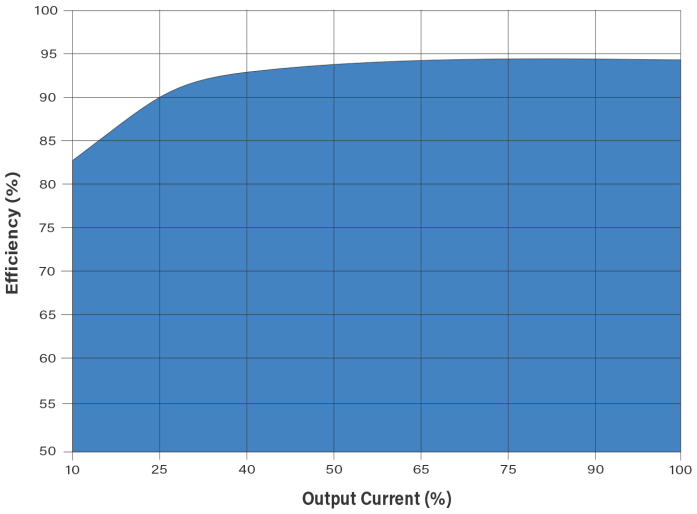
Efficiency vs Output Load: 5V (230VAC)



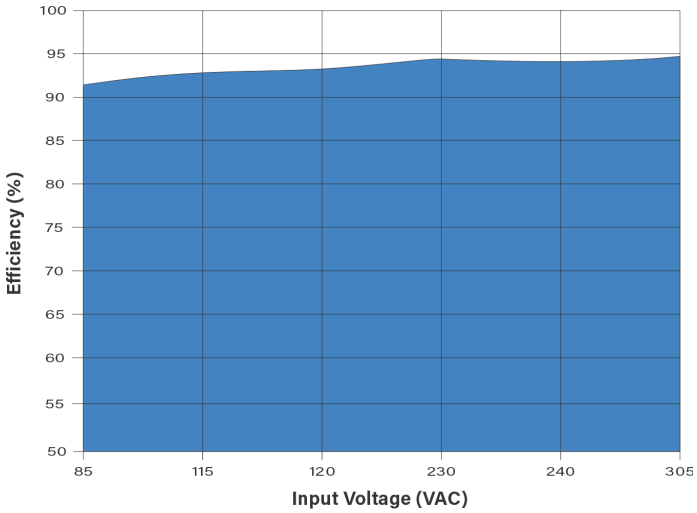
Efficiency vs Input Voltage: 24V (Full Load)



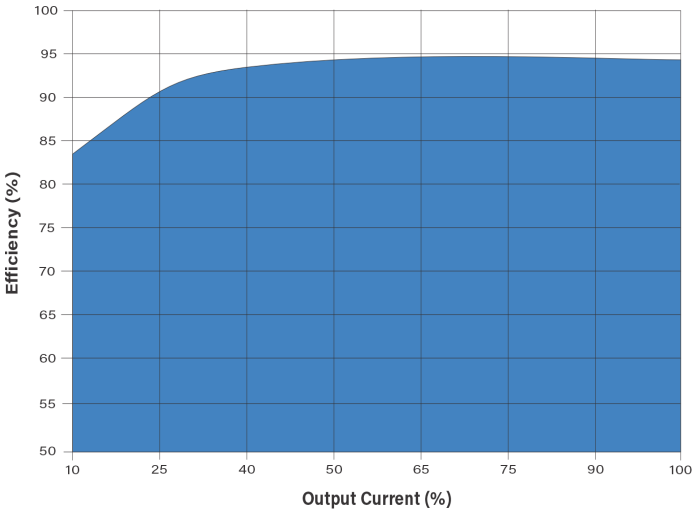
Efficiency vs Output Load: 24V (230VAC)



Efficiency vs Input Voltage: 48V (Full Load)



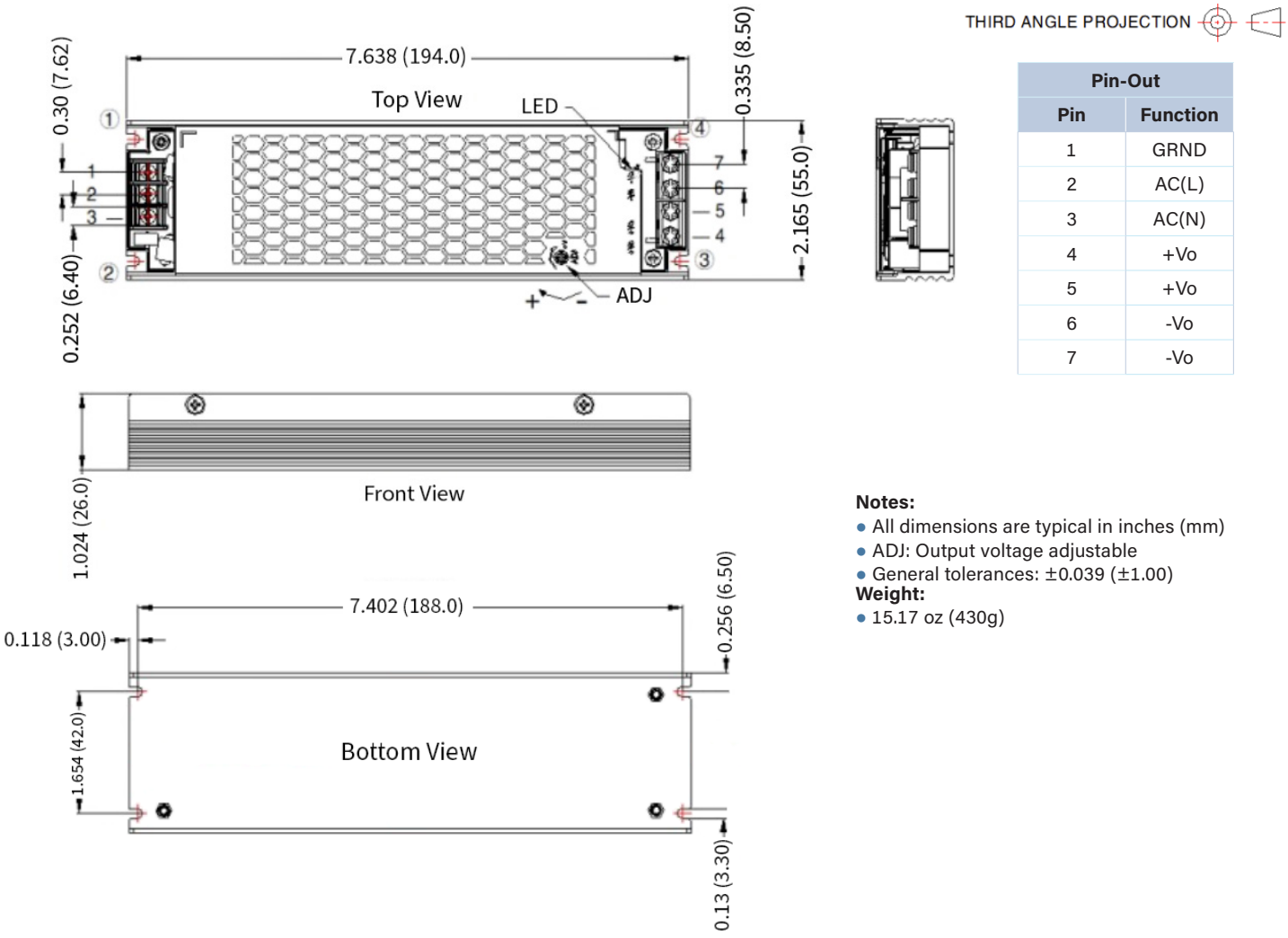
Efficiency vs Output Load: 48V (230VAC)



EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		B
Conducted Emissions (CE) (Input Port)	CISPR32/EN55032		B
Harmonic Current	IEC/EN61000-3-2		A, C, D
ESD	IEC/EN61000-4-2	A	Contact ±6KV/Air ±8KV
RS	IEC/EN61000-4-3	A	10V/m
EFT	IEC/EN61000-4-4	A	±4KV
Surge	IEC/EN61000-4-5	A	line to line ±2KV/line to ground ±4KV
CS	IEC/EN61000-4-6	A	10 Vr.m.s
Voltage Dips, Short, Interruption	IEC/EN61000-4-11	B	0%, 70%

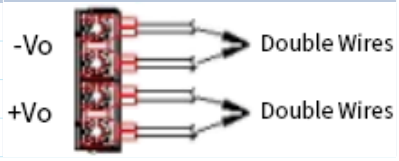
Mechanical Diagrams



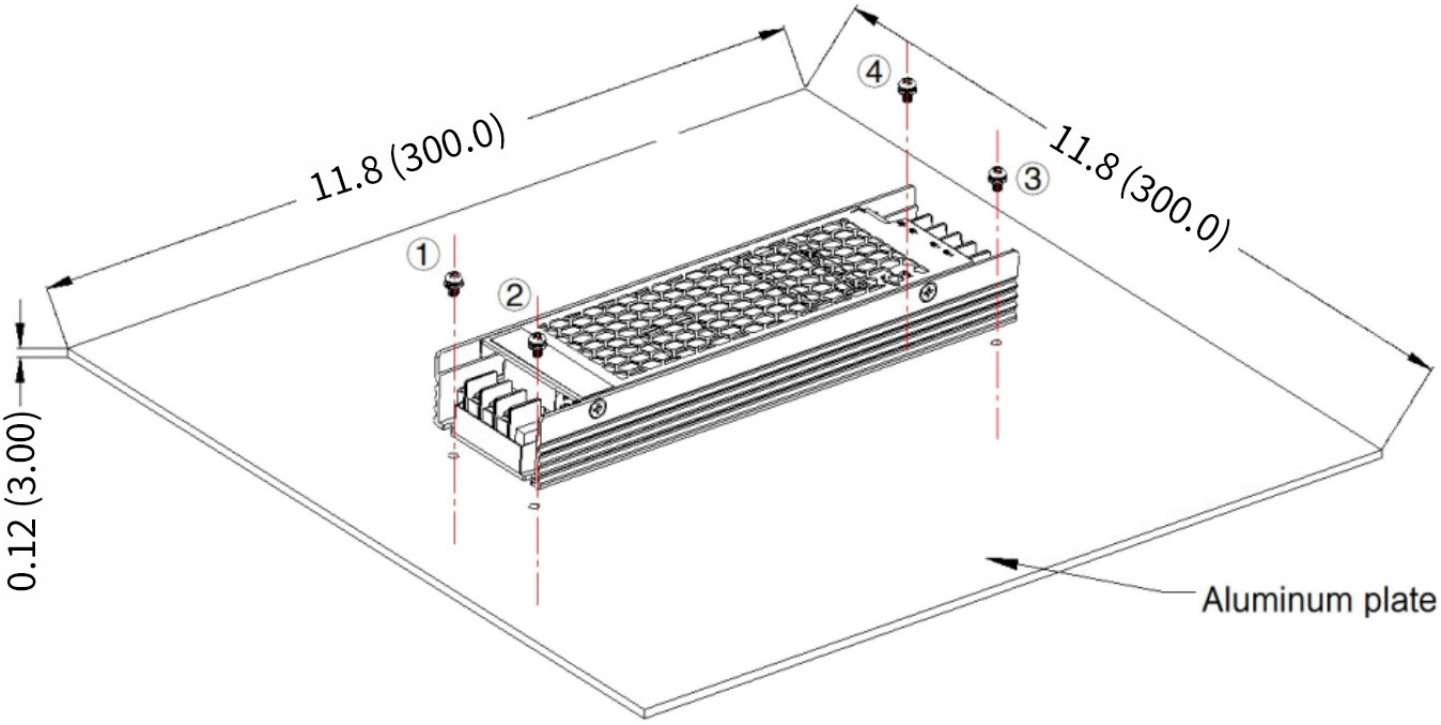
Pin-Out	
Pin	Function
1	GRND
2	AC(L)
3	AC(N)
4	+Vo
5	+Vo
6	-Vo
7	-Vo

Notes:
- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- General tolerances: ±0.039 (±1.00)

Weight:
- 15.17 oz (430g)

Connector Wires Range				
Model	Input Connector	Output Connector (Single Wire)	Output Connector (Double Wire)	Output Connector (Double Wires)
5V	22-14AWG	No Suggestion	14-12AWG	
12V		14-12AWG	18-12AWG	
Others		18-12AWG	20-12AWG	
Screw/Torque	M3.0, Max 0.5N · m	M3.5, Max 0.8N · m		

Installation Diagram



Position	Screw Spec	Torque (max)
1 - 4	M3	0.4N · m

Notes:

1. In order to meet the derating curve, the product must be installed onto an aluminum plate heat sink. The size of the suggested aluminum plate is shown above. To optimize thermal performance, it is necessary to apply thermal grease on the bottom of the product.
2. It is suggested to install the produxt with M3 combination screws, and the product must be firmly installed at the center of the aluminum plate.