

Industrial Power Supply

CHA-500 PFC Fanless Series

Product features

- Universal Input: 90-264Vac /120-370Vdc
- Built-in active PFC, PF>0.95
- High efficiency up to 93%
- 4000V withstand voltage
- Support remote sense and ON/OFF control(Optional)
- Output protections: SCP/OVP/OCP/OTP
- Operating temperature: -30°C to +70°C
- Semi-potted, fanless design
- Slim and low profile(31mm)
- 3 years warranty



Product Description

CHA-500-XP series is a 500W single-output slim type industrial power supply. With input voltage range of 90-264VAC/120-370VDC and output voltages of 12V/24V/36V/48V/55V, it can adapt to diverse load requirements and meet the needs of most industrial applications. Furthermore, the product meets international EMC and safety standards, including IEC/EN/UL62368 and GB4943. High conversion efficiency, a compact housing design, excellent heat dissipation, and comprehensive protection ensure the high reliability and stability.

CONTACT US

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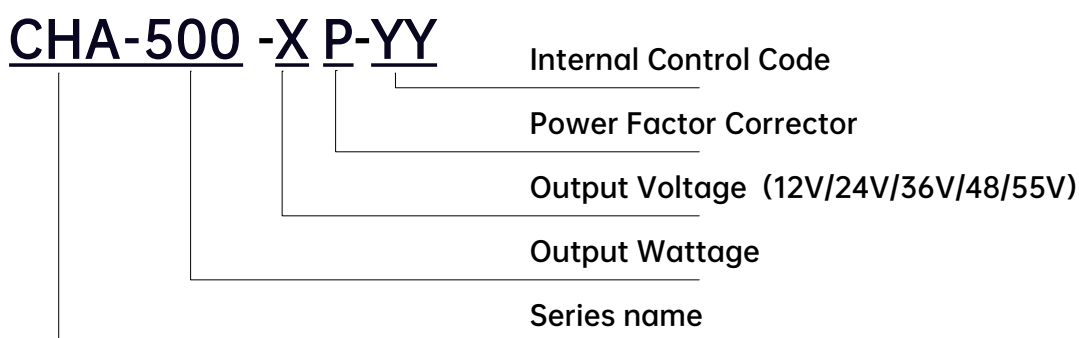
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Applications

Industrial control system, mechanical and electrical equipment, electronic instruments, industrial automation, etc.

Model Encoding



© Model List:

Model	Output power (W)	Output voltage (V _{dc})	Adjustable output voltage ^[3] (V _{dc})	Output current (A)	Ripple and noise (mV) ^[2]	Efficiency @230VAC (Typ.) ^[1]	Maximum capacitive load(uF)
CHA-500-12P	500.4	12	11.4-12.6	0-41.7	200	92%	8000
CHA-500-24P	501.6	24	22.8-25.2	0-20.9	240	93%	5000
CHA-500-36P*	500.4	36	34.2-37.8	0-13.9	240	93%	3000
CHA-500-48P	501.6	48	45.6-50.4	0-10.45	240	93%	2000
CHA-500-55P	501.6	55	52-58	0-9.12	240	93%	1000

Note: [1] All Parameters not specially mentioned are measured at rated input voltage, full load and 25°C ambient temperature.

[2] Ripple & noise are measured at 20MHz of oscilloscope bandwidth(oscilloscope probe cap and ground clamp are removed)by using a 20±2cm twisted pair-wire terminated with a 47uF electrolytic capacitor and a 0.1uF high frequency capacitor that are connected in parallel at the output end.

[3] Under any steady operating condition, the total output power shall not exceed the rated output power. When the output voltage is raised, the total output power cannot exceed the rated output power. When the output voltage is turned down, the output current cannot exceed the rated output current.

※ For the product models under development, please contact our sales team or distributor for more information.

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© Input Specification:

Parameters	Min.	Typ.	Max.	Notes
Input AC Voltage	90 V _{ac}		264 V _{ac}	
Rated Input AC Voltage	100 V _{ac}		240 V _{ac}	
Input DC Voltage	120 V _{dc}		370 V _{dc}	
Input Frequency	47 Hz		63 Hz	
Maximum Input Current			7 A	115Vac, full load
			3.5 A	230Vac, full load
Power Factor		0.96		115Vac, full load
		0.95		230Vac, full load
Leakage Current			1 mA	240Vac/50Hz
Standby power consumption			2 W	
Inrush Current		30 A		115Vac, cold start
		60 A		230Vac, cold start

© Output Specifications:

Parameters	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-1.5%		+1.5%	Others
	-2.5%		+2.5%	CHA-500-12P
Line Regulation	-0.5%		+0.5%	All
Load Regulation	-1.0%		+1.0%	Others
	-2.0%		+2.0%	CHA-500-12P
Turn On Delay Time			2000ms	115Vac/230Vac,full load
Rise Time			50ms	115Vac/230Vac,full load
Hold up Time	16ms			115Vac/230Vac,full load

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©Efficiency:

Parameters	Min.	Typ.	Max.	Notes
Efficiency@115 V _{ac}				
CHA-500-12P	89%	90%		Ambient temp. 25±5°C, full load
CHA-500-24P	90%	91%		
CHA-500-36P	90%	91%		
CHA-500-48P	90%	91%		
CHA-500-55P	90%	91%		
Efficiency@230 V _{ac}				
CHA-500-12P	91%	92%		Ambient temp. 25±5°C, full load
CHA-500-24P	92%	93%		
CHA-500-36P	92%	93%		
CHA-500-48P	92%	93%		
CHA-500-55P	92%	93%		

©Function Overview:

Parameters	Notes
Cooling method	Fanless design, conduction cooling
Remote sense	S+/S-, the remote sense compensates voltage drop on the load wiring up to 0.2V.
Remote ON/OFF control	RC + / RC - High level (4~10V): OFF; Low level (< 1.2V), open circuit, short circuit: ON;

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©Protection:

Parameters	Min.	Typ.	Max.	Notes
Over Load	110%		150%	Hiccup mode, auto recovery after fault condition is removed.
Over Voltage	110%Vo		140%Vo	Hiccup mode, auto recovery after fault condition is removed.
Over temperature (Ambient temperature)		60°C		Shut down O/P voltage, auto recovery after fault condition is removed.
Short circuit	Hiccup mode, auto recovery after fault condition is removed.			

©Safety & EMC:

Safety Category	Country/Territory	Item	Standards
UL/CUL	USA/ Canada	Safety Standard	UL 62368-1
			CAN/CSA C22.2 No. 62368-1:19
CE	Europe		EN 62368-1
CB	CB Countries		IEC 62368-1
CCC	China		GB 4943.1

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EMI Category	Country/ Territory	Item	Standards/Criteria	
FCC	USD/ Canada	Conducted Emission	FCC part 15(ANSI C63.4)	Class B
		Radiated Emission	FCC part 15(ANSI C63.4)	Class B
CE	Europe	Conducted Emission	EN 55032	Class B
		Radiated Emission	EN 55032	Class B
		Harmonic current emissions	EN 61000-3-2	Class A
		Voltage Flicker	EN 61000-3-3	
CCC	China	Conducted Emission	GB/T 9254.1	Class B
		Radiated Emission	GB/T 9254.1	Class B
		Harmonic current emissions	GB/T 17625.1	Class A

EMS Category	Country/ Territory	Item	Standards/Criteria		
CE	Europe	Electro-static Discharge	EN 61000-4-2	Air 8 kV / Contact 6 kV	Criteria A
		Radiated Susceptibility	EN 61000-4-3	80MHz-1GHz 10V/m	Criteria B
		Electrical Fast Transient	EN 61000-4-4	±2KV	Criteria B
		Surge Immunity	EN 61000-4-5	CM±4KV/DM ±2KV	Criteria A
		Conducted Emission Immunity	EN 61000-4-6	10Vr.m.s	Criteria B
		Power Frequency Magnetic Field Immunity	EN 61000-4-8	30A/m, continuous	Criteria A
		Voltage Dips, Drops and Interruptions Immunity	EN 61000-4-11	Drop 100%, 0.5 cycle	Criteria B
				Drop 20%, 250 cycle	Criteria B
				Drop 30%, 25 cycle	Criteria B
				Interrupt 100%, 250 cycles	Criteria C

Note:

The power supply is considered as a component which will be installed into a final equipment. All the EMC tests are be executed by mounting the unit on a metal plate with size 400mm*400mm*3mm. The final equipment must be re-confirmed that it still meets EMC directives.

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© General Specifications:

Parameters		Min.	Typ.	Max.	Notes
Dielectric Strength ^[4]	Input-Output	4000 V _{ac}			Last for 60s, leakage current < 10mA
	Input-PE	1800 V _{ac}			
	Output-PE	500 V _{ac}			
Insulation Resistance	Input-Output	100MΩ			Test Voltage: 500V _{dc}
	Input-PE	100MΩ			
	Output-PE	100MΩ			
Working Temp.		-30°C		+70°C	Refer to "Derating Curve"
Working Humidity		20%RH		95%RH	Non-condensing
Storage Temp.		-40°C		+85°C	
Storage Humidity		10%RH		95%RH	Non-condensing
Temp. Coefficient		-0.03%/°C		0.03%/°C	0~50°C
MTBF		100000 hours			25°C, MIL-HDBK-217F
Dimension		232*81*31mm			L*W*H
Net Weight			870g		
Packing		14PCS/12.5Kg/Carton, Carton size: 375(L)*275(W)*145(H)mm			

Note: [4] The minimum isolated voltage is 4000Vac of this product, if you use a higher testing standard, please contact our sales or FAE

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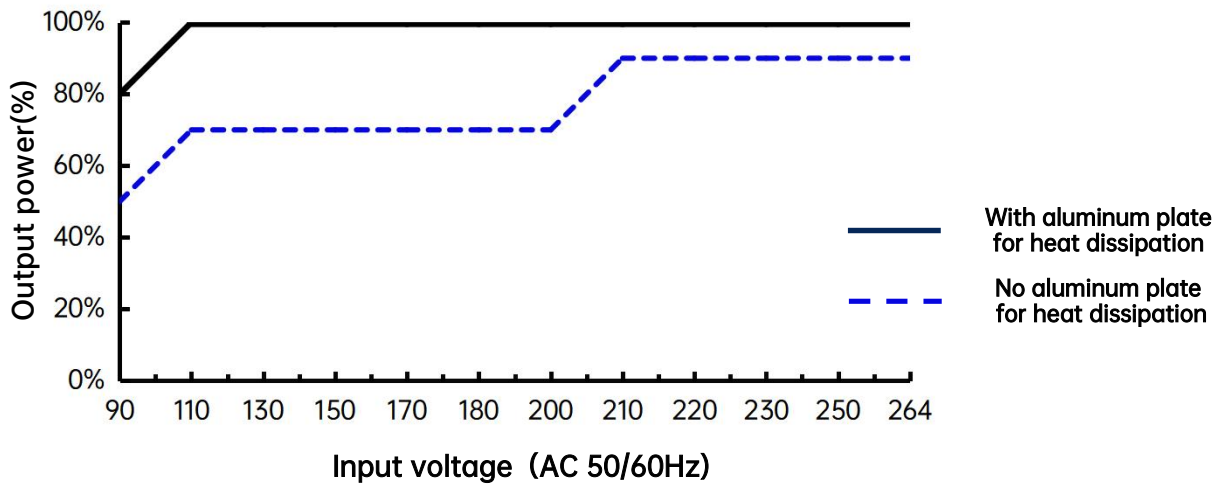
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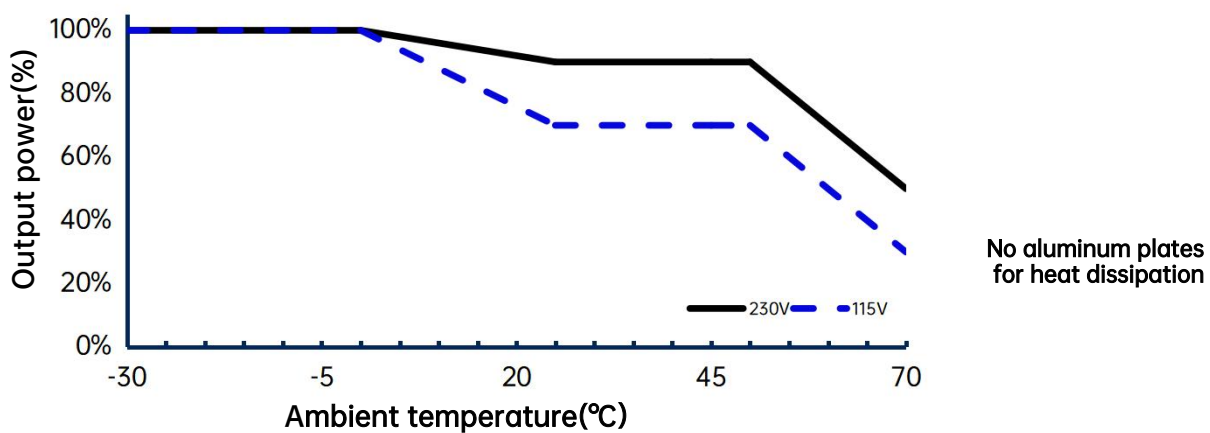
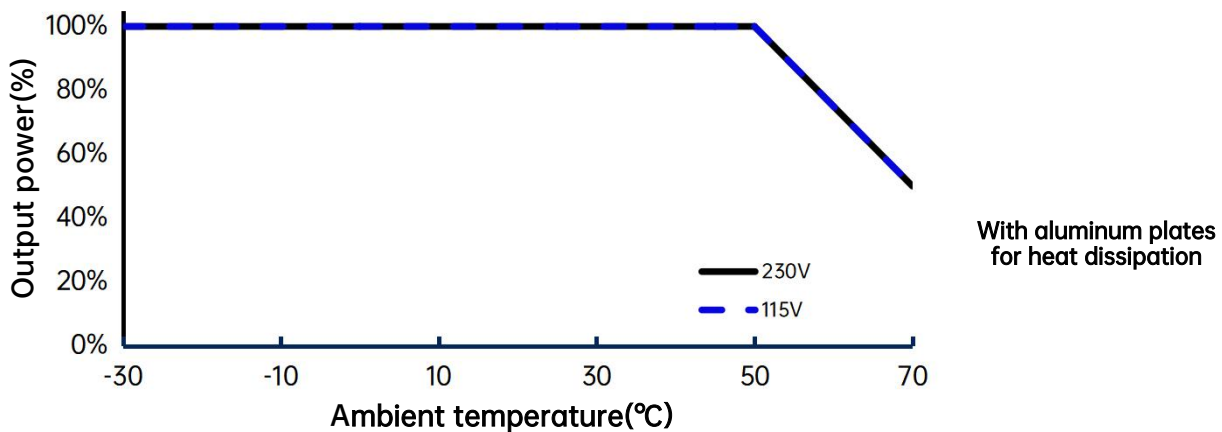


◎ Derating Curve:

Input voltage VS Output power



Ambient temperature VS Output power



Note:

1. If you need to know more detailed test data, please contact our technical support.
2. This product is suitable for use in natural air convection environments. If used in a closed environment, please contact our technical support.

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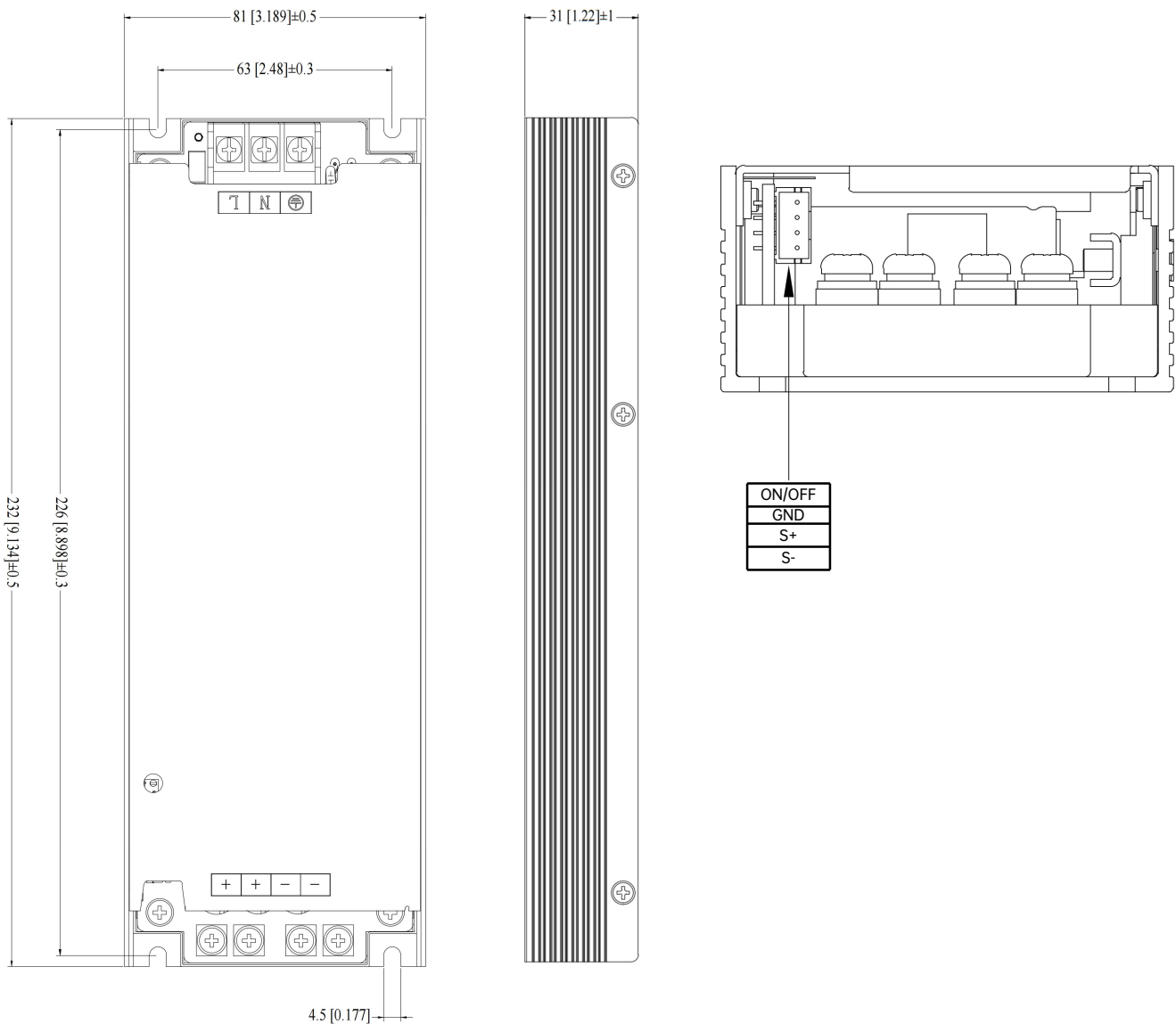
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©Mechanical Drawing:



Input and Output Terminals Description

Pin.	Function	Screw spec. & Torque(max)
L	AC/L	Screw: M3×6 Torque: 6Kgf·cm(0.6N·m)
N	AC/N	
⊕	EARTH	
V-	DC output -	Screw: M4×7 Torque: 12Kgf·cm(1.2N·m)
V+	DC output +	
RC+	Output ON/OFF control signal+	
GND	GND&Output ON/OFF control signal-	
S+	remote voltage compensation +	
S-	remote voltage compensation -	

Note:

4-M4 Mounting Hole

Mounting Instruction:

Screw:M4

Torque(max):8Kgf.cm(0.8N.m)

Penetration Depth L (max):3mm

Unit:mm

General tolerances :±0.5

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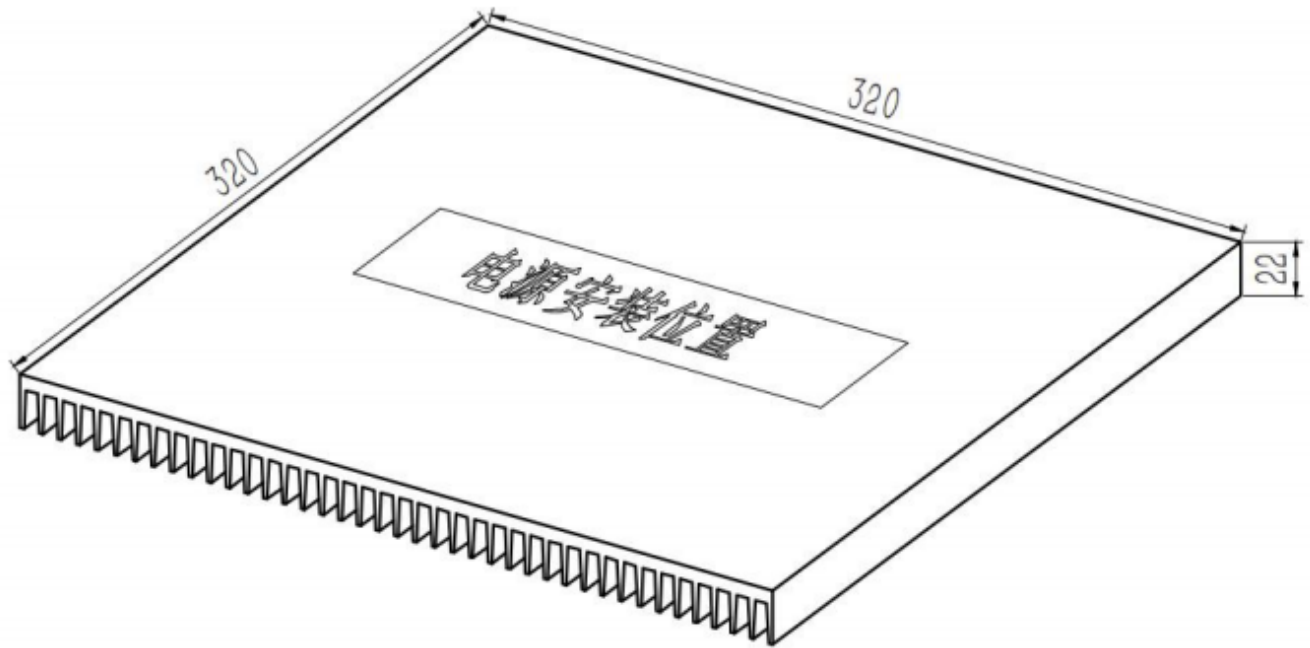
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© Installation requirements:

To ensure that this product meets the electrical performance requirements stated in the specification, it must be installed on an aluminum plate or metal housing. The recommended aluminum plate dimensions are shown in the figure below (unit: mm). Furthermore, the product must be securely mounted to the center of the aluminum plate with screws and coated with thermal grease to aid heat dissipation.



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