



Ultra Quiet CPU Cooler

CNPS9900A LED

Sales Guide

July, 2009

1. Summary



- ✓ **Powerful Cooling Performance**
- ✓ **Ultra Quiet 120mm Blue LED Fan**
- ✓ **PWM Fan Speed Control**
- ✓ **Omega Heatpipe Design for Excellent FET Cooling**
- ✓ **Super Thermal Grease ZM-STG2**
- ✓ **Versatile Compatibility**

2. Features



✓ Powerful Cooling Performance

Optimally designed pure copper fins effectively disperse heat away from the CPU via heatpipes, while the high capacity 120mm fan quickly cools the heatsink for stable operation of high performance CPUs.

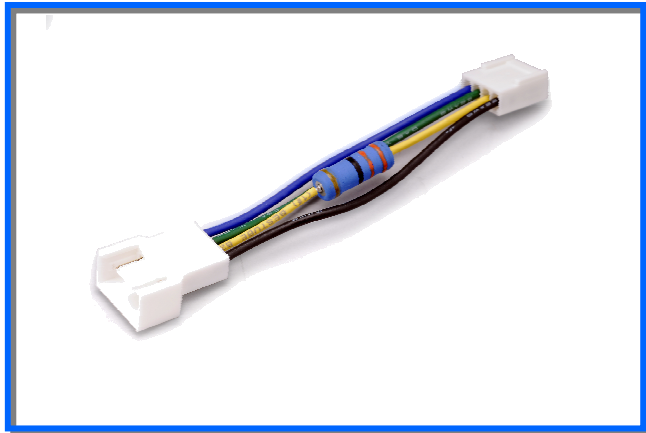
※ **Heatsink Surface Area: 5,402cm²**



✓ Ultra Quiet 120mm Blue LED fan

An ultra quiet 120mm fan is incorporated for minimized noise and Blue LEDs heighten the cool aesthetics.

2. Features



✓ PWM Fan Speed Control

The PWM(Pulse Width Modulation) Fan automatically adjusts fan speed(RPM) according to the CPU's temperature, while the included Resistor Cable(RC33P) provides the option of reducing the input voltage for overall reduction of fan speed and noise.

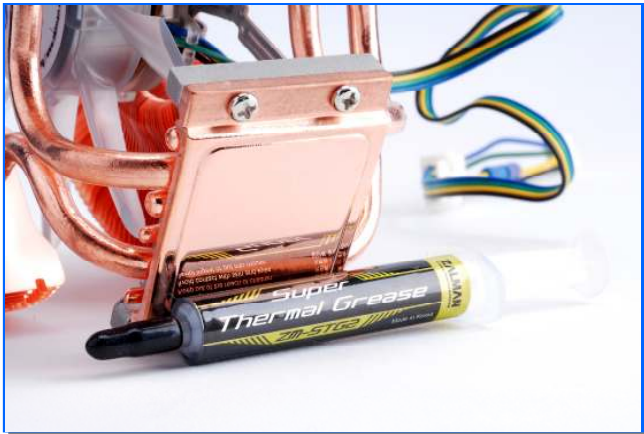
- ※ Quiet Mode (w/ RC33P): 800 - 1300RPM / 18 - 28dBA \pm 10%
- ※ Normal Mode: 1000 - 2000RPM / 19 - 38dBA \pm 10%



✓ Omega(Ω) Heatpipe Design

The CNPS9900A LED's distinctive **Omega(Ω)** design not only provides excellent CPU Cooling but also effectively cools surrounding components for excellent system stability.

2. Features



✓ High Performance Super Thermal Grease ZM-STG2

The included all new high performance thermal grease ZM-STG2 maximizes heat transfer from the CPU to the base of CNPS9900A LED for intensified cooling performance.

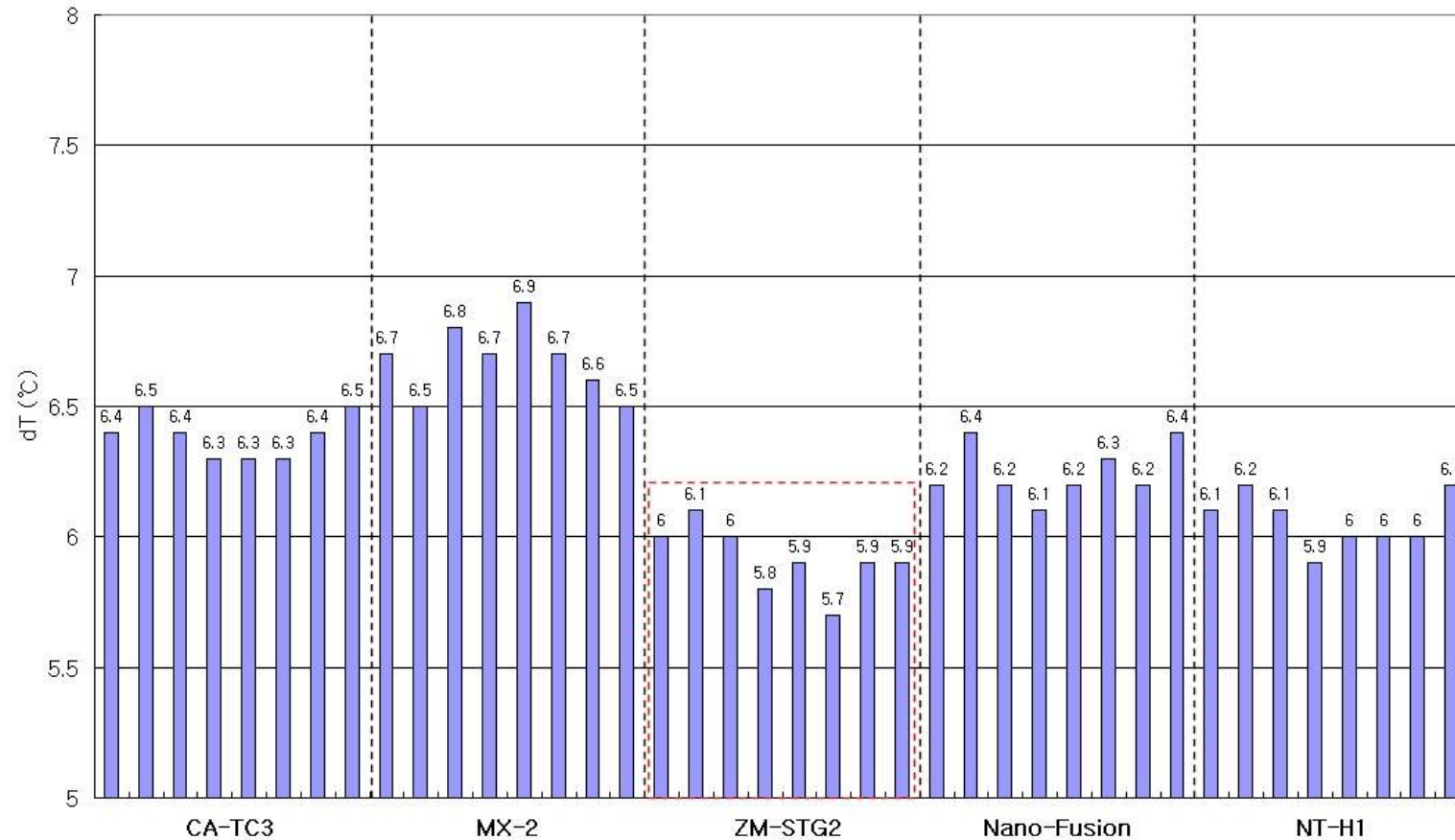


✓ Versatile Compatibility

CNPS9900A LED accommodates a broad range of sockets.
Intel LGA1156 / 1366 / 775
AMD AM3 / AM2+ / AM2 / 754 / 939 / 940

2. 1. High Performance Super Thermal Grease ZM-STG2

✓ Thermal Compound Performance Comparison

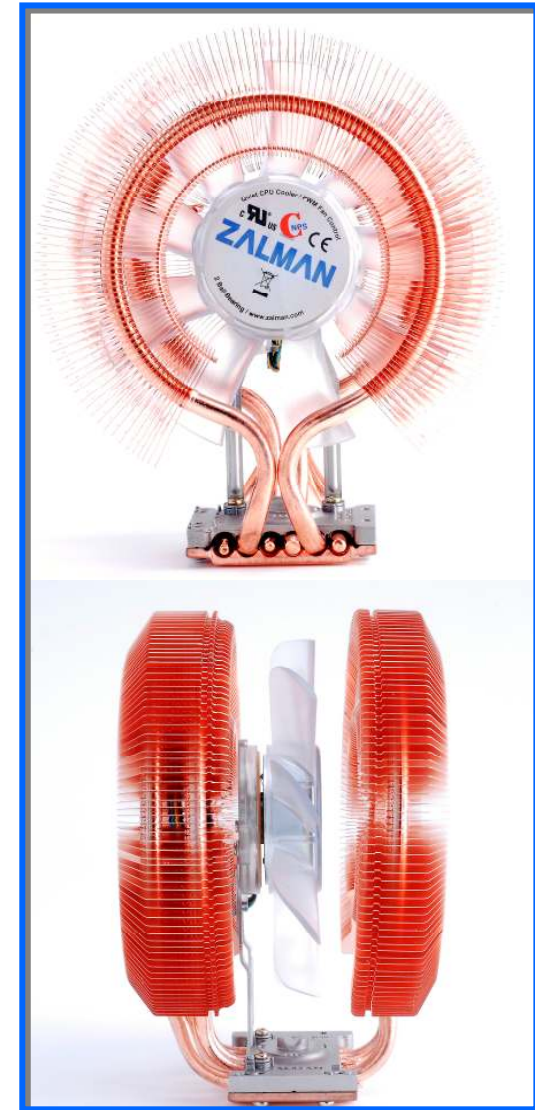


※ Eight tests on 5 thermal compounds consistently showing ZM-STG2 with the highest performance.

3. Product Specifications

Specifications	CNPS9900A LED	
Dimensions	94(L) X 131(W) X 152(H)mm	
Weight	730g	
Material	Base & Heatsink: Pure Copper	
Dissipation Area	5,402 _{cm} ²	
Heatpipes	3 Ω(Omega) Shaped Heatpipes	
Fan	PWM 120mm Blue LED Fan	
Fan Speed	Quiet Mode: 800-1,300 ±10%	Normal Mode: 1,000-2,000 ±10%
Fan Noise	Quiet Mode: 18-28dBA	Normal Mode: 19-38dBA
Input Voltage	Quiet Mode: 5V	Normal Mode: 12V
Bearing Type	2 Ball-Bearing	
Supported Sockets	INTEL Socket LGA1156/1366/775 AMD Socket AM3/AM2+/AM2/939/940/754	
Thermal Grease	ZM-STG2	
MSRP		

※ Quiet Mode: RC33P connected / Normal Mode: RC33P not connected.



4. Components

Standard Components



CPU Cooler(CNPS9900A LED)



Super Thermal Grease(ZM-STG2)



Resistor Cable(RC33P)



Washer



User's Manual

Intel Socket 1156/775 Components



1156/775 Clip



1156/775 Clip Support



775 Backplate



1156/775 Bolts & Washers

AMD Socket AM3/AM2+/AM2/754/939/940 Component



AMD Clip

Intel Socket 1366 Components



1366 Clip



1366 Clip Support



1366 Bolts

5. Product Specifications Comparison

Specifications	ZALMAN CNPS9900A LED		NOCTUA NH-U12P SE1366	Sunbeam Tech Core Contact Freezer
Dimensions (mm)	94(L) X 131(W) X 152(H)		126(L) X 95(W) X 158(H)	125(L) X 104(W) X 155(H)
Weight (g)	730		940	740
Materials	Base & Heatsink: Pure Copper		Fins: Aluminum / Base: Copper	Fins: Aluminum
Dissipation Area (cm ²)	5,402		5,000	-
Heatpipes	3 Ω(Omega) Shaped Heatpipes * Equivalent to Performance of 6 Heatpipes		5 U-Shaped Heatpipes	4 U-Shaped Heatpipes
Fan	PWM 120mm Blue LED Fan		120mm Fan	120mm Fan
Fan Speed (RPM)	Quiet Mode 800-1,300 ±10%	Normal Mode 1000-2,000 ±10%	900-1300 ±10%	1000-2000 ±10%
Input Voltage (V)	Quiet Mode: 5	Normal Mode: 12	12	12
Fan Bearing	2 Ball-Bearing		SSO	MFDB
Supported Sockets	INTEL Socket LGA1156/1366/775 AMD Socket AM3/AM2+/AM2/939/940/754		INTEL Socket LGA1366	INTEL Socket LGA775 AMD Socket AM2+/AM2/939/940
Thermal Grease	ZM-STG2		NT-H1	TX-2
MSRP				

※ ZALMAN CNPS9900A LED

Quiet Mode: RC33P connected / Normal Mode: RC33P not connected.

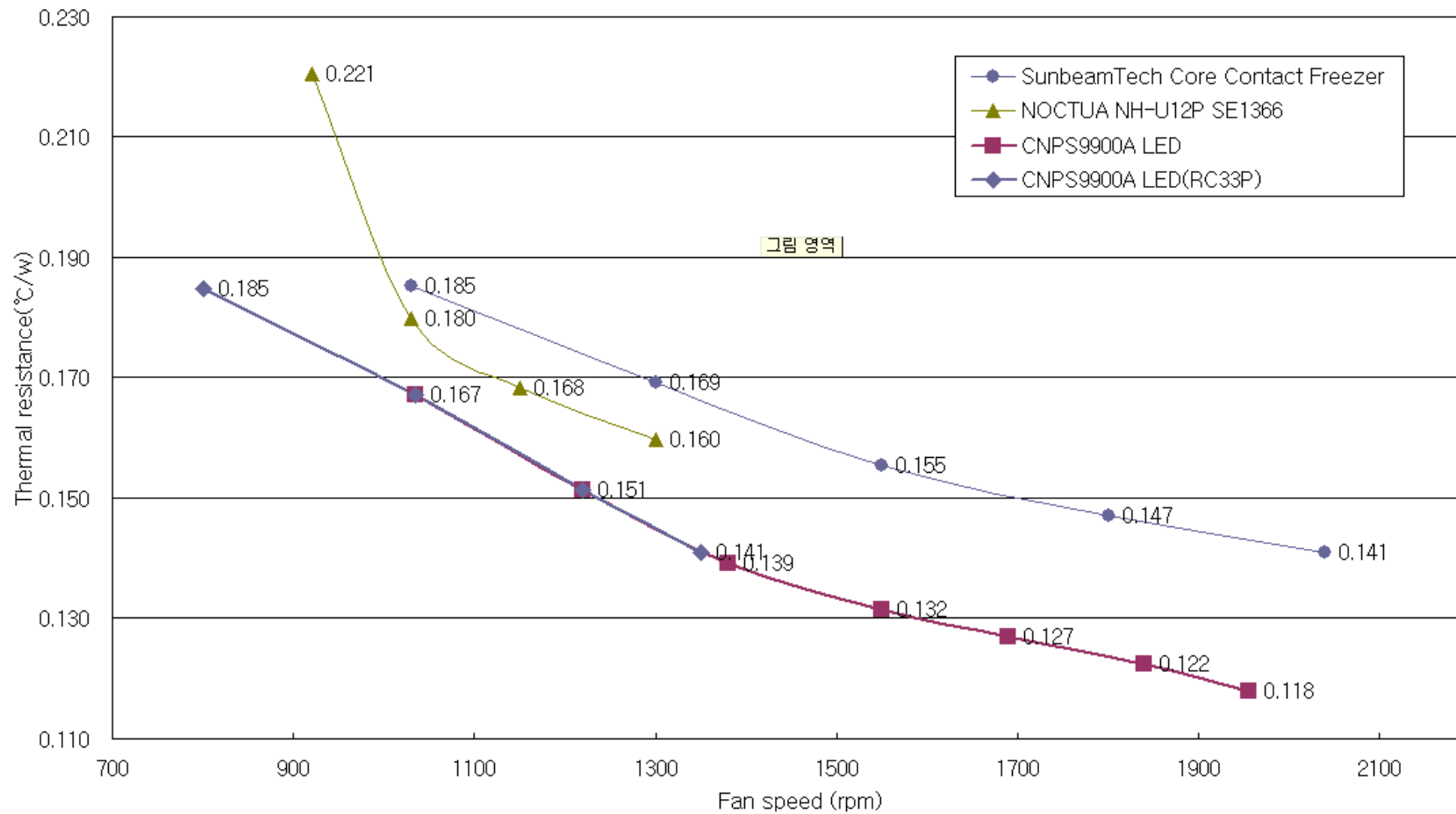
6. Product Thermal Performance Result

[Test Condition]

Heat Block : Dummy Heater (130W Load)

TIM : PCM45F

Performance Comparison



7. Q&A

✓ **What CPUs are supported?**

Intel Socket LGA1156 / 1366 / 775 based all single, dual, and quad core CPUs.

AMD Socket AM3 / AM2+ / AM2 / 754 / 939 / 940 based all single, dual, and quad core CPUs.

✓ **What size cases can be used?**

'Mid Tower' or larger cases that when laid on its side measure at least 165mm in height*.

(* This height of course is the width of the case when placed properly in a standing position)

※ Dimensions of **CNPS9900A LED**: 94(L) x 131(W) x **152(H)mm**

※ To use cases with an 'air guide', the air guide must be removed.

✓ **What is the included Resistor Cable(RC33P)?**

The Resistor Cable(RC33P) is an in-line voltage resistor that connects between the power source and the fan's power cable, reducing the voltage and fan speed for the cooler's operation in Quiet Mode.

Normal Mode (RC33P not connected) Fan Speed: 1,000–2,000RPM / Noise: 19-38dBA

Quiet Mode (RC33P connected) Fan Speed: 800-1,300RPM / Noise: 18-28dBA

7. Q&A

✓ **What is the difference between the included ZM-STG2 and the ZM-STG1 Thermal Greases?**

The newly developed ZM-STG2 is provided in a syringe type applicator without dilution for maximum heat transfer performance and can be used approximately 3 times. ZM-STG1 is available in a brush applicator with a compound to diluting agent ratio of 7:3 for application convenience.

✓ **How much Thermal Grease should be applied for installation of CNPS990A LED?**

The amount of Thermal Grease to be applied depends on the degree of flatness of the top of the CPU assembly (more specifically the flatness of the top of the IHS* which is the metallic cover placed over the CPU's PCB). Generally, if the top of the CPU is uneven or not flat, more thermal grease should be applied than on a CPU that has an IHS with an even & flat top surface. For most situations, application of approximately 1/3 of the initially provided amount of Thermal Grease will be sufficient for the CNPS9900A LED.

* IHS(Integrated Heat Spreader)

The metal cover on top of the CPU, protects the core physically, spreads/dissipates heat, blocks electromagnetic waves, and is made of copper with nickel plating.

✓ **After long-term use, will the heatsink show signs of corrosion?**

The CNPS9900A LED 's entire heatsink is pure copper, therefore after long-term use may show oxidation.

7. Q&A

✓ **Please address cautionary notices regarding CNPS9900A LED installation.**

Removing the motherboard from the case before installation of CNPS9900A LED is recommended. Particularly, if an air guide is attached to the case, the air guide must be removed before installing CNPS9900A LED. To prevent possible minor injuries during installation, please wear gloves if possible while handling the heatsink. Do not ingest the thermal grease. If there is any problem with the product, please notify the retailer.

✓ **Can the CNPS9900A LED be installed on AMD Socket 754/939 motherboards?**

Yes, but most/if not all AMD Socket 754/939 motherboards do not support PWM 4-pin fan power connectors, making it necessary to utilize the available 3-pin connector.

Caution: Among the 4 colored wires (black/yellow/green/blue) of CNPS9900A LED's power cable, the black/yellow/green wires should be connected to the motherboard (if the blue wire is connected, the fan will not function).

※ PWM fan control feature will not function / same connection scheme applies to the Resistor Cable(RC33P).

✓ **What is the bearing type, lifespan, and maximum volumetric capacity of the 120mm fan?**

Bearing type: 2 Ball-Bearing / Lifespan: 50,000hrs or greater

Volumetric Capacity: Minimum 25CFM@1000RPM / Maximum 62CFM@2000RPM.

✓ **If the cooler were to be installed with the airflow directed towards the PSU, would this cause any problems?**

It would not cause any serious problems, but it is recommended that the cooler be installed with the airflow directed towards the case's rear side to facilitate optimal airflow within the case.

7. Q&A

✓ **What is an effective method for wiping off thermal compound from the top(IHS*) of the CPU?**

A dry cloth with a bit of alcohol or acetone is effective. Please be cautious to prevent alcohol or acetone from contacting the motherboard.

The cooler is heavier than the stock cooler. Could there be problems if the computer is transported?

The CNPS9900A LED is approximately 730g and is heavier than stock coolers. Please remove the cooler from the motherboard if the computer is to be transported, to prevent damages due to external impact, and reinstall after transportation.

✓ **The CPU cooler's base is smaller than the CPU. Will this affect performance?**

The CPU's core is smaller than the CPU cooler's base, and the IHS* which covers the surface of the CPU is in place to protect the core. The CPU cooler's base is larger than the CPU's core, so it has no negative effect on performance.

* IHS(Integrated Heat Spreader)

The metal cover on top of the CPU, protects the core physically, spreads/dissipates heat, blocks electromagnetic waves, and is made of copper with nickel plating.

7. Q&A

✓ **How can the fan be replaced if it breaks down?**

1. Unscrew the 2 screws on the base cover to separate the fan/fan mount assembly from the base cover.
2. Unscrew the 2 screws on the fan mount to replace the fan and proceed in reverse order to reinstall.

✓ **What is the thermal resistance?**

The CNPS9900A LED 's thermal resistance is 0.118°C/W.

* Note: This thermal resistance value was obtained through tests performed on a 'dummy heater' and may be different on different testing equipment and in different environments.

✓ **Wouldn't the motherboard warp due to the weight of the cooler? If the motherboard warps, would that cause any problems?**

If the cooler is properly installed as indicated in the User's Manual, any warping of the motherboard caused by the tension of the cooler's clip will be within a safe range for stable operation.

✓ **Where can I find motherboard compatibility information?**

Motherboard compatibility information can be found in Zalman's website. In general, motherboards with the following CPU sockets are compatible.

Intel Socket 1156 / 1366 / 775

AMD Socket AM3 / AM2+ / AM2 / 754 / 939 / 940

7. Q&A

- ✓ **When the cooler is installed, should the fan be facing the case's front side or the back side?**

The cooler should be installed so the airflow is directed towards the case's back side.

- ✓ **Can the color of the fan's LED be changed to Red or Green?**

The LED color cannot be changed.

- ✓ **If the cooler is to be reinstalled, is it good to first remove the old thermal compound and apply fresh thermal compound?**

The heat transfer performance of thermal compounds may degrade over time. Please wipe off the previously used thermal compound and apply a fresh layer of thermal compound.

- ✓ **While installing the cooler, some pressure was applied on the heatsink that made it bend inward causing friction noise during operation. What should be done?**

Carefully pull the heatsink back to its original position so that the 2 heatsinks are perpendicular / at a right angle (in L-form) to the base and parallel (in I I-form) to each other.

- ✓ **What is the difference between CNPS9900 NT and CNPS9900A LED?**

The CNPS9900A LED has pure copper heatsink with a Blue LED Fan, while the CNPS9900 NT has the Anti-Corrosion 'Black-Pearl' Nickel Plated copper heatsink with a Green LED Fan.

7. Q&A

✓ What are the differences between the CNPS10X Series and CNPS9900 Series?

MODEL	FEATURES	Performance	Over Clocking	Noise	Fan Control	Exterior Finish	Design	List Price USD	Release
CNPS10X Extreme	<ul style="list-style-type: none"> • Currently among highest in cooling performance • Supports over clocking up to 340W • For seekers of ultimate performance and design • Noise level adjustment with the PWM fan control - PWM Mate is patent pending • Anti-corrosion 'Black-Pearl' Nickel Plating 	Ultra High	340W Max	Ultra Quiet	PWM Mate	'Black-Pearl' Nickel Plated	Tower	\$89.90	'09. 05
CNPS10X Quiet	<ul style="list-style-type: none"> • Currently among highest in cooling performance • Supports over clocking up to 340W • For seekers of ultra quiet operation • Fan controller included for noise level adjustment 	Ultra High	340W Max	Ultra Quiet	Fan Mate2	Anodized	Tower	\$69.90	'09. 07
CNPS10X Flex	<ul style="list-style-type: none"> • Currently among highest in cooling performance • Supports over clocking up to 340W • For modders seeking to push performance limits • Accommodates 2 fans for intensified performance 	Ultra High	340W Max	-	-	-	Tower	\$64.90	'09. 07
CNPS9900 NT	<ul style="list-style-type: none"> • Ω(Omega) shaped heatpipe design • For seekers of performance and design • Pure copper for maximized performance • Resistor Cable included for noise level adjustment • Anti-corrosion 'Black-Pearl' Nickel Plating 	High	150W Max	Ultra Quiet	Mother Board (Resistor Cable)	'Black-Pearl' Nickel Plated	Circular	\$74.90	'09. 07
CNPS9900A LED	<ul style="list-style-type: none"> • Ω(Omega) shaped heatpipe design • For seekers of performance and design • Pure copper for maximized performance • Resistor Cable included for noise level adjustment 	High	150W Max	Ultra Quiet	Mother Board (Resistor Cable)	-	Circular	\$64.90	'09. 07

Thank You