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› Thermalright Phantom Spirit 120 EVO CPU Cooler Instruction Manual

Thermalright PS120 EVO

Thermalright Phantom Spirit 120 EVO CPU Cooler Instruction Manual

Model: PS120 EVO

1. PRODUCT OVERVIEW

The Thermalright Phantom Spirit 120 EVO is a high-performance CPU air cooler designed to efficiently dissipate heat from your processor. It features a dual-tower heatsink design, seven advanced heat pipes, and two TL-K12 PWM fans for optimal cooling and quiet operation. This cooler is compatible with a wide range of Intel and AMD sockets.

普遍的な互換性

Phantom Spirit 120 EVO シリーズクーラーは、次のモデルを含む主流の Intel および AMD Cpu 用に設計されています:

Intel: LGA1700/1200/115X/
2011/2066
AMD: AM4/AM5



Image 1.1: Overview of the Thermalright Phantom Spirit 120 EVO CPU Cooler, showcasing its dual-tower design and fans.

Key Features:

- **Dual-Tower Heatsink:** Provides a large surface area for heat dissipation.
- **7x6mm AGHP Heat Pipes:** Advanced Gravity Heat Pipe technology ensures efficient heat transfer regardless of orientation.
- **Dual TL-K12 PWM Fans:** 120mm fans with a maximum speed of 2150 RPM and low noise levels ($\leq 27\text{dB(A)}$).
- **Anodic Black Matte Finish:** Enhances aesthetics and corrosion resistance.
- **Wide Compatibility:** Supports Intel LGA1700/115x/1200/2011/2066 and AMD AM4/AM5 sockets.

2. PACKAGE CONTENTS

Please verify that all components are present before proceeding with the installation.

- Thermalright Phantom Spirit 120 EVO CPU Cooler (Heatsink with pre-installed fans)
- Intel Mounting Brackets and Backplate
- AMD Mounting Brackets
- Mounting Screws and Spacers
- Thermal Paste
- Fan Clips (if not pre-installed)
- User Manual

3. INSTALLATION GUIDE

Before starting, ensure your system is powered off and unplugged. Refer to your motherboard manual for CPU and RAM installation if not already done.

3.1 Prepare the Motherboard

1. Remove any existing CPU cooler and clean off old thermal paste from the CPU IHS (Integrated Heat Spreader) using isopropyl alcohol.
2. Identify your CPU socket type (Intel LGA or AMD AM).

3.2 Install Mounting Hardware

For Intel Sockets (LGA1700/115x/1200/2011/2066):

1. Place the Intel backplate behind the motherboard, aligning the holes with the CPU socket mounting holes.
2. Insert the appropriate standoffs through the motherboard from the front, screwing them into the backplate.
3. Attach the Intel mounting brackets to the standoffs using the provided screws.

For AMD Sockets (AM4/AM5):

1. Remove the plastic retention clips from the stock AMD backplate (keep the backplate).
2. Install the AMD standoffs onto the stock backplate.
3. Attach the AMD mounting brackets to the standoffs using the provided screws.

ダブルタワーデザイン

Phantom Spirit 120 EVO ツインタワー設計のエアクーラーは、より良い熱放散のための余分なヒートシンクとフィンエリアを提供しています。



Image 3.1: Diagram showing compatible motherboard sockets for Intel (LGA115X/1200/1700/2011/2066) and AMD (AM4/AM5).

3.3 Apply Thermal Paste

Apply a small, pea-sized amount of thermal paste to the center of the CPU IHS. Do not spread it; the pressure from the cooler will distribute it evenly.

3.4 Mount the Heatsink

1. Carefully place the heatsink onto the CPU, aligning the mounting holes on the cooler base with the mounting brackets.
2. Secure the heatsink by tightening the spring-loaded screws in a diagonal pattern until snug. Do not overtighten.

3.5 Install Fans and Connect Cables

1. Attach the two TL-K12 fans to the heatsink using the provided fan clips. Ensure the airflow direction is correct (typically blowing towards the rear of the case).
2. Connect the 4-pin PWM fan cables to the CPU_FAN and CPU_OPT (or CHA_FAN) headers on your motherboard. The Y-splitter cable can be used if only one CPU fan header is available.

120mm高性能ファン

定格回転数2150RPMで、デュアルTL-K12は静圧性能とARGBの美学を両立しています。CPUクーラーの新しい外観と冷却性能を提供しています。



Image 3.2: Illustration of the dual-tower heatsink and dual fans, demonstrating how they contribute to efficient CPU cooling.

4. OPERATING INSTRUCTIONS

Once installed, the Thermalright Phantom Spirit 120 EVO operates automatically, controlled by your motherboard's PWM fan headers.

4.1 Fan Speed Control (PWM)

The TL-K12 fans utilize Pulse Width Modulation (PWM) technology, allowing your motherboard to dynamically adjust fan speeds based on CPU temperature. This ensures optimal cooling performance while minimizing noise during lighter loads.

- You can configure fan curves in your motherboard's BIOS/UEFI settings or through compatible software provided by your motherboard manufacturer.
- The fans operate at a maximum speed of 2150 RPM $\pm 10\%$ and produce a maximum noise level of $\leq 27\text{dB(A)}$.

非対称フィン構造

脱熱器ひれの積み重ねは非対称的な構造の設計であり、ひれを通るより多くの気流を許可する。また、より良いグラフィックスカードまたはマザーボードヒートシンクの互換性のための双方向のインストールを可能にします。

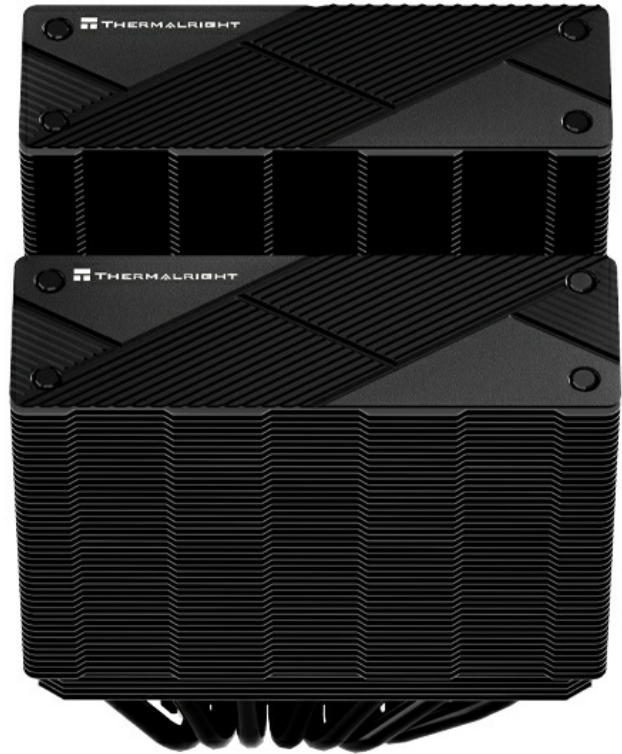


Image 4.1: Close-up view of the TL-K12 120mm high-performance fan, highlighting its design and RGB lighting.

4.2 Initial System Check

After installation, power on your system and enter the BIOS/UEFI to verify that the CPU temperature is within normal operating limits and that the fans are spinning correctly.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your CPU cooler.

5.1 Cleaning the Heatsink and Fans

Dust accumulation can impede cooling performance. It is recommended to clean the cooler every 6-12 months, or more frequently in dusty environments.

1. Power off your computer and unplug it from the wall outlet.
2. Carefully remove the fans from the heatsink by detaching the fan clips.
3. Use compressed air to blow dust out of the heatsink fins. Hold the can upright and use short bursts.
4. Clean the fan blades with a soft cloth or compressed air. Hold the fan blades to prevent them from spinning rapidly during cleaning, which can damage the bearings.
5. Reattach the fans to the heatsink.

5.2 Thermal Paste Reapplication

While not frequently required, reapplying thermal paste every few years can help maintain optimal thermal conductivity. If you notice significantly higher CPU temperatures, consider reapplying thermal paste.

6. TROUBLESHOOTING

If you encounter issues with your CPU cooler, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
High CPU Temperatures	• Improper thermal paste application • Loose heatsink mounting • Insufficient airflow in PC case • Dust accumulation on heatsink/fans	• Reapply thermal paste • Ensure heatsink is securely mounted • Improve case airflow (add/reposition case fans) • Clean heatsink and fans
Fans Not Spinning	• Fan cables disconnected • Incorrect fan header connection • Faulty fan	• Check fan cable connections to motherboard • Ensure connected to CPU_FAN header • Test with another fan header or replace fan
Excessive Fan Noise	• High fan speed settings • Dust/obstruction in fan blades • Faulty fan bearing	• Adjust fan curve in BIOS/UEFI • Clean fan blades • Replace fan

7. SPECIFICATIONS

Detailed technical specifications for the Thermalright Phantom Spirit 120 EVO CPU Cooler.

Uの形のニッケルめっきされた純粋な銅のHeatpipes

ヒートパイプの性能に影響を与える重力によって無制限に、七つのAGHP技術ヒートパイプは、任意のインストール方向に冷却偉大なCPUを提供しています.



Image 7.1: Dimensional drawing of the Phantom Spirit 120 EVO, showing its height (157mm), width (135mm), and length (125mm).

Feature	Specification
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Feature	Specification
Model Number	PS120 EVO (TL-PS120 EVO)
Dimensions (L x W x H)	12.5 cm x 13.5 cm x 15.7 cm
Cooling Method	Air Cooling
Heat Pipes	7 x 6mm AGHP Heat Pipes (Nickel-plated copper)
Base Material	Precisely Micro-Engraved Reflow Soldered Copper Base
Fan Model	TL-K12 PWM Fan
Fan Dimensions	120mm x 120mm x 25mm
Fan Speed	2150 RPM $\pm$ 10% (Max)
Airflow	69 CFM (Max)
Noise Level	$\leq$ 27 dB(A)
Power Connector	4-Pin PWM
Voltage	12V
Compatible Sockets	Intel: LGA1700 / 1150 / 1151 / 1155 / 1156 / 1200 / 2011 / 2066 AMD: AM4 / AM5
Material	Copper (Heat Pipes, Base), Aluminum (Fins), PBT + PC (Fans)

8. WARRANTY INFORMATION

Thermalright products are manufactured to the highest quality standards. This product is covered by a limited warranty against defects in materials and workmanship from the date of purchase.

Please retain your proof of purchase for warranty claims. The warranty does not cover damage resulting from improper installation, accident, abuse, misuse, natural disaster, or unauthorized modification.

For specific warranty duration and terms, please refer to the official Thermalright website or contact your local distributor.

9. SUPPORT

If you require technical assistance or have questions regarding the Thermalright Phantom Spirit 120 EVO CPU Cooler, please contact Thermalright customer support.

- **Website:** Visit the official Thermalright website for FAQs, updated manuals, and support resources.
- **Email:** Refer to the Thermalright website for customer service email addresses.
- **Local Distributor:** Contact your point of purchase or local Thermalright distributor for regional support.



