Thermalright PS120SE

Thermalright Phantom Spirit 120 SE Black CPU Cooler Instruction Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Thermalright Phantom Spirit 120 SE Black CPU Cooler. Please read this manual thoroughly before installation to ensure proper setup and optimal performance. This dual-tower air cooler is designed to provide efficient cooling for a wide range of Intel and AMD processors.

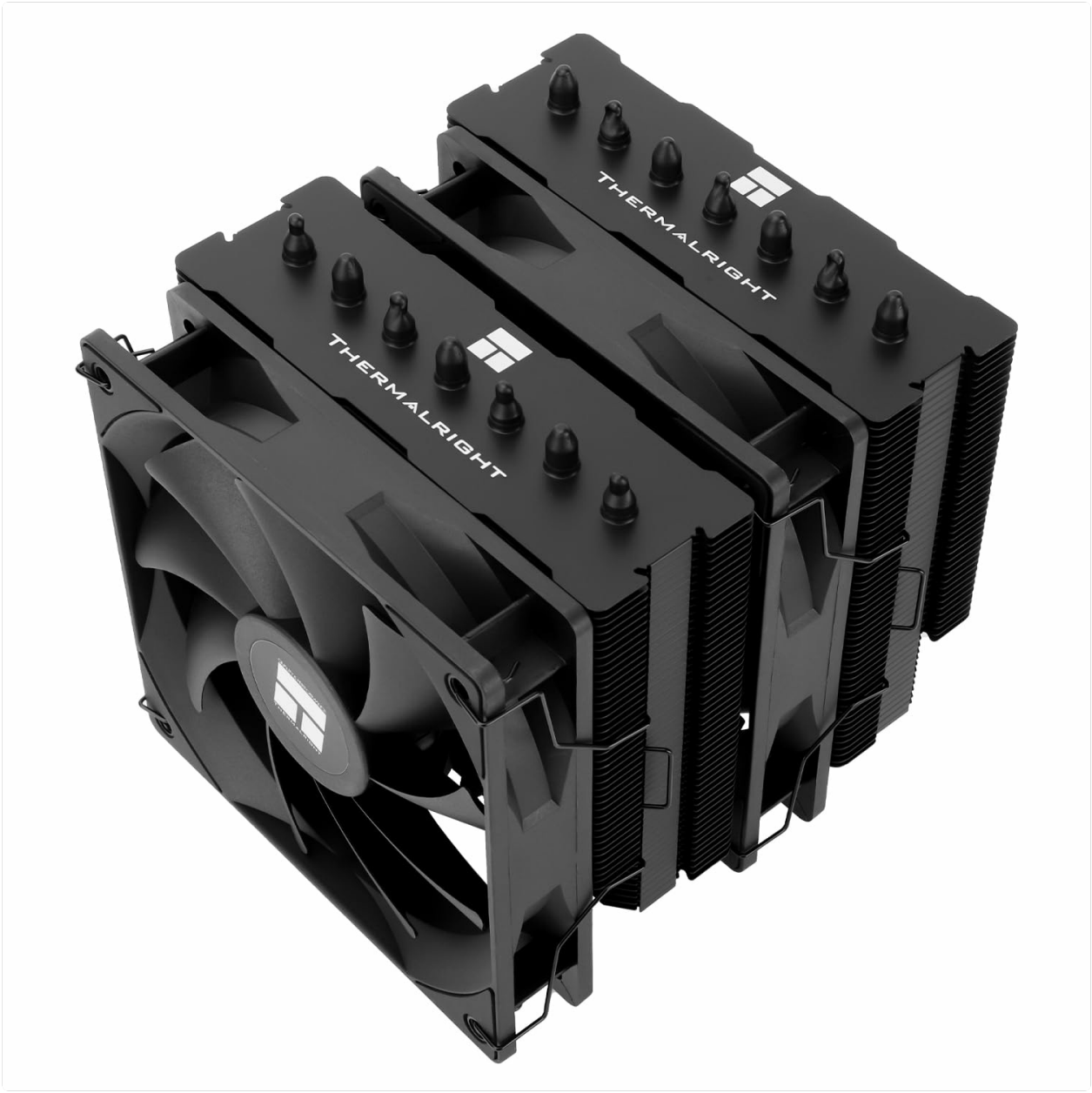

Image 1.1: Thermalright Phantom Spirit 120 SE Black CPU Cooler, showing its dual-tower heatsink and two black fans.

2. Package Contents

Verify that all components are present in your package:

- Thermalright Phantom Spirit 120 SE Black CPU Cooler (Heatsink with two TL-C12B V2 PWM Fans)
- Mounting hardware kit for Intel LGA1851/1700/115X/1200 sockets
- Mounting hardware kit for AMD AM4/AM5 sockets
- Thermal paste
- User Manual (this document)

3. Specifications

Key technical specifications for the Thermalright Phantom Spirit 120 SE Black CPU Cooler:

Feature	Specification

Feature	Specification
Model Number	PS120SE BLACK
CPU Cooler Dimensions (L x W x H)	125mm x 135mm x 154mm (4.92 x 5.31 x 6.06 inches)
Heat Sink Material	Aluminum fins, pure copper base, 7x6mm heat pipes
Heat Pipe Technology	AGHP upgraded 4th generation (Anti-Gravity Heat Pipe)
Fan Model	TL-C12B V2 (x2)
Fan Dimensions	120mm x 120mm x 25mm (4.92 x 4.92 x 0.98 inches)
Fan Speed	1500 RPM ±10%
Air Flow	66.17 CFM (max)
Noise Level	≤25.6 dB(A)
Power Connector	4-pin PWM
Voltage	12V
Compatibility	Intel: LGA1851/1700/1150/1151/1155/1156/1200 AMD: AM4/AM5

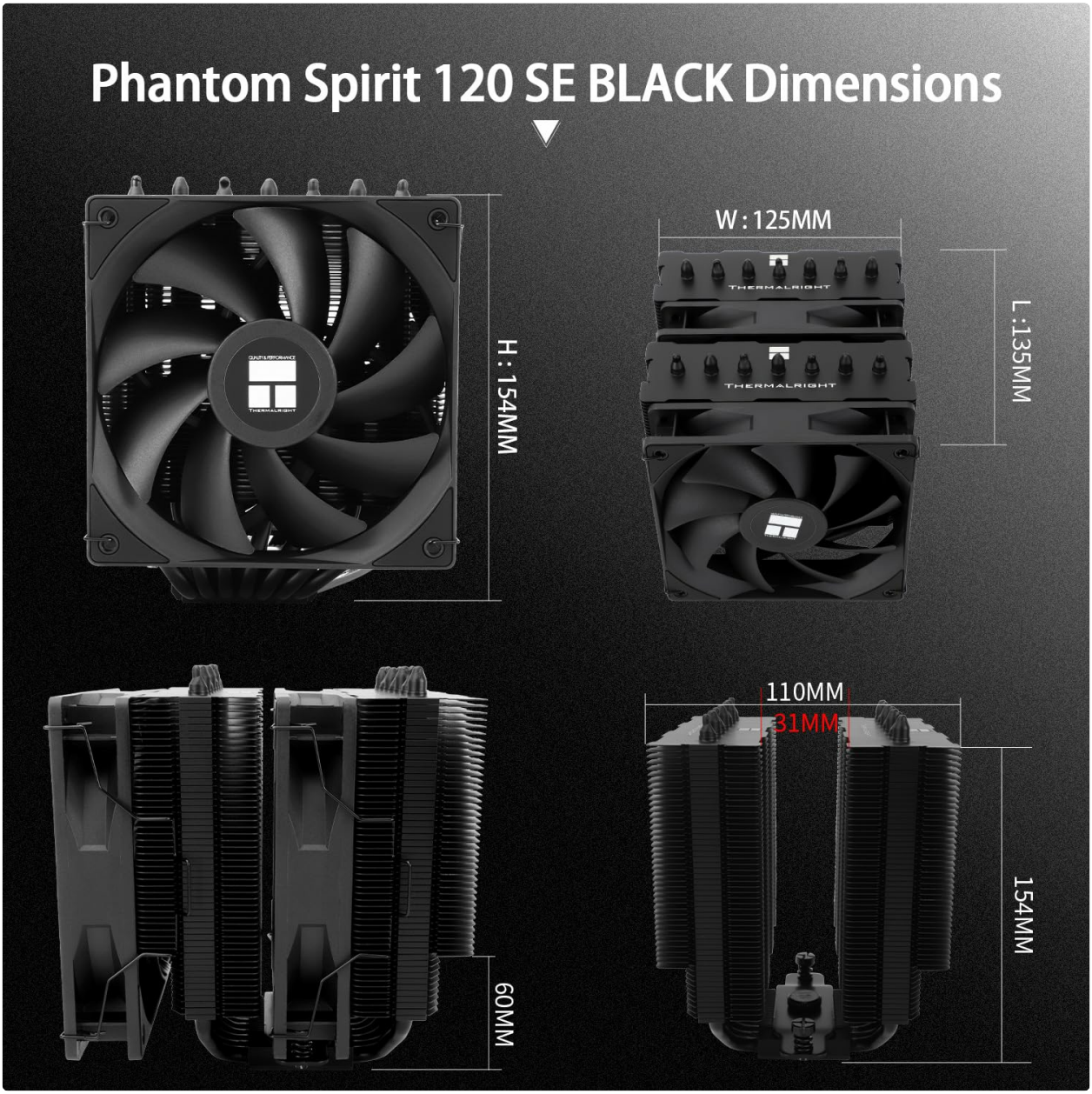

Image 3.1: Detailed dimensions of the Phantom Spirit 120 SE Black CPU Cooler, showing height, width, and length measurements.

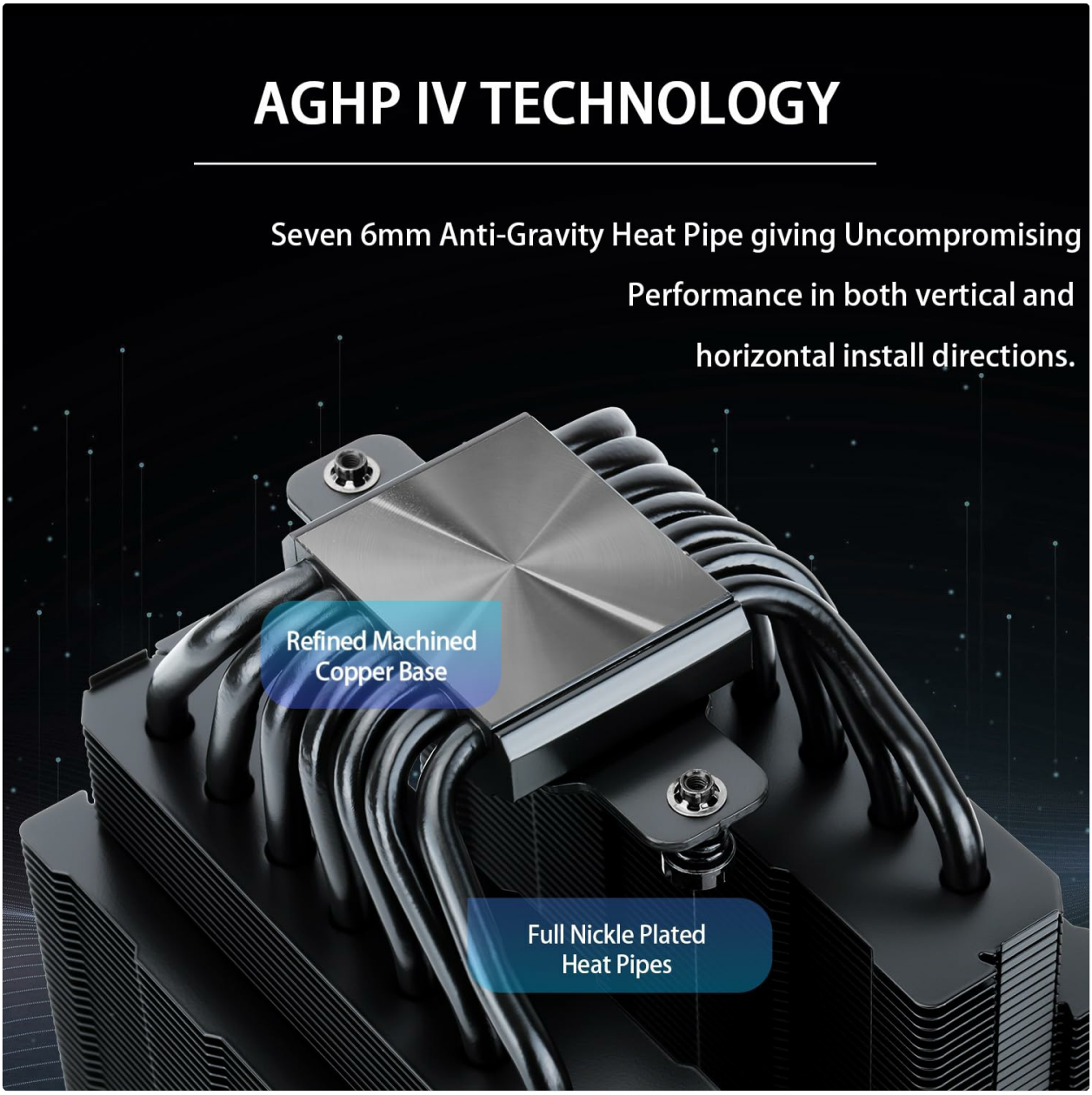

Image 3.2: Close-up view of the AGHP IV technology, showcasing the refined machined copper base and full nickel-plated heat pipes.

4. Installation Guide

4.1. Before You Begin

- **Compatibility Check:** Ensure your motherboard and CPU socket are compatible with the cooler (Intel LGA1851/1700/115X/1200 or AMD AM4/AM5).
- **Tools:** Have a Phillips head screwdriver and a cleaning cloth ready.
- **Preparation:** Remove any existing CPU cooler and clean the CPU surface thoroughly with isopropyl alcohol to remove old thermal paste.

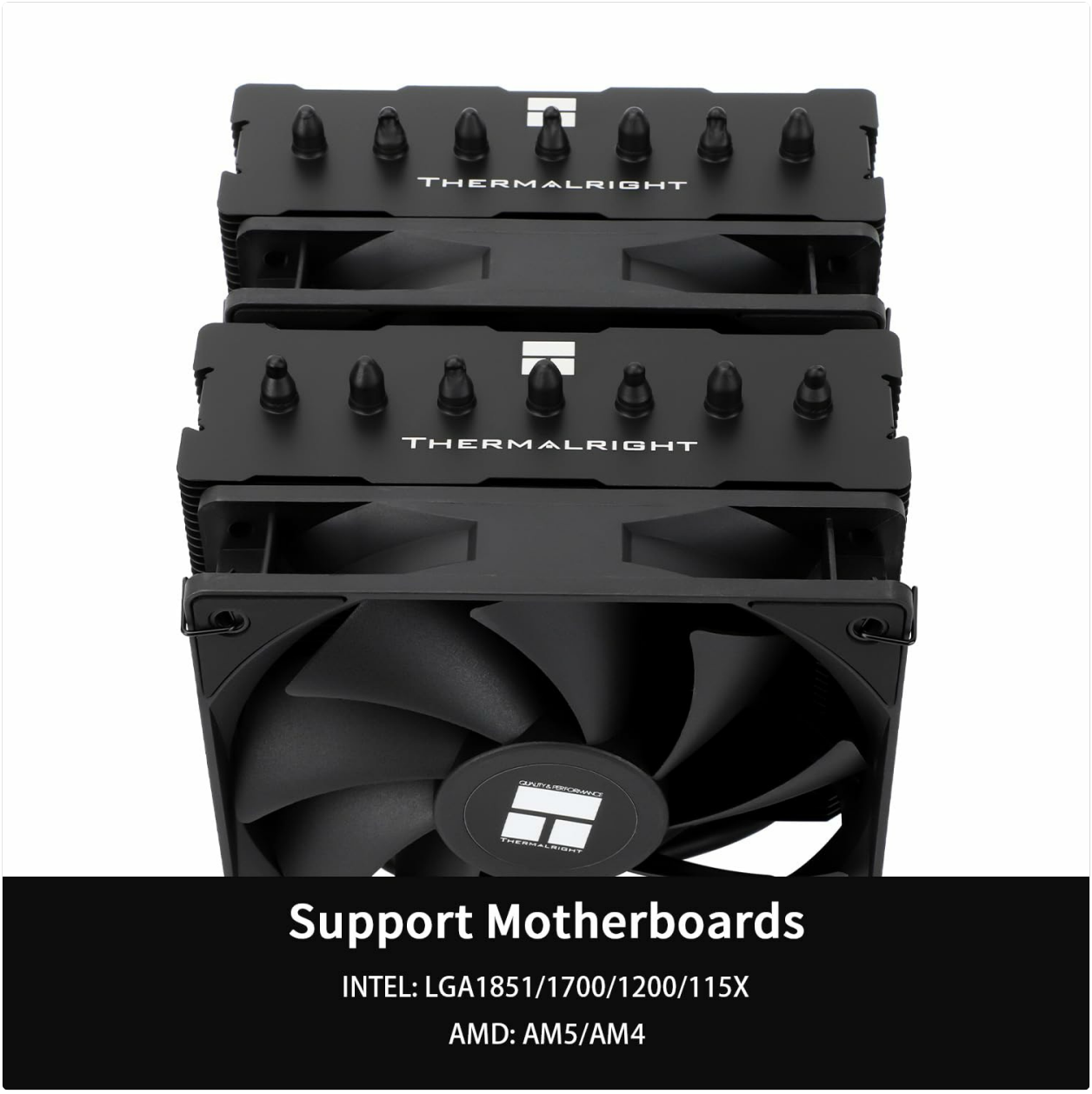

Image 4.1: Illustration of motherboard compatibility, listing supported Intel (LGA1851/1700/1200/115X) and AMD (AM5/AM4) sockets.

4.2. Step-by-Step Installation

Follow these general steps for installation. Specific hardware may vary slightly between Intel and AMD platforms.

1. **Prepare Motherboard:** For Intel sockets, install the appropriate backplate (if provided) and standoffs. For AMD AM4/AM5, use the original motherboard backplane and install the provided AMD standoffs.
2. **Apply Thermal Paste:** Apply a small, pea-sized amount of thermal paste to the center of your CPU's integrated heat spreader (IHS).
3. **Mount Heatsink:** Carefully place the heatsink onto the CPU, aligning the mounting holes with the standoffs. Secure the heatsink with the provided screws, tightening them in an alternating diagonal pattern until snug. Do not overtighten.
4. **Attach Fans:** Use the included fan clips to attach the two TL-C12B V2 fans to the heatsink. Ensure the fans are oriented to pull air through the heatsink towards the rear of your case. The front fan may need to be adjusted vertically to clear tall RAM modules.

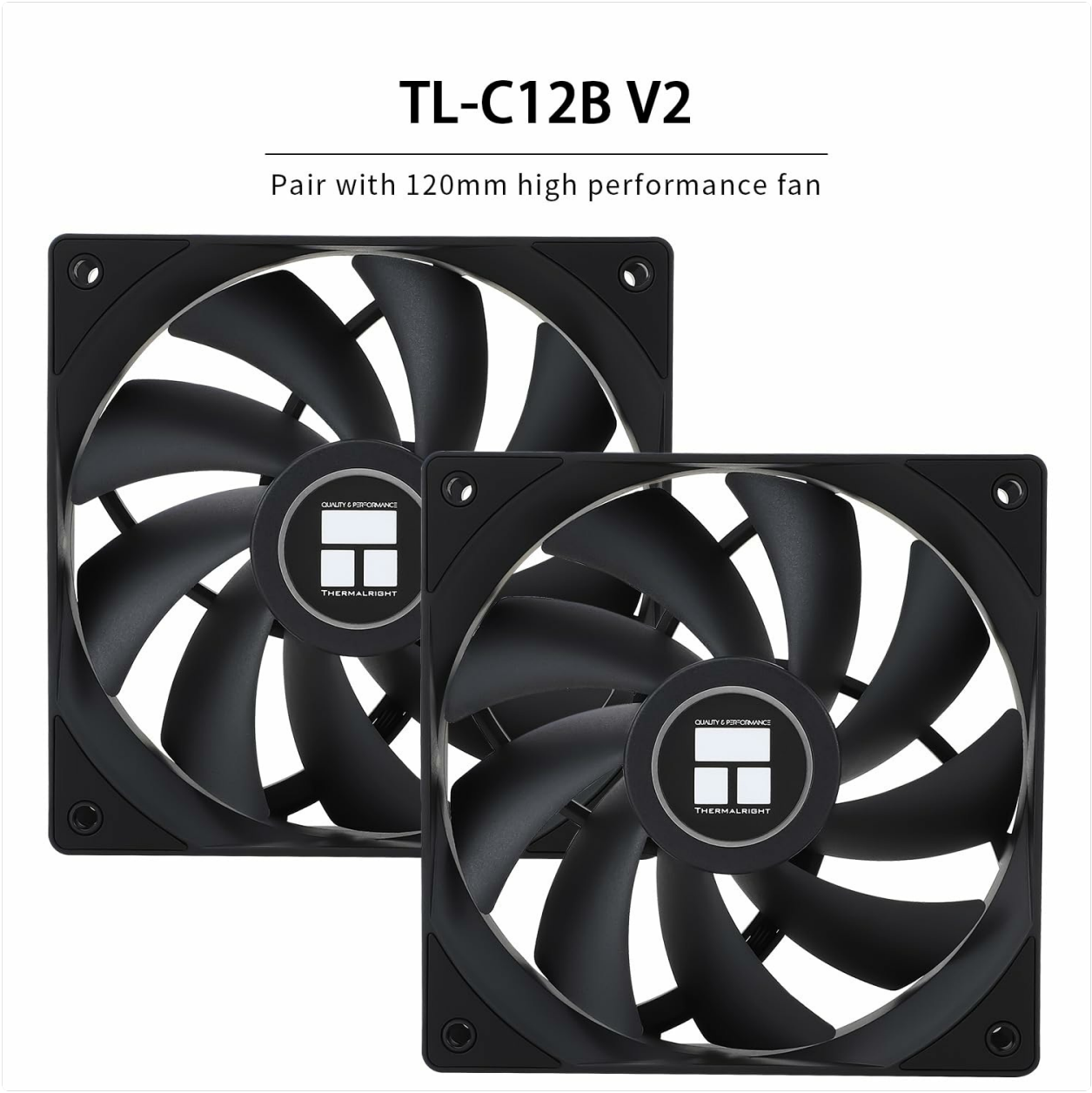

Image 4.2: A pair of Thermalright TL-C12B V2 120mm high-performance fans, used with the Phantom Spirit 120 SE cooler.

5. **Connect Fan Cables:** Connect the 4-pin PWM fan cables from both fans to the CPU_FAN headers on your motherboard. If your motherboard has multiple CPU fan headers, use the primary CPU_FAN header for one fan and a CPU_OPT or CHA_FAN header for the second, or use a Y-splitter if provided.

5. Operating Instructions

The Thermalright Phantom Spirit 120 SE Black CPU Cooler operates automatically based on your motherboard's fan control settings. The TL-C12B V2 PWM fans adjust their speed (up to 1500 RPM) according to CPU temperature to maintain optimal cooling and noise levels. Ensure the 4-pin PWM fan connectors are securely attached to the CPU_FAN headers on your motherboard for proper functionality.

You can typically monitor CPU temperatures and fan speeds through your motherboard's BIOS/UEFI settings or dedicated software provided by your motherboard manufacturer.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your CPU cooler:

- **Dust Removal:** Periodically inspect the heatsink fins and fan blades for dust accumulation. Use compressed air or a soft brush to gently remove dust. Ensure fans are not spinning during cleaning to prevent damage to the bearings.
- **Thermal Paste:** Reapply thermal paste if the cooler is removed or reinstalled. Thermal paste can degrade over time, so consider reapplying it every few years for sustained performance.
- **Fan Inspection:** Check fan cables for secure connections and ensure fan blades are free from obstructions. Listen for any unusual noises from the fans, which might indicate a need for cleaning or replacement.

7. Troubleshooting

7.1. High CPU Temperatures

- **Thermal Paste:** Verify proper thermal paste application. Too little, too much, or uneven application can hinder heat transfer.
- **Fan Connection:** Ensure fans are spinning and connected correctly to the CPU_FAN header(s) on your motherboard. Check BIOS/UEFI settings for fan speed control.
- **Airflow:** Check for proper airflow within the computer case. Ensure intake and exhaust fans are correctly oriented and not obstructed.
- **Heatsink Mount:** Confirm the heatsink is securely mounted to the CPU and making full contact. Uneven pressure can lead to poor heat dissipation.

7.2. Excessive Fan Noise

- **Dust:** Check for dust accumulation on fan blades or heatsink, which can cause imbalance and noise.
- **Cables:** Ensure fan cables are not interfering with fan rotation or touching fan blades.
- **Mounting:** Verify fan mounting clips are secure and fans are not vibrating against the heatsink or case.
- **Fan Curve:** Adjust fan curve settings in your motherboard's BIOS/UEFI to reduce fan speed at lower temperatures if noise is a concern.

7.3. Cooler Not Fitting

- **Dimensions:** Double-check the cooler's dimensions against your PC case and motherboard components (especially RAM height).
- **RAM Clearance:** The front fan may need to be adjusted vertically on its clips to clear tall RAM modules. This is a common adjustment for large air coolers.

8. Warranty and Support

For warranty information, technical support, or to inquire about replacement parts, please refer to the official Thermalright website or contact their customer service directly. Keep your proof of purchase, such as your receipt or order confirmation, as it may be required for warranty claims.

Thermalright Official Website: www.thermalright.com