Thermalright TL-C12CW

Thermalright TL-C12CW 120mm CPU/Case Fan Instruction Manual

Model: TL-C12CW

1. Introduction

This manual provides instructions for the installation, operation, and maintenance of the Thermalright TL-C12CW 120mm CPU/Case Fan. This fan is designed to provide efficient cooling for computer cases and CPU coolers, featuring PWM speed control and an S-FDB bearing for quiet and reliable performance.

Image 1.1: Front view of the Thermalright TL-C12CW 120mm fan.

2. Key Features

- **High Performance Cooling:** Automatic speed control via 4-pin PWM interface, adjusting fan speed up to 1550 RPM based on motherboard temperature. Includes a 55cm cable for PWM series control.
- **S-FDB Bearing:** Features a Stably-FDB (Fluid Dynamic Bearing) with magnetic design to stabilize the fan blade in motion, minimizing noise and extending fan lifespan while providing efficient cooling.
- **Vibration Reduction:** Equipped with four soft silicone corner pads on all sides to reduce vibration and friction, ensuring low noise operation.
- **Versatile Application:** Suitable for use as a case fan, with CPU coolers, or water cooler radiators to enhance overall system cooling.
- **Durable Construction:** Made from industrial-grade PBT+PC material for strength and safety.

Image 2.1: Soft-touch silicone rubber pads for vibration absorption.

Image 2.2: S-FDB bearing with magnetic design for stability.

Image 2.3: Optimized airflow fan blade design.

3. What's in the Box

The Thermalright TL-C12CW package typically includes:

- 1 x Thermalright TL-C12CW 120mm Fan
- Mounting Screws (standard inclusion for most fans)

Note: Contents may vary slightly. Please check your package upon receipt.

4. Setup and Installation

Before installation, ensure your computer is powered off and disconnected from the power source. Refer to your computer case or CPU cooler manual for specific mounting locations and procedures.

4.1. Case Fan Installation

1. **Prepare the Case:** Open your computer case and identify the desired fan mounting location (e.g., front, rear, top, bottom).
2. **Determine Airflow Direction:** Fans typically have an arrow indicating airflow direction. Install the fan to ensure proper airflow (intake or exhaust) for your system's cooling strategy.
3. **Mount the Fan:** Align the fan with the screw holes on your case. Secure the fan using the provided mounting screws. Do not overtighten.
4. **Connect Power:** Connect the fan's 4-pin PWM cable to an available 4-pin fan header on your motherboard. Ensure the connector is fully seated.

4.2. CPU Cooler/Radiator Fan Installation

If replacing an existing fan on a CPU cooler or radiator, follow the cooler's specific instructions for fan

removal and installation. Generally:

1. **Remove Old Fan (if applicable):** Disconnect the old fan's power cable and remove its mounting hardware.
2. **Attach New Fan:** Secure the TL-C12CW fan to the CPU cooler heatsink or radiator using the appropriate mounting clips or screws provided with your cooler/radiator.
3. **Connect Power:** Connect the fan's 4-pin PWM cable to the CPU_FAN header on your motherboard or a dedicated fan header on your liquid cooler pump.

Image 4.1: Examples of fan installation in various scenarios: chassis heat dissipation, air-cooled CPU cooler, and liquid cooling radiator.

5. Operation

The Thermalright TL-C12CW fan utilizes a 4-pin PWM (Pulse Width Modulation) connection for automatic speed control. Once connected to a compatible motherboard header, the fan speed will be regulated by the motherboard's BIOS/UEFI settings or operating system software based on system temperature.

- **Automatic Speed Control:** The fan's speed will automatically adjust between its minimum and maximum RPM (up to 1550 RPM) to maintain optimal cooling performance and minimize noise.
- **BIOS/UEFI Settings:** You can typically fine-tune fan curves and speed profiles within your

motherboard's BIOS/UEFI settings. Refer to your motherboard manual for detailed instructions.

- **Software Control:** Some motherboards offer dedicated software utilities for fan control directly from your operating system.

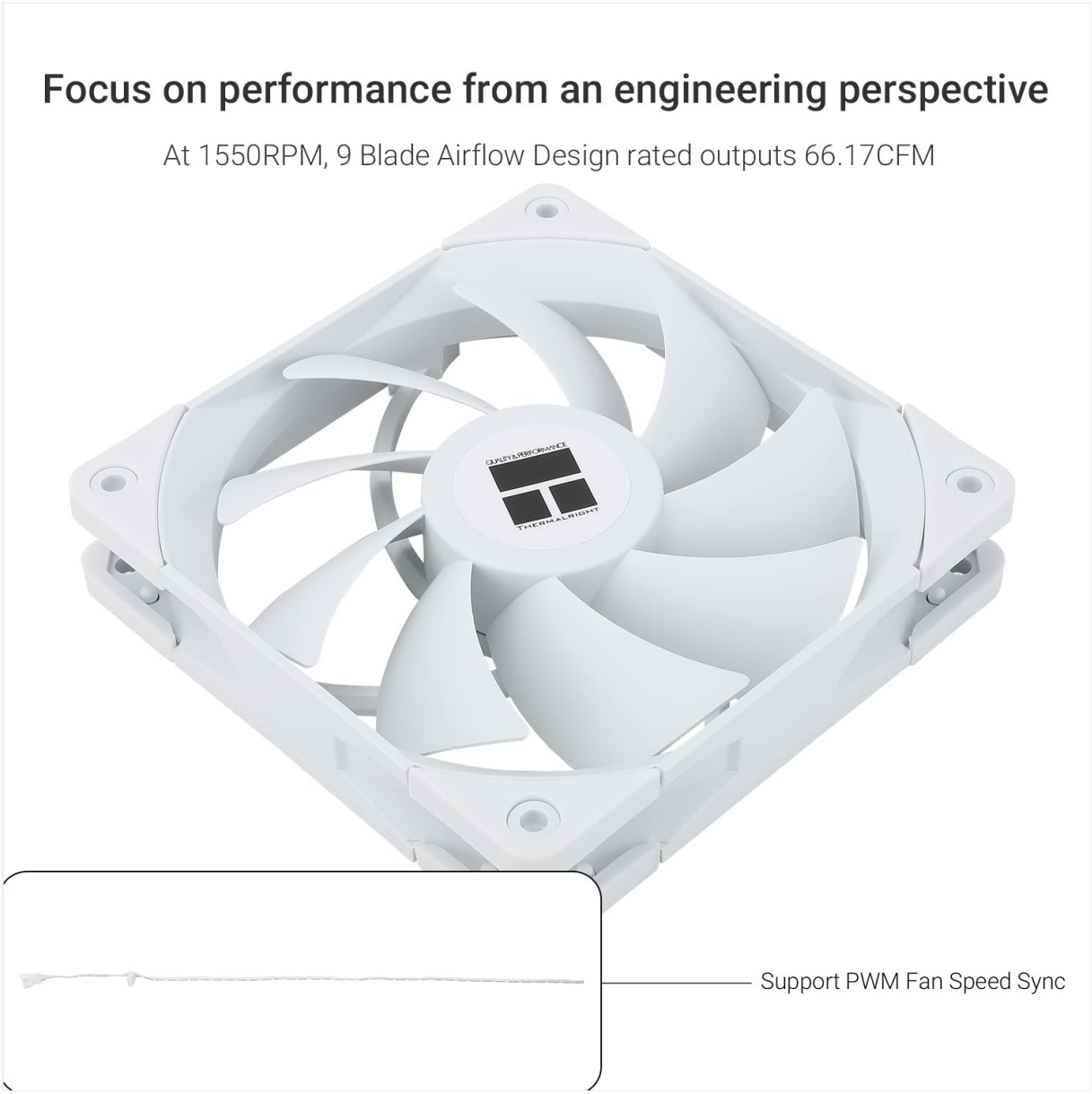

Image 5.1: Rear view of the fan, highlighting the 4-pin PWM cable for speed synchronization.

6. Maintenance

Regular maintenance helps ensure optimal performance and longevity of your fan.

- **Dust Removal:** Periodically clean dust from the fan blades and frame using compressed air or a soft brush. Ensure the fan is powered off and disconnected before cleaning.
- **Inspection:** Check for any obstructions around the fan blades or signs of wear on the cable.
- **Avoid Lubrication:** The S-FDB bearing is designed for long-term, maintenance-free operation and does not require additional lubrication.

7. Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Fan not spinning	• Loose or incorrect power connection • Disabled fan header in BIOS • Faulty fan	• Ensure 4-pin PWM cable is securely connected to the motherboard fan header. • Check BIOS/UEFI settings to ensure the fan header is enabled and configured correctly. • Test the fan on a different fan header or system if possible.
Excessive noise	• Dust accumulation • Loose mounting screws • Fan blades hitting cables or obstructions • High RPM due to temperature	• Clean fan blades and frame. • Ensure mounting screws are tightened appropriately. • Check for and clear any obstructions. • Adjust fan curve in BIOS/UEFI to reduce maximum RPM if temperatures allow.
Poor cooling performance	• Incorrect airflow direction • Insufficient fan speed • Dust accumulation	• Verify fan is installed with correct airflow direction for your system. • Check BIOS/UEFI settings to ensure fan speed is not artificially limited. • Clean fan blades and ensure no obstructions.

8. Specifications

Feature	Detail
Model Number	TL-C12CW
Dimensions	120mm (L) x 120mm (W) x 25mm (H)
Weight	5.9 ounces (approx. 167g)
Rated Speed	Up to 1550 RPM
Air Flow Capacity	66.17 CFM (Cubic Feet Per Minute)
Noise Level	25.6 dB(A)
Power Connector	4-Pin PWM
Voltage	12 Volts
Wattage	2.4 watts
Bearing Type	S-FDB (Fluid Dynamic Bearing)
Material	PBT+PC (silicon pads)
Compatible Devices	Desktop computers

Image 8.1: Visual representation of key specifications for the TL-C12CW fan.

9. Warranty and Support

Thermalright products are typically covered by a manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Thermalright website.

For technical support, troubleshooting assistance, or warranty claims, please contact Thermalright customer service through their official website or the retailer where the product was purchased.

Manufacturer: THERMALRIGHT