

Thermalright TL-S12RW

Thermalright TL-S12RW CPU/Case Fan Instruction Manual

Model: TL-S12RW

1. INTRODUCTION

The Thermalright TL-S12RW is a high-performance 120mm fan designed for both CPU cooling and case ventilation. It features a reverse airflow design, PWM function for automatic speed adjustment, and addressable RGB (ARGB) lighting. This manual provides essential information for proper installation, operation, and maintenance to ensure optimal performance and longevity of your fan.

2. SAFETY INFORMATION

- Ensure your computer system is powered off and unplugged from the wall outlet before installation or maintenance.
- Handle the fan and its components with care to avoid damage.
- Do not attempt to disassemble the fan motor. It is maintenance-free.
- Keep small parts and packaging materials away from children.
- Refer to your motherboard manual for specific fan header locations and voltage requirements.

3. PACKAGE CONTENTS

- Thermalright TL-S12RW CPU Fan
- Mounting Screws

4. PRODUCT FEATURES

- **PWM Function:** Automatically adjusts fan speed based on motherboard temperature for efficient cooling and noise control.
- **Reverse Airflow Design:** Fan blades rotate counter-clockwise, with the face of the fan blades directing air outwards, making it suitable for intake fan configurations.

- **Silent Operation:** Engineered for low noise levels, operating at 23.2 dBA.
- **S-FDB Bearing:** Equipped with a Fluid Dynamic Bearing (FDB) for high durability, low friction, and quiet operation.
- **Dual Side Pad Shock Absorption:** Silicone rubber pads on each corner reduce noise and vibration.
- **Dual Side Ring ARGB Lighting:** Seamless ARGB lighting ring to enhance PC aesthetics.
- **Durable Construction:** Fan blades and frame are made from industrial-grade PBT combined PC polymers for strength and stability.



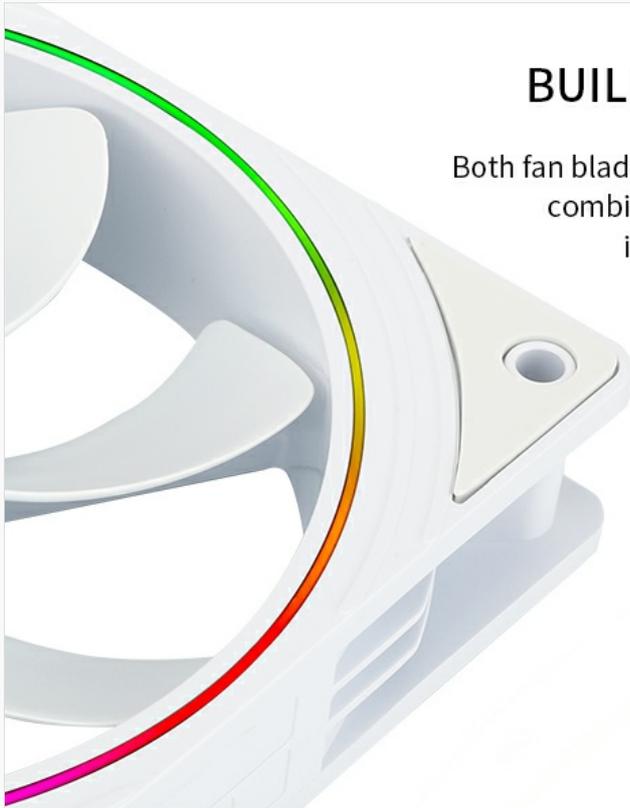
Figure 1: Front view of the Thermalright TL-S12RW fan, highlighting dual side pad shock absorption, airflow fan blade design, and low noise S-FDB bearing.

DUAL SIDE RING ARGB LIGHTING

Seamless ring of ARGB lighting decorates your PC build.



Figure 2: Illustration of the reverse airflow direction of the S12R series fan, with air intake from the frame side and exhaust from the blade side.



BUILD TOUGH, THINK ERGONOMIC

Both fan blades and frame are made with industrial grade PBT combined PC polymers, ensuring strength and stability in computer use cases. Each corner of the fan has silicone rubber pad pre-installed for noise and vibration damping.

Figure 3: Two Thermalright TL-S12RW fans showcasing the dual side ring ARGB lighting.

5. SETUP AND INSTALLATION

Follow these steps to install your Thermalright TL-S12RW fan into your computer case and connect its power and lighting.

5.1 Fan Installation

1. Identify the desired mounting location in your PC case (e.g., bottom, rear, top).
2. Align the fan with the screw holes on the case. Ensure the fan's airflow direction (as shown in Figure 2) matches your desired intake or exhaust configuration.
3. Use the included screws to secure the fan to the case. Tighten screws evenly to prevent warping.

Video 1: Installation guide for Thermalright TL-S12RW series fans, demonstrating how to install fans onto a case using screws.

5.2 PWM Signal Sync Wiring

The TL-S12RW fan features a 4-pin PWM connector for power and speed control. Up to three fans can be connected to a single motherboard fan header using the provided sharing connectors.

1. Connect the 4-pin PWM fan power connector from the fan to the PWM sharing connector.
2. If installing multiple fans, connect additional fan PWM connectors to the sharing header.
3. Connect the main PWM sharing connector to a **CHA_FAN** header on your motherboard. Refer to your motherboard manual for the exact location.

5.3 ARGB Lighting Wiring

The fan's ARGB lighting is controlled via a 3-pin +5V ARGB connector. Ensure proper alignment to avoid damage.

1. Remove the protective caps from the ARGB 3-pin connectors on the fan cables.
2. Connect the fan ARGB connectors to the ARGB sharing connector. Ensure the arrows on both headers are aligned.
3. Connect the main ARGB lighting cable to a **3-pin +5V ARGB header** on your motherboard. **Do not connect to a 4-pin +12V RGB header, as this will damage the LEDs.**

Video 2: Quick start guide for Thermalright case fans, demonstrating PWM and ARGB wiring connections to the motherboard.

6. OPERATING INSTRUCTIONS

Once installed and connected, the Thermalright TL-S12RW fan operates automatically based on your motherboard's settings.

- **Fan Speed Control (PWM):** The fan speed will automatically adjust according to the CPU or system temperature, as configured in your motherboard's BIOS/UEFI settings or through compatible software.
- **ARGB Lighting Control:** The ARGB lighting can be controlled via your motherboard's RGB software (e.g., ASUS Aura Sync, MSI Mystic Light Sync, Gigabyte RGB Fusion, ASRock Polychrome Sync) or a dedicated ARGB controller (if used). Ensure your motherboard software is up-to-date for full compatibility.

7. MAINTENANCE

Regular maintenance helps ensure optimal performance and extends the lifespan of your fan.

- **Cleaning:** Periodically clean the fan blades and frame to remove dust buildup. Use a soft brush or compressed air. Ensure the fan is powered off and unplugged before cleaning.
- **Inspection:** Check cables for any signs of wear or damage. Ensure all connections are secure.
- **Do Not Disassemble:** The S-FDB bearing is designed to be maintenance-free. Do not attempt to disassemble the fan, as this may void your warranty and damage the product.

8. TROUBLESHOOTING

- **Fan Not Spinning:**

- Check if the 4-pin PWM connector is securely plugged into the motherboard fan header.
- Ensure the motherboard fan header is enabled in BIOS/UEFI settings.
- Verify that the power supply is functioning correctly.

- **ARGB Lighting Not Working:**

- Confirm the 3-pin +5V ARGB connector is correctly plugged into the motherboard's ARGB header (not a 12V RGB header).
- Check for proper alignment of the ARGB connectors (arrow to arrow).
- Ensure your motherboard's ARGB software is installed and configured correctly.
- Test with a different ARGB header or controller if available.

- **Excessive Noise/Vibration:**

- Ensure the fan is securely mounted and screws are tightened evenly.
- Check for any cables or obstructions touching the fan blades.
- Clean any dust buildup on the fan blades.

9. SPECIFICATIONS

| Specification | Value |
|-------------------|------------------------------------|
| Model | TL-S12RW |
| Dimensions | 120mm x 120mm x 25mm |
| Rotational Speed | 1500 RPM (Max) |
| Noise Level | 23.2 dBA |
| Air Flow Capacity | 47.6 CFM |
| Air Pressure | 1.31 mm H ₂ O |
| Power Connector | 4-Pin PWM |
| ARGB Connector | 3-Pin +5V ARGB |
| Voltage | 12 Volts |
| Current | 0.15 A |
| Bearing Type | S-FDB (Fluid Dynamic Bearing) |
| Material | Plastic (PBT combined PC polymers) |
| Item Weight | 7 ounces |

10. WARRANTY AND SUPPORT

Thermalright products are manufactured to high-quality standards. For warranty information and technical support, please refer to the official Thermalright website or contact your local distributor. Keep your proof of purchase for warranty claims.