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Thermalright TL-K12W-D2

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Model: TL-K12W-D2

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Thermalright TL-K12W-D2 120mm ARGB CPU Case Fan. This high-performance fan is designed to provide efficient cooling for your desktop computer components while offering customizable ARGB lighting. Please read this manual thoroughly before installation and use to ensure proper function and longevity of your product.

2. SAFETY INFORMATION

- Ensure your computer system is powered off and unplugged from the wall outlet before installation.
- Handle components with care to avoid damage from static electricity. Consider using an anti-static wrist strap.
- Do not attempt to modify the fan or its cables. Unauthorized modifications may void your warranty and pose safety risks.
- Keep the fan away from liquids and excessive moisture.
- Ensure proper cable management to prevent interference with moving parts or other components.

3. PACKAGE CONTENTS

Verify that all items are present in your package:

- Thermalright TL-K12W-D2 120mm ARGB CPU Case Fan
- Mounting Screws
- Adhesive Nails (optional for certain installations)

4. SPECIFICATIONS

Feature	Specification
Model	TL-K12W-D2
Dimensions	120mm x 120mm x 25mm (4.72"L x 0.98"W x 4.72"H)
Speed	2150 RPM \pm 10% (MAX)
Noise Level	\leq 27 dBA
Air Flow	69 CFM (MAX)
Air Pressure	2.87 mm H ₂ O
Power Connector	4-pin PWM
Lighting Interface	3-pin 5V ARGB
Bearing Type	S-FDB V2 Bearing
Voltage	12 Volts
Current (ARGB)	0.2A
Material	Plastic (PBT Polymers)

5. SETUP AND INSTALLATION

Follow these steps to properly install your Thermalright TL-K12W-D2 fan into your computer case or onto a radiator.

5.1 Fan Orientation

It is crucial to install the fan with the correct airflow direction for optimal cooling. The fan blades draw air in from the side with the visible blades and exhaust air from the side with the frame supports.

POWER FROM DESIGN

Updates from design of Thermalright TL-B12 Series, TL-K12W Series performance fan provide minimal Addressable-RGB lighting while maintaining high static pressure performance, able to push air through PC cases or water cooling radiators.



Image: The fan's blade side is the intake, and the frame side is the exhaust. Ensure correct orientation for desired airflow.

For case cooling, typically front fans are intake, and rear/top fans are exhaust. For radiator cooling, ensure the fan pushes or pulls air through the radiator effectively.

5.2 Physical Installation

1. Position the fan in the desired mounting location (e.g., case fan slot, radiator).
2. Align the screw holes on the fan with the mounting holes on your case or radiator.
3. Use the provided mounting screws to secure the fan. Tighten screws evenly to prevent warping.

Updated three axis dynamic balancing process on blade, please do not remove the red balancing material on fan blade.

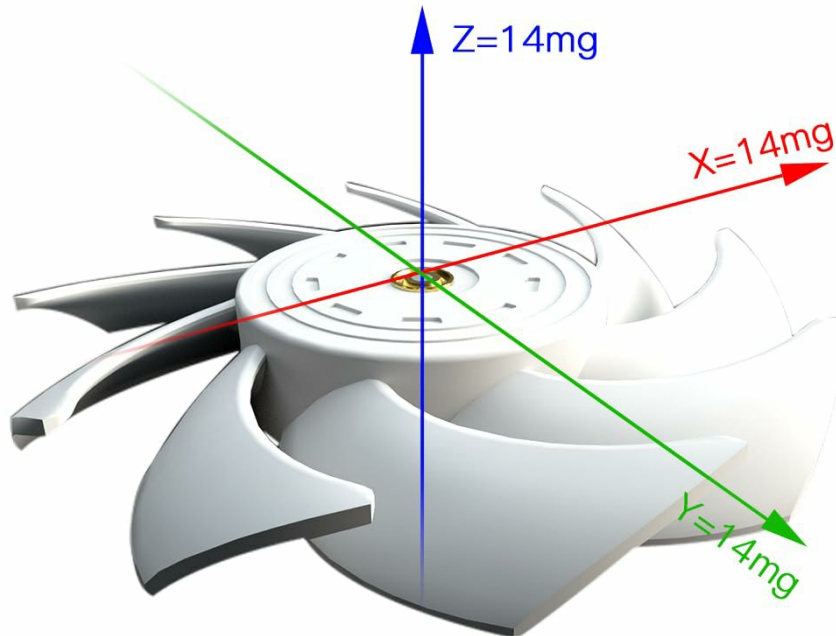


Image: Securing the fan to the computer case using screws. Ensure a firm but not overtightened fit.

5.3 Connecting Power (PWM)

The TL-K12W-D2 fan uses a 4-pin PWM connector for power and speed control.

1. Locate an available 4-pin fan header on your motherboard (often labeled "CPU_FAN", "CHA_FAN", or "SYS_FAN").
2. Connect the fan's 4-pin PWM cable to the motherboard header.
3. If installing multiple fans, you can daisy-chain them using the provided PWM splitter/extension cables. Ensure the total number of connected fans does not exceed the motherboard header's power rating (typically less

than three fans per standard header without a powered hub).

Your browser does not support the video tag.

Video: Demonstrates connecting the 4-pin PWM fan power cable to the motherboard and daisy-chaining multiple fans for speed synchronization. The video also shows ARGB connection.

5.4 Connecting ARGB Lighting

For customizable lighting effects, connect the fan's 3-pin 5V ARGB cable to a compatible motherboard header or ARGB controller.

1. Locate a 3-pin 5V ARGB header on your motherboard (often labeled "ADD_HEADER", "ARGB_HEADER", or "D_LED"). **Note: Do not connect to a 4-pin 12V RGB header, as this will damage the LEDs.**
2. Connect the fan's 3-pin ARGB cable to the motherboard header.
3. If installing multiple ARGB fans or other ARGB components, you can daisy-chain them. Ensure the total number of connected ARGB components does not exceed the motherboard header's power rating (typically less than five components without a powered hub).

Focus on performance from an engineering perspective

Static Pressure 9 blade design outputs rated 69CFM at 2150RPM



Image: The 3-pin 5V ARGB connector for lighting synchronization. This connector is distinct from 4-pin 12V RGB connectors.

6. OPERATING INSTRUCTIONS

6.1 Fan Speed Control (PWM)

The 4-pin PWM connector allows your motherboard to dynamically control the fan speed based on system temperature. This ensures efficient cooling when needed and quiet operation during lighter loads.

- Access your motherboard's BIOS/UEFI settings or use a compatible software utility provided by your motherboard manufacturer (e.g., ASUS AI Suite, MSI Dragon Center, Gigabyte SIV).
- Navigate to the fan control section.
- Set a fan curve or choose a preset profile (e.g., Silent, Standard, Performance) to manage fan speed.

6.2 ARGB Lighting Control

The 3-pin 5V ARGB connector enables synchronization of lighting effects with other ARGB components in your system.

- Use your motherboard's ARGB control software (e.g., ASUS Aura Sync, MSI Mystic Light Sync, Gigabyte RGB Fusion, ASRock Polychrome Sync).
- Select desired lighting modes, colors, and effects.
- Ensure the software detects the connected ARGB devices. If not, check connections and software settings.

7. MAINTENANCE

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

- **Cleaning:** Periodically clean dust from the fan blades and frame using compressed air or a soft brush. Ensure the fan is powered off and unplugged before cleaning. Hold the fan blades gently to prevent them from spinning rapidly during cleaning, which can damage the bearing.
- **Bearing:** The S-FDB V2 bearing is designed for long-term, maintenance-free operation. Do not attempt to disassemble the fan or lubricate the bearing, as this may cause damage.
- **Cable Inspection:** Occasionally check cables for any signs of wear, fraying, or loose connections.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Fan not spinning	Loose or incorrect PWM connection; insufficient power from motherboard header.	Check 4-pin PWM cable connection to motherboard. Try a different fan header. Ensure motherboard BIOS settings are not set to "0 RPM" mode at low temperatures.
ARGB lighting not working	Loose or incorrect ARGB connection; connected to 12V RGB header; software issue.	Verify 3-pin 5V ARGB cable is securely connected to a 5V ARGB header (not 12V RGB). Check motherboard ARGB software for detection and settings. Try updating motherboard drivers/software.
Excessive noise	Dust buildup; loose mounting screws; fan curve too aggressive.	Clean fan blades. Ensure all mounting screws are tightened. Adjust fan curve in BIOS/software to a quieter profile. Check for cable interference with fan blades.
Poor cooling performance	Incorrect fan orientation; insufficient fan speed; dust buildup.	Verify fan is oriented correctly for desired airflow (intake/exhaust). Increase fan speed via PWM control. Clean dust from fan and surrounding components.

9. 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 retailer. Keep your proof of purchase for warranty claims.