

## Thermalright FM240 ARGB V2

# Thermalright Frozen Magic 240 Black ARGB V2 CPU AIO Cooler Instruction Manual

Model: FM240 ARGB V2

## 1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your Thermalright Frozen Magic 240 Black ARGB V2 CPU All-in-One (AIO) Liquid Cooler. Please read this manual carefully before installation to ensure proper setup and optimal performance.

The Thermalright Frozen Magic 240 Black ARGB V2 is a high-performance closed-loop liquid CPU cooler designed to provide efficient thermal management for your processor, featuring Addressable RGB (ARGB) lighting for aesthetic customization.

## 2. PRODUCT OVERVIEW AND COMPONENTS

The Frozen Magic 240 Black ARGB V2 AIO cooler consists of a radiator, two 120mm ARGB fans, a water block with an integrated pump, and connecting tubes. Key features include:

- **Efficient Cooling:** Features a full purple copper mirror plane base, a 240mm black aluminum fin radiator, and polymer-protected water pipes for low resistance and high thermal efficiency.
- **ARGB Synchronization:** The CPU fan and water-cooling header ARGB lighting synchronize with your motherboard's 5V 3-pin ARGB header, offering extensive lighting effects.
- **Dual PWM Fans:** Equipped with two TL-C12B-S V2 fans, offering speeds up to 1600 RPM, low noise operation ( $\leq 28$  dBA), and S-FDB bearings for durability.
- **Wide Compatibility:** Supports a broad range of Intel (LGA 1150/1151/1155/1156/1200/1700/2011/2066) and AMD (AM5/AM4/AM3/AM3+/AM2/AM2+/FM1/FM2/FM2+) sockets.

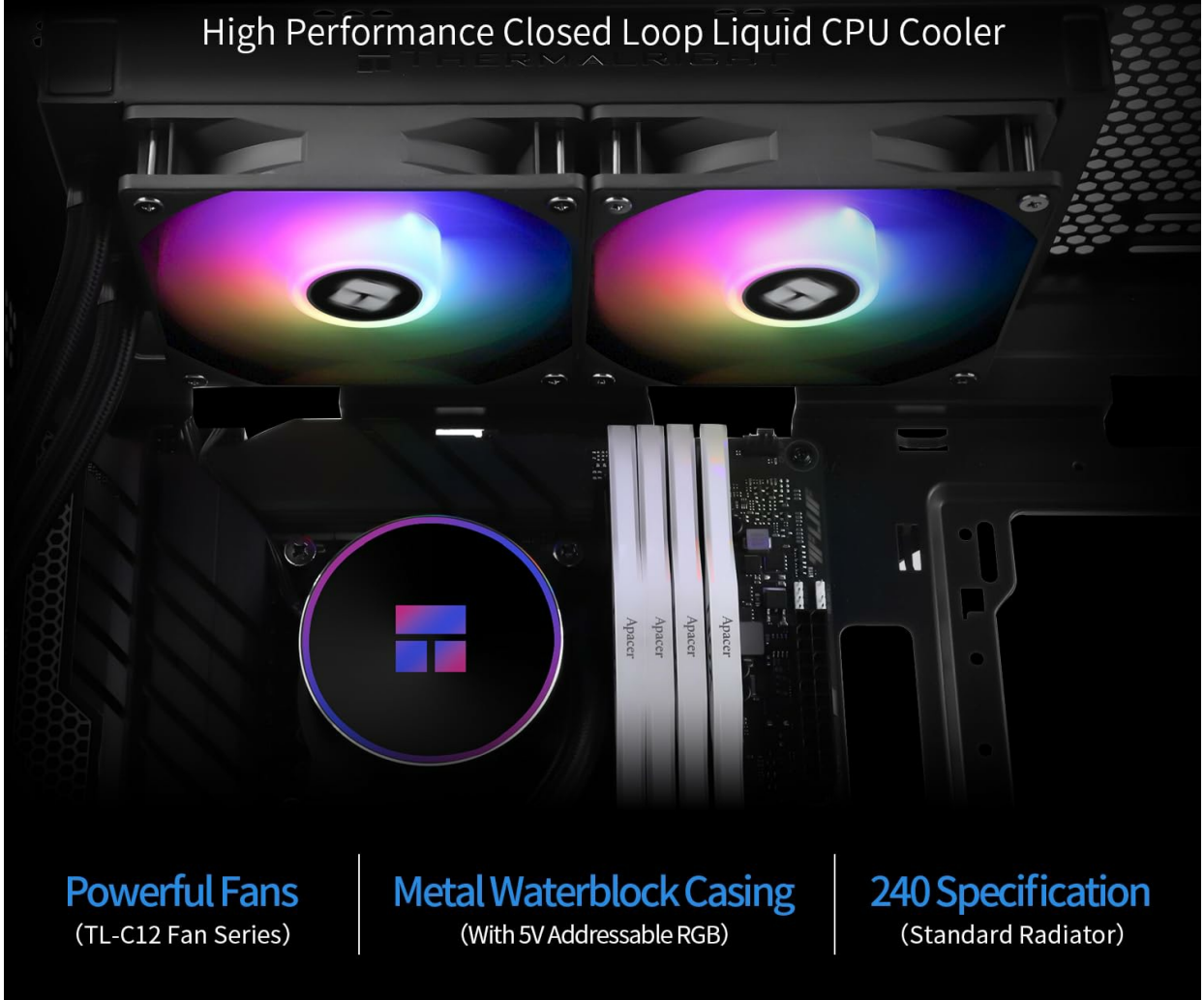


Figure 1: Thermalright Frozen Magic 240 Black ARGB V2 CPU AIO Cooler. This image displays the complete AIO unit, including the radiator with two fans, the water block, and the connecting tubes.



# **FROZEN MAGIC 240 BLACK ARGB V2**

High Performance Closed Loop Liquid CPU Cooler



**Powerful Fans**  
(TL-C12 Fan Series)

**Metal Waterblock Casing**  
(With 5V Addressable RGB)

**240 Specification**  
(Standard Radiator)

Figure 2: Overview of the Frozen Magic 240 Black ARGB V2, highlighting its powerful fans, metal waterblock casing with 5V Addressable RGB, and 240mm standard radiator specification.

# TL-C12B-S V2

Thermalright engineered fan blades have high static-pressure performance, optimized for radiator use. Each fan is equipped with high precision S-FDB bearing for low noise operation and high durability. With PWM control, the fan is able to adjust its speed automatically according to system load.



Figure 3: Detailed view of the TL-C12B-S V2 fan, showcasing its high airflow (72 CFM), S-FDB bearing, quiet operation (1600 RPM  $\pm$ 10%), and 4-pin PWM connector. Also visible are shock-absorbing silicone pads and PBT material for durability.

## 3. SAFETY INFORMATION

Please observe the following safety guidelines during installation and operation:

- Ensure your computer system is powered off and unplugged from the wall outlet before beginning installation.
- Handle components with care to avoid damage.
- Refer to your motherboard manual for specific header locations and power connections.
- Do not attempt to open or modify the AIO unit, as this may void the warranty and cause damage.
- Keep the product away from liquids and extreme temperatures.

## 4. SETUP AND INSTALLATION

The installation process involves mounting the radiator, fans, and water block to your CPU. Ensure your chassis has adequate space for a 240mm radiator. A chassis width greater than 250mm is recommended.

## 4.1. Package Contents

Verify that all components are present:

- Thermalright Frozen Magic 240 Black ARGB V2 AIO Water Cooler (Radiator, Pump/Water Block, 2x Fans pre-mounted)
- Mounting hardware for Intel sockets (LGA 1150/1151/1155/1156/1200/1700/2011/2066)
- Mounting hardware for AMD sockets (AM5/AM4/AM3/AM3+/AM2/AM2+/FM1/FM2/FM2+)
- Y-adapter cable for fan power
- ARGB connection cable
- Thermal paste (pre-applied or included)

## 4.2. Motherboard Compatibility

**Support motherboards:**

**Intel:**  
LGA115X/1200/2011 square  
/2066/1851/1700

**AMD:**  
AM4/AM5

**THERMALRIGHT®**  
low Temperature high Performance

**Special design water channels inside radiator allows lower water resistance and higher flow rate, resulting better cooling performance.**

**Water tubes are protected by polymer sleeves for low liquid evaporation, further extends the life span of whole all-in-one liquid cooler.**

Figure 4: Supported motherboard sockets for Intel (LGA115X/1200/2011 square/2066/1851/1700) and AMD (AM4/AM5). The image also illustrates the special design water channels in the radiator and polymer-sleeved water tubes for enhanced durability and performance.

## 4.3. General Installation Steps

1. **Prepare the CPU:** Clean the CPU surface thoroughly, removing any old thermal paste.

2. **Install Backplate (if required):** For Intel sockets, install the appropriate backplate behind the motherboard. AMD AM4/AM5 typically uses the stock backplate.
3. **Mount Standoffs:** Screw the correct standoffs for your CPU socket onto the backplate or motherboard.
4. **Apply Thermal Paste:** If not pre-applied, apply a small amount of thermal paste to the center of the CPU's integrated heat spreader (IHS).
5. **Mount Water Block:** Carefully place the water block onto the CPU, aligning the mounting holes with the standoffs. Secure it with the provided thumb screws or nuts, tightening in a diagonal pattern until snug.
6. **Install Radiator:** Mount the 240mm radiator to an available fan mount location in your chassis (e.g., top, front). Ensure proper airflow direction.
7. **Connect Fans:** The fans are typically pre-mounted to the radiator. Connect both fan power cables to the provided Y-adapter cable, then connect the Y-adapter to your motherboard's CPU\_FAN header.
8. **Connect ARGB:** Connect the ARGB cables from the fans and water block to the motherboard's 5V 3-pin ARGB header. **Note: This cooler only supports 5V 3-pin ARGB. Do NOT connect to a 12V 4-pin RGB header.**



Figure 5: Illustration showing the cooler installed in a PC case, emphasizing that it only supports 5V 3-pin ARGB and not 12V 4-pin RGB connections.

## SIMPLE INSTALL

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New cooler mounting kits offers easy experience and secure mounting pressure. Fans are factory pre-mounted to simplify installation process. Paired with Premium accessories, it ensures best out-of-box performance on any system.

Figure 6: Depiction of the simple installation process, highlighting the factory pre-mounted fans and secure mounting kits for easy setup.

## 5. OPERATING INSTRUCTIONS

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Once installed, the Thermalright Frozen Magic 240 Black ARGB V2 operates automatically. The fans and pump are controlled via PWM (Pulse Width Modulation) signals from your motherboard, adjusting speed based on CPU temperature.

### 5.1. ARGB Lighting Control

The Addressable RGB lighting on the fans and water block can be controlled through your motherboard's ARGB software (e.g., ASUS Aura Sync, MSI Mystic Light Sync, GIGABYTE RGB Fusion, ASRock Polychrome Sync). Ensure the 5V 3-pin ARGB header is correctly connected.

## ALUMINIUM CASING WATERBLOCK WITH MIRROR FINISH PANEL, DECORATING WITH HALO ADDRESSABLE RGB LIGHTING



Figure 7: Close-up of the water block, featuring its aluminum casing, mirror finish panel, and halo Addressable RGB lighting. The image also indicates an updated pump design with a speed of 2800 RPM  $\pm$ 10%.

## 6. MAINTENANCE

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

- **Dust Removal:** Periodically clean dust from the radiator fins and fan blades using compressed air. Ensure fans are not spinning during cleaning.
- **Inspect Tubing:** Check the water tubes for any signs of kinks, leaks, or damage. The polymer compilation protection helps prevent liquid evaporation.
- **Thermal Paste:** While not frequently required for AIOs, if you ever remove the water block from the CPU, you must clean off old thermal paste and apply new thermal paste before reinstallation.

## 7. TROUBLESHOOTING

If you encounter issues with your Thermalright Frozen Magic 240 Black ARGB V2, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
High CPU Temperatures	<p>Improper water block mounting</p> <p>Insufficient thermal paste</p> <p>Fans not spinning or spinning too slowly</p> <p>Pump not functioning</p> <p>Radiator clogged with dust</p>	<p>Re-seat water block, ensuring even pressure.</p> <p>Re-apply thermal paste.</p> <p>Check fan connections to CPU_FAN header; ensure PWM is enabled in BIOS.</p> <p>Verify pump connection to AIO_PUMP or CPU_OPT header; check BIOS settings.</p> <p>Clean radiator fins with compressed air.</p>
ARGB Lighting Not Working	<p>Incorrect ARGB header connection</p> <p>Motherboard ARGB software issue</p> <p>Faulty ARGB component</p>	<p>Ensure connection to a 5V 3-pin ARGB header, not 12V 4-pin RGB.</p> <p>Update or reinstall motherboard ARGB software.</p> <p>Check individual ARGB connections for fans and water block.</p>
Excessive Fan Noise	<p>Fans running at maximum speed</p> <p>Loose fan screws</p> <p>Dust accumulation</p>	<p>Adjust fan curves in BIOS or motherboard software.</p> <p>Tighten fan screws on the radiator.</p> <p>Clean fans and radiator.</p>

## 8. SPECIFICATIONS

Detailed technical specifications for the Thermalright Frozen Magic 240 Black ARGB V2 CPU AIO Cooler:

Component	Specification
Model	Frozen Magic 240 Black ARGB V2
Water Block Dimensions	72mm * 72mm * 52.5mm
Radiator Dimensions	270mm * 120mm * 27mm
Pump Connector	4-Pin PWM
Pump Speed	2800 RPM $\pm$ 10%
Fan Model	TL-C12B-S V2
Fan Dimensions	120mm * 120mm * 25mm
Fan Rated Speed	1600 RPM $\pm$ 10%
Fan Rated Noise	$\leq$ 28 dBA
Fan Air Flow	72 CFM (MAX)
Fan Static Pressure	1.88 mmH <sub>2</sub> O (MAX)
Fan Connector	4-Pin PWM
Fan Rated Voltage	DC 12V
Fan Rated Current	0.20A (MAX)

Component	Specification
Fan Bearing Type	S-FDB Bearing
ARGB Connector	5V 3-Pin ARGB
Material	Aluminum, Plastic (Radiator, Water Block Casing)
Compatible CPU Sockets	Intel: LGA 1150/1151/1155/1156/1200/1700/2011/2066 AMD: AM5/AM4/AM3/AM3+/AM2/AM2+/FM1/FM2/FM2+



## FROZEN MAGIC 240 BLACK ARGB V2 SPECIFICATION

HEATSINK	SPECIFICATION	TL-C12B-S V2	SPECIFICATION
Water Block Dimensions	72mm * 72mm * 52.5mm	Fan Dimensions	120mm * 120mm * 25mm
Radiator Dimensions	270mm * 120mm * 27mm	Fan Rated Speed	1600RPM±10%
Pump Connector	4PIN PWM	Fan Rated Noise	≤28dBA
		Fan Air Flow	72CFM(MAX)
		Fan Static Pressure	1.88mm/H <sup>2</sup> O(MAX)
		Fan Connector	4PIN PWM
		Fan Rated Voltage	DC 12V
		Fan Rated Current	0.20A(MAX)
		Fan Bearing Type	S-FDB Bearing

Figure 8: An overall view of the Thermalright Frozen Magic 240 Black ARGB V2 All-in-one CPU Liquid Cooler, emphasizing its design and components.



## SHINE YOUR SETUP

Each water block comes with fine machined Aluminum casing, offers better protection and touch than plastic. Waterblock is equipped with Addressable RGB halo ring lighting, which can be controlled and synchronized by supported motherboard software.

Figure 9: A detailed table of specifications for the heatsink, water block, radiator, pump, and TL-C12B-S V2 fans, including dimensions, speeds, noise levels, and airflow.

### 9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Thermalright website or contact your retailer. Keep your proof of purchase for warranty claims.

If you have any questions or require assistance with installation or troubleshooting, please feel free to contact Thermalright customer service.