

## ARCTIC ACFRE00179A

# ARCTIC Liquid Freezer III Pro 280 AIO CPU Cooler Instruction Manual

Model: ACFRE00179A

## 1. INTRODUCTION

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This manual provides detailed instructions for the installation, operation, and maintenance of your ARCTIC Liquid Freezer III Pro 280 All-In-One (AIO) CPU Cooler. This high-performance liquid cooling solution is designed to efficiently dissipate heat from your CPU, ensuring stable and optimal performance for your system. It features a 280mm radiator, two 140mm fans, a PWM-controlled pump, and an integrated VRM fan, compatible with AMD AM5/AM4 and Intel LGA1851/1770 sockets.

## 2. SAFETY INFORMATION

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- Always disconnect power from your computer before installation or maintenance.
- Handle components with care to avoid damage.
- Ensure proper grounding to prevent electrostatic discharge (ESD).
- Keep the cooler and its components away from liquids and extreme temperatures.
- Do not attempt to open or modify the sealed liquid cooling loop.
- Consult a professional if you are unsure about any installation steps.

## 3. PACKAGE CONTENTS

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Verify that all components are present before beginning installation:

- ARCTIC Liquid Freezer III Pro 280 AIO Cooler (Radiator with pre-installed fans, pump with integrated VRM fan, and tubing)
- Mounting hardware for AMD AM5/AM4 sockets
- Mounting hardware for Intel LGA1851/1770 sockets (including contact frame)
- ARCTIC MX-6 Thermal Paste (pre-applied or included separately)

- User Manual (this document, typically digital)



Image 1: Overview of the ARCTIC Liquid Freezer III Pro 280 AIO CPU Cooler, showing the radiator with two fans, pump block with integrated VRM fan, and braided tubing.

## 4. SETUP AND INSTALLATION

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Before installation, ensure your PC case has adequate space for a 280mm radiator (317mm length, 38mm radiator thickness, 65mm total thickness with fans). Refer to your case manufacturer's specifications.

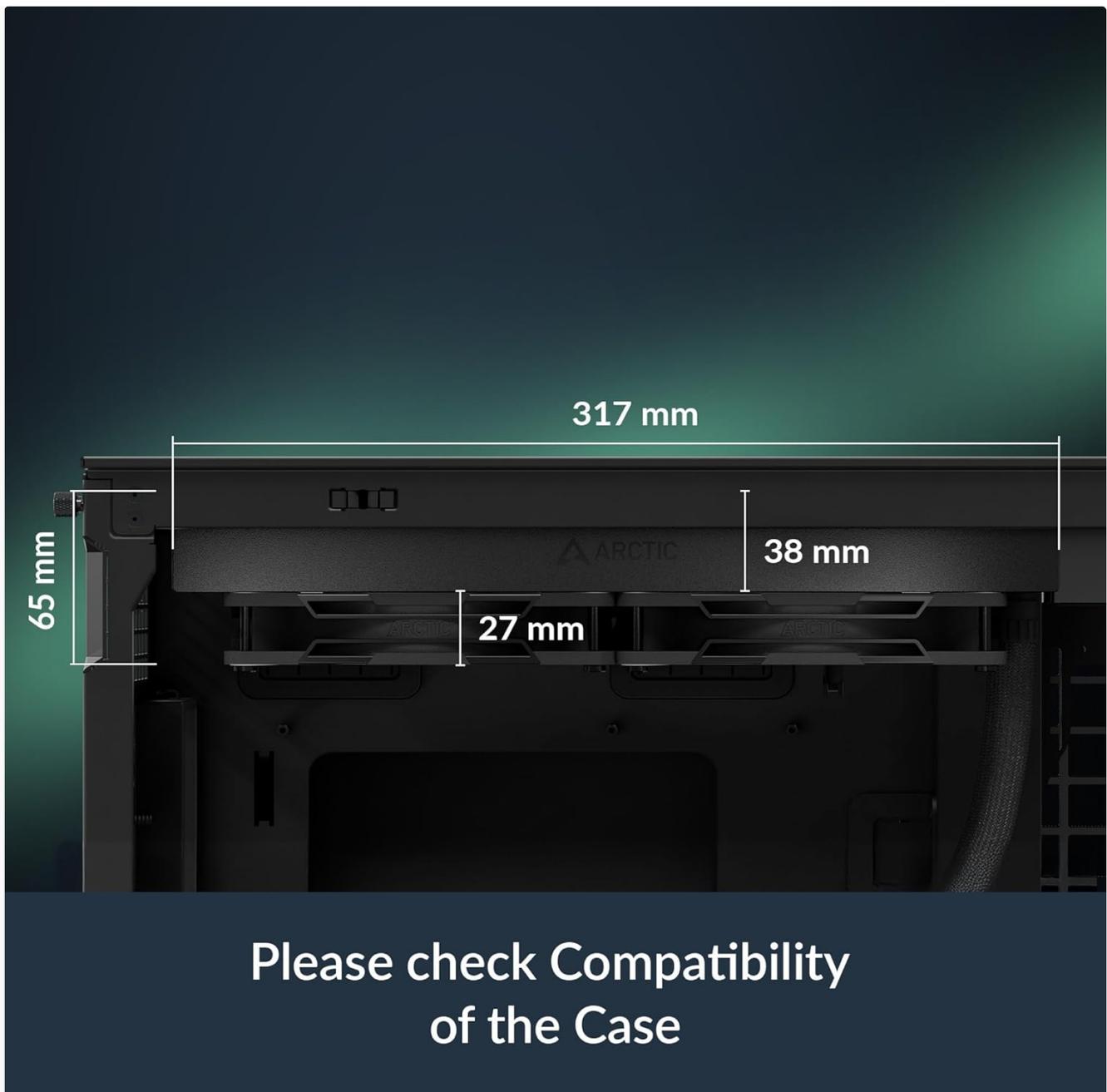


Image 2: Radiator dimensions for compatibility check. The radiator is 317mm long, 38mm thick, with a total thickness of 65mm including fans.

#### 4.1. Pre-Installation Steps

1. **Prepare your system:** Power off your computer and disconnect all cables. Open your PC case.
2. **Remove existing cooler:** Carefully remove your current CPU cooler and clean any old thermal paste from the CPU IHS (Integrated Heat Spreader) using isopropyl alcohol.
3. **Identify mounting location:** Determine where you will mount the 280mm radiator in your case (e.g., top, front).

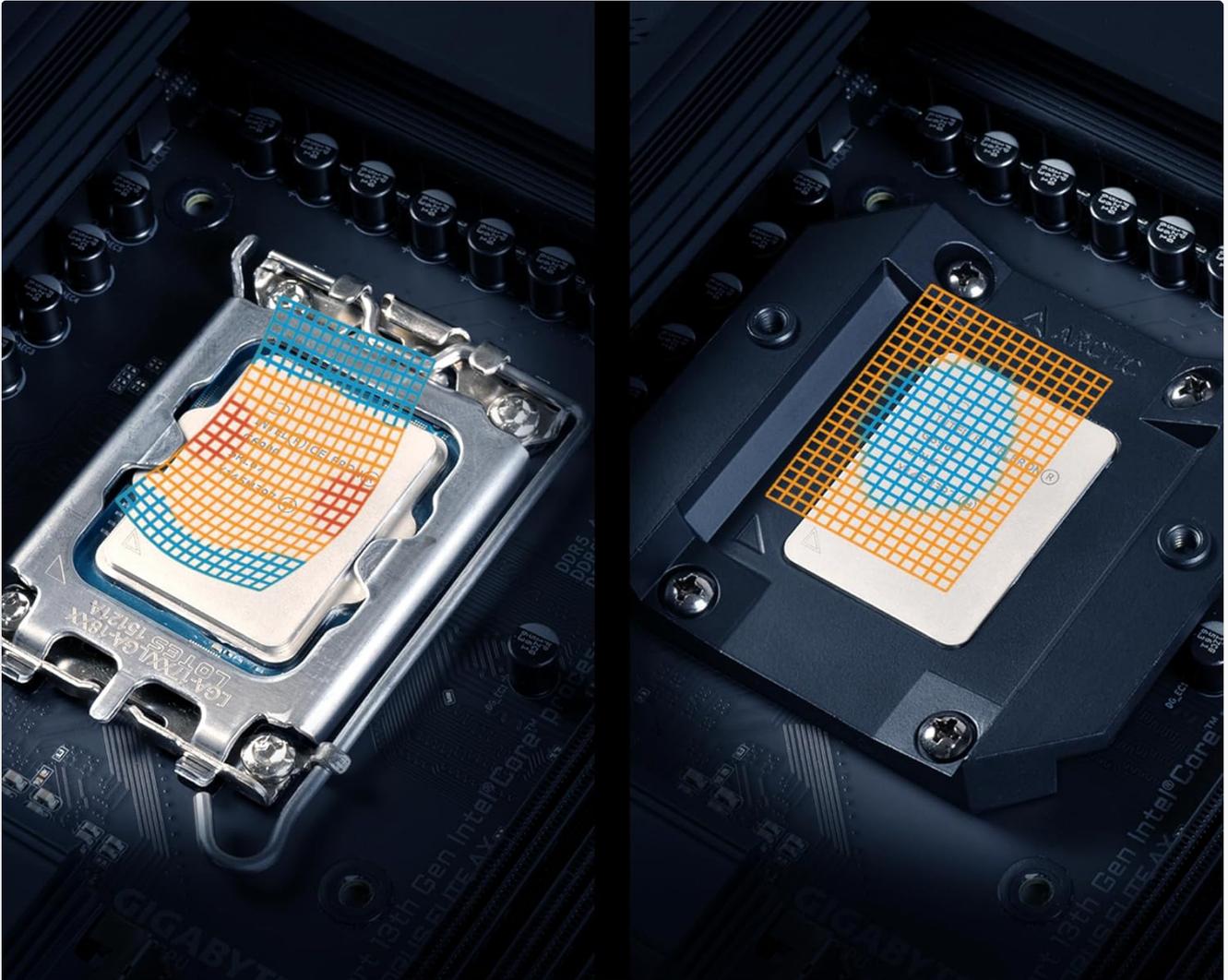
#### 4.2. Intel LGA1851 / LGA1700 Installation (with Contact Frame)

The Liquid Freezer III Pro 280 includes a contact frame for Intel LGA1851/1700 sockets to optimize contact pressure and heat dissipation.

##### 1. Install Intel Contact Frame:

- Carefully remove the CPU retention mechanism from your motherboard.
- Place the Intel contact frame over the CPU socket, aligning it with the screw holes.

- Secure the contact frame using the provided screws. Tighten screws evenly until snug, but do not overtighten to avoid damaging the motherboard or CPU socket.
2. **Apply Thermal Paste:** If not pre-applied, apply a small amount of ARCTIC MX-6 thermal paste to the center of the CPU IHS.
  3. **Mount Pump Block:**
    - Position the pump block onto the CPU, ensuring the cold plate makes full contact with the CPU IHS.
    - Secure the pump block using the appropriate Intel mounting brackets and screws. Tighten screws in a diagonal pattern until firm.



## LGA1851 | LGA1700 Contact Frame

Image 3: Illustration of the Intel LGA1851/1700 Contact Frame, designed to improve contact pressure and heat transfer to the cold plate.

### 4.3. AMD AM5 / AM4 Installation

The cooler utilizes native offset mounting for AMD sockets to align the cold plate with the CPU hotspot for improved heat transfer.

1. **Prepare AMD Backplate:** Ensure the stock AMD backplate is installed on your motherboard.

2. **Apply Thermal Paste:** If not pre-applied, apply a small amount of ARCTIC MX-6 thermal paste to the center of the CPU IHS.

3. **Mount Pump Block:**

- Attach the AMD mounting brackets to the pump block.
- Position the pump block onto the CPU, ensuring the cold plate makes full contact. The offset design will naturally position the cold plate for optimal cooling.
- Secure the pump block to the stock AMD backplate using the provided thumb screws or nuts. Tighten screws in a diagonal pattern until firm.

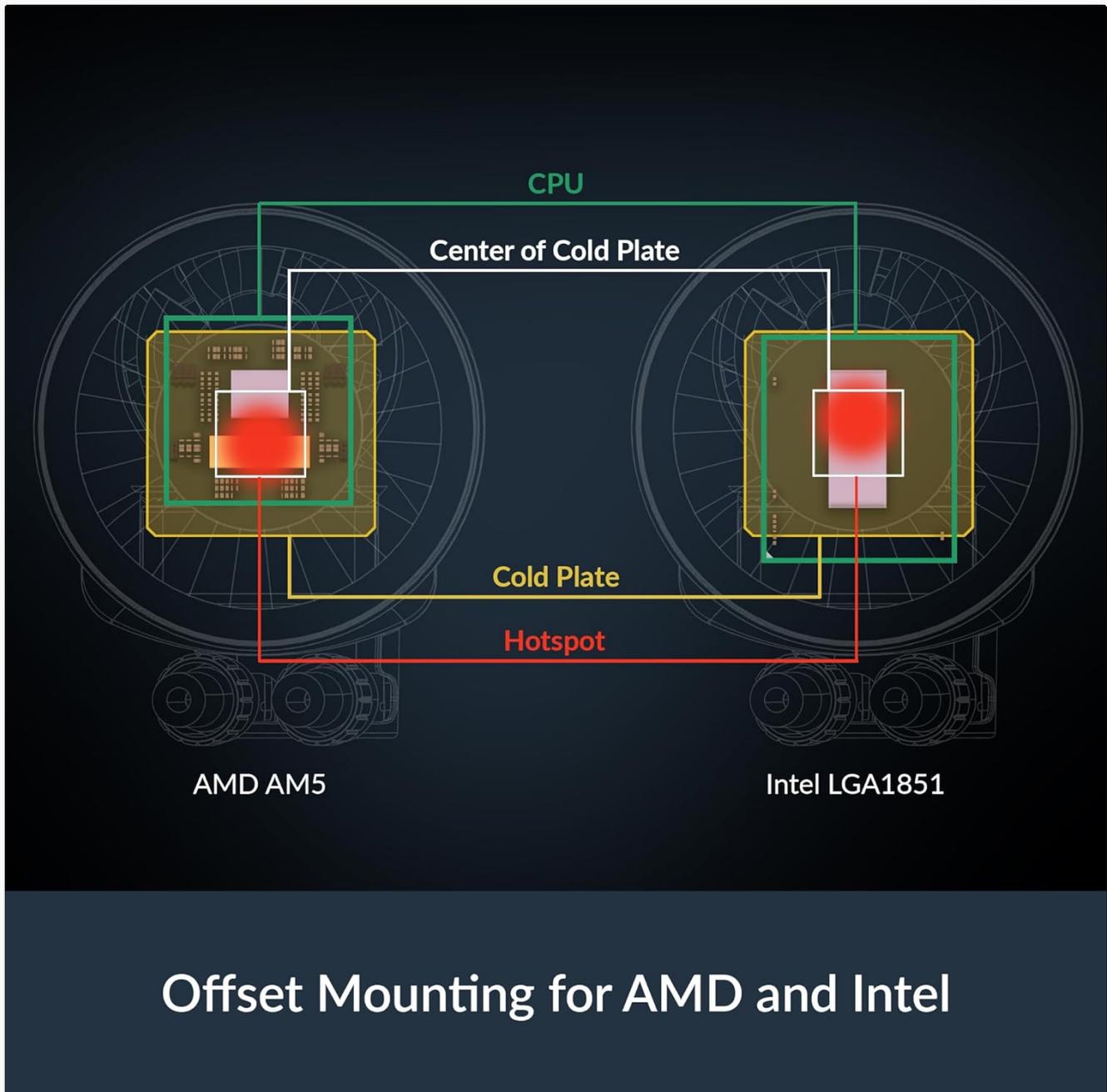


Image 4: Diagram illustrating the offset mounting principle for AMD AM5 and Intel LGA1851, ensuring the cold plate covers the CPU's hotspot for efficient heat transfer.

#### 4.4. Radiator and Fan Installation

1. **Mount Radiator:** Secure the radiator with the pre-installed fans to your chosen mounting location in the PC case using the provided screws. Ensure proper airflow direction (typically intake or exhaust depending on case configuration).
2. **Cable Management:** The PWM cables for the radiator fans are integrated into the hose sleeving. Connect the

single visible cable from the pump block to the CPU\_FAN or AIO\_PUMP header on your motherboard. The integrated VRM fan also connects via this single cable.



## Pre-installed Fans & Integrated Cable Management

Image 5: The cooler features pre-installed fans and integrated cable management, simplifying installation and reducing cable clutter within the PC case.

## Temperature of the Voltage Regulator Modules in °C



i9 13900KF, PPT@200 W; MSI PRO B660M-A WIFI; AIDA64 FPU Stress Test;  $T_{(amb)}$ : 23 °C

## Active VRM Cooling through PWM-Controlled Fan

Image 6: Connection options for the cooler. The "All-In-One" connector simplifies wiring by consolidating VRM fan, radiator fan, and pump connections into a single motherboard header.

### 5. OPERATING INSTRUCTIONS

The ARCTIC Liquid Freezer III Pro 280 is designed for optimal performance with minimal user intervention after installation.

- **PWM Control:** The pump, radiator fans (ARCTIC P14 Pro), and integrated VRM fan are all PWM-controlled. This allows your motherboard or system software to dynamically adjust their speeds based on CPU temperature, providing efficient cooling and reduced noise levels when not under heavy load.
- **BIOS/Software Configuration:** Access your motherboard's BIOS/UEFI settings or use compatible fan control software to configure the fan curve for the CPU\_FAN or AIO\_PUMP header. This allows you to customize the cooler's performance and noise profile to your preference.
- **VRM Cooling:** The integrated VRM fan actively cools the voltage regulator modules around the CPU socket, contributing to overall system stability and longevity, especially during high CPU loads.



**Fan Speed**  
400–2500 rpm



**Static Pressure**  
5.2 mm H<sub>2</sub>O



**Airflow**  
110 cfm | 186 m<sup>3</sup>/h

## ARCTIC P14 Pro Fan

Image 7: Specifications for the ARCTIC P14 Pro Fan, highlighting its fan speed range (400-2500 rpm), static pressure (5.2 mm H<sub>2</sub>O), and airflow (110 cfm | 186 m<sup>3</sup>/h).



Image 8: A bar chart demonstrating the effectiveness of active VRM cooling. The Liquid Freezer III Pro shows significantly lower VRM temperatures compared to the Liquid Freezer II and systems without active VRM ventilation.

## 6. MAINTENANCE

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

- **Dust Cleaning:** Periodically clean dust from the radiator fins and fan blades using compressed air or a soft brush. Ensure fans are not spinning during cleaning.
- **Check Connections:** Occasionally check all cable connections (PWM, power) to ensure they are secure.
- **Inspect Tubing:** Visually inspect the tubing for any signs of kinks, leaks, or damage. While the loop is sealed and maintenance-free, external damage can occur.
- **Thermal Paste:** The pre-applied thermal paste is designed for long-term use. Re-application is generally not necessary unless the cooler is removed from the CPU. If re-applying, use a high-quality thermal compound like ARCTIC MX-6.

## 7. TROUBLESHOOTING

If you encounter issues with your ARCTIC Liquid Freezer III Pro 280, refer to the following common solutions:

Problem	Possible Cause	Solution
<b>High CPU Temperatures</b>	Improper cold plate contact Insufficient thermal paste Fans not spinning or spinning too slowly Radiator clogged with dust Pump malfunction	Re-seat pump block, ensure even pressure. Check thermal paste application; re-apply if necessary. Verify fan connections and BIOS/software fan curve settings. Clean radiator fins. Check pump connection; listen for pump operation.
<b>Excessive Noise</b>	Fans spinning too fast Vibration Pump noise	Adjust fan curve in BIOS/software to lower speeds at idle/low load. Ensure all screws are tightened; check for contact with other components. Ensure pump is running at a stable speed (usually 100% for AIO pumps).
<b>Cooler Not Detected / Fans Not Spinning</b>	Incorrect cable connection Motherboard header issue	Verify the "All-In-One" cable is securely connected to the CPU_FAN or AIO_PUMP header. Test with a different fan header if available.
<b>Physical Fit Issues</b>	Case incompatibility Interference with other components	Double-check case dimensions against cooler specifications (Image 2). Adjust radiator/fan position if possible; ensure no components are obstructing.

## 8. SPECIFICATIONS

Feature	Detail
<b>Model Number</b>	ACFRE00179A
<b>Product Dimensions (Radiator)</b>	12.4"L x 5.4"W x 1.5"H (approx. 315mm x 137mm x 38mm)
<b>Total Product Dimensions (with fans)</b>	Approx. 12.48 x 5.51 x 2.66 inches (approx. 317mm x 140mm x 67.5mm)
<b>Weight</b>	4.2 Pounds (approx. 1.9 kg)
<b>Cooling Method</b>	Liquid
<b>Compatible Devices</b>	Desktop CPUs (AMD AM5/AM4, Intel LGA1851/1770)

Feature	Detail
Radiator Material	Aluminium
Cold Plate Material	Copper (Micro Skived fins)
Fan Type	2 x 140mm ARCTIC P14 Pro PWM Fans
Fan Speed	400 - 2500 RPM (P14 Pro Fans)
Airflow	110 CFM (186 m <sup>3</sup> /h) per fan
Static Pressure	5.2 mm H <sub>2</sub> O per fan
Noise Level	0.08 Sones (P14 Pro Fans)
Pump Type	PWM Controlled
VRM Fan	Integrated, PWM Controlled
Power Connector	4-Pin PWM
Voltage	12 Volts
Wattage	4.2 Watts (total cooler)

## 9. WARRANTY AND SUPPORT

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ARCTIC products are designed for reliability and performance. For warranty information and technical support, please refer to the official ARCTIC website or contact their customer service directly.

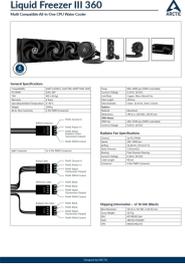
**Manufacturer:** ARCTIC

**Official Website:** [www.arctic.ac](http://www.arctic.ac)

For specific inquiries or troubleshooting assistance not covered in this manual, please visit the ARCTIC support page or contact their technical support team.

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This manual is for informational purposes only. Specifications are subject to change without notice.

	<p><a href="#">ARCTIC Liquid Freezer III 280 CPU Water Cooler - Technical Specifications</a></p> <p>Comprehensive technical specifications, performance data, and dimensional details for the ARCTIC Liquid Freezer III 280 All-in-One CPU Water Cooler. Covers compatibility, pump and fan performance, and shipping information.</p>
	<p><a href="#">ARCTIC Liquid Freezer III 240 AIO CPU Cooler: Specifications and Compatibility</a></p> <p>Detailed specifications, compatibility, and performance data for the ARCTIC Liquid Freezer III 240 All-in-One CPU Water Cooler, including fan speeds, dimensions, and shipping information.</p>
	<p><a href="#">ARCTIC Liquid Freezer III 360 A-RGB CPU Cooler - Technical Specifications and Overview</a></p> <p>Comprehensive technical specifications, dimensions, performance data, and shipping information for the ARCTIC Liquid Freezer III 360 A-RGB All-in-One CPU Water Cooler. Compatible with Intel LGA1851/1700 and AMD AM5/AM4 sockets.</p>
	<p><a href="#">ARCTIC Liquid Freezer III 360 All-in-One CPU Water Cooler Specifications and Features</a></p> <p>Detailed specifications, features, and dimensions for the ARCTIC Liquid Freezer III 360, a multi-compatible all-in-one CPU water cooler. Includes information on pump, radiator, fans, compatibility, and shipping.</p>
	<p><a href="#">ARCTIC Liquid Freezer II 280 CPU Water Cooler Specifications and Features</a></p> <p>Detailed specifications, features, and shipping information for the ARCTIC Liquid Freezer II 280, a multi-compatible all-in-one CPU water cooler. Includes technical data on pump, fans, radiator, and compatibility.</p>
	<p><a href="#">ARCTIC Liquid Freezer II 240: Multi-Compatible All-In-One CPU Water Cooler</a></p> <p>Detailed information on the ARCTIC Liquid Freezer II 240, a multi-compatible all-in-one CPU water cooler featuring an in-house developed PWM-controlled pump, high-performance P-fans, and a maintenance-free water loop. Includes specifications, features, and compatibility information.</p>



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ACFRE00179A Liquid Freezer III Pro 280 CE Declaration Vincent Andre 360 0KBARCTIC DocumentationACFRE00179A 2025 01 20support arctic de products liquid freezer iii pro 20 ||| ARCTIC HK Ltd. Unit 1302-05, The Octagon 6 Sha Tsui Road Tsuen Wan, N.T. Hong-Kong ARCTIC Liquid ... rided below : Brand : Product Name : Part Number : UPC : EAN : ARCTIC Liquid Freezer III Pro 280 **ACFRE00179A** 84003340298-9 489526500031-7 Is in conformity with: - EC Directive 2011/65/EC incl. 20... lang:de score:30 filesize: 359.95 K page\_count: 3 document date: 2025-01-20



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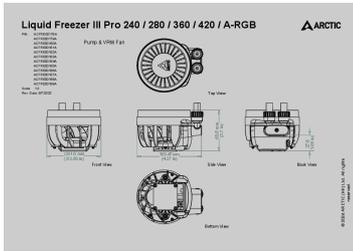
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[ARCTIC Liquid Freezer III Pro 280 AIO CPU Cooler Specifications](#)

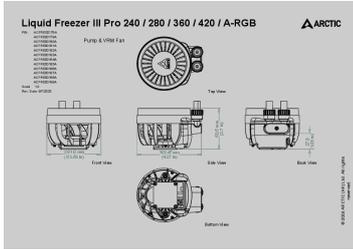
Detailed specifications for the ARCTIC Liquid Freezer III Pro 280, a multi-compatible all-in-one CPU water cooler, including compatibility, dimensions, fan speeds, and shipping information. lang:en score:26 filesize: 1.16 M page\_count: 3 document date: 2025-03-26



### [ARCTIC Liquid Freezer III Pro Series: Technical Drawings and Specifications](#)

Detailed technical drawings and dimensional specifications for the ARCTIC Liquid Freezer III Pro series of CPU liquid coolers, including 240mm, 280mm, 360mm, and 420mm A-RGB models.

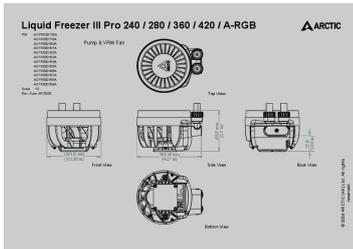
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### [ARCTIC Liquid Freezer III Pro Series: 240, 280, 360, 420, A-RGB Technical Specifications](#)

Detailed technical drawings and dimensions for the ARCTIC Liquid Freezer III Pro series of All-in-One (AIO) liquid CPU coolers, including variants for 240mm, 280mm, 360mm, 420mm, and A-RGB models. Features part numbers and key measurements for pump, VRM fan, and radiator assemblies.

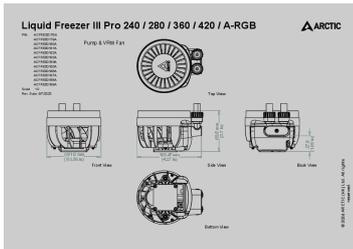
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### [ARCTIC Liquid Freezer III Pro Series 240/280/360/420 A-RGB - Technical Specifications](#)

Detailed 2D technical drawings and specifications for the ARCTIC Liquid Freezer III Pro series of All-in-One (AIO) liquid CPU coolers, including dimensions for pump, radiator, and fan units.

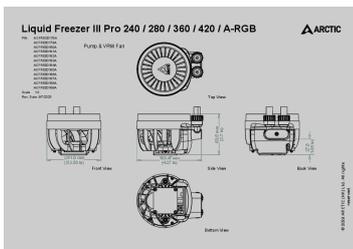
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### [ARCTIC Liquid Freezer III Pro Series 2D Drawings and Specifications](#)

Detailed 2D drawings and specifications for the ARCTIC Liquid Freezer III Pro series, including models 240, 280, 360, and 420, with A-RGB lighting. Includes part numbers, dimensions, and views of the pump/VRM unit and radiator/fan assemblies.

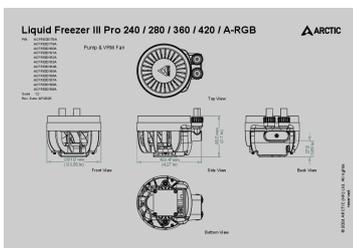
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### [ARCTIC Liquid Freezer III Pro Series: Technical Specifications and Dimensions](#)

Detailed technical specifications and dimensional drawings for the ARCTIC Liquid Freezer III Pro CPU cooler series, including 240mm, 280mm, 360mm, and 420mm A-RGB models.

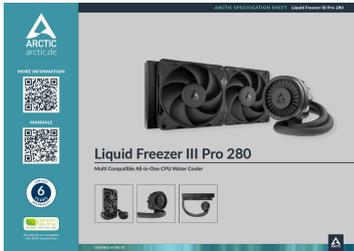
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### [ARCTIC Liquid Freezer III Pro Series: Technical Specifications and Dimensional Drawings](#)

Detailed technical specifications and dimensional drawings for the ARCTIC Liquid Freezer III Pro series of All-in-One (AIO) CPU liquid coolers, including 240, 280, 360, and 420 A-RGB models.

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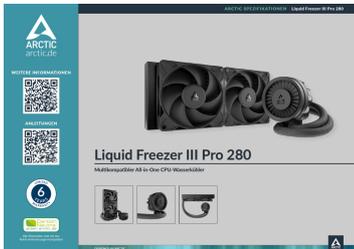


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ARCTIC SPECIFICATION SHEET Liquid Freezer III Pro 280 MORE INFORMATION MANUALS LIMITED W A R R A N ... iquid Freezer III Pro 280 Box Dimension 335 L x 170 W x 155 H mm Gross Weight 2322g SKU **ACFRE00179A** EAN 4895265000317 UPC 840033402989 PWM Control Curve 3000 2500 2000 1500 1000 ...

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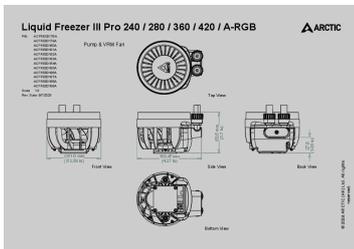


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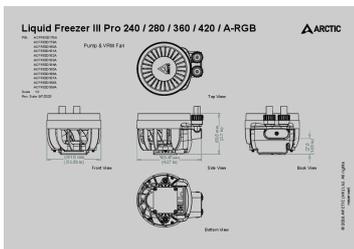
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[ARCTIC Liquid Freezer III Pro Series Technical Specifications and Diagrams](#)

Detailed technical drawings and specifications for the ARCTIC Liquid Freezer III Pro series of CPU liquid coolers, including models 240, 280, 360, 420, and A-RGB variants. Features dimensions and part numbers for pump/VRM module and 360mm radiator/fan module.

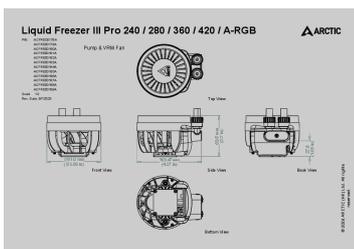
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[ARCTIC Liquid Freezer III Pro Series: Technical Drawings and Dimensions](#)

Detailed 2D drawings and dimensions for the ARCTIC Liquid Freezer III Pro series (240, 280, 360, 420, A-RGB) CPU coolers, including pump/VRM fan and radiator/fan unit specifications.

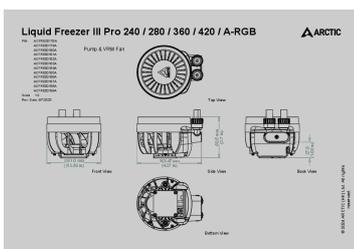
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[ARCTIC Liquid Freezer III Pro Series: Technical Specifications and Dimensions](#)

Detailed technical drawings and dimensions for the ARCTIC Liquid Freezer III Pro series CPU coolers, including models 240, 280, 360, 420, and A-RGB variants. Features P/N information and various views.

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[ARCTIC Liquid Freezer III Pro Series: Technical Specifications and Dimensions](#)

Detailed technical specifications and dimensional drawings for the ARCTIC Liquid Freezer III Pro AIO liquid CPU coolers (240mm, 280mm, 360mm, 420mm, A-RGB). Includes part numbers and measurements.

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