

NZXT RF-U42HF-W1

NZXT F420 RGB Core 420mm Single-Frame Fan Unit Instruction Manual

Model: RF-U42HF-W1

INTRODUCTION

The NZXT F420 RGB Core single-frame fan unit is designed to provide efficient cooling and vibrant RGB lighting for your computer system. This unit integrates multiple fans into a single frame, simplifying installation and cable management. It offers superior cooling performance, quiet operation, and customizable lighting effects.

Key features include:

- **All-in-One Design:** Single-frame unit with integrated fans for streamlined installation and lighting control.
- **Versatile Connectivity:** Connects to an NZXT controller (sold separately) for NZXT CAM software control or directly to a motherboard's 5V aRGB header using the included splitter cable.
- **Optimal Performance:** Fan blades are engineered to enhance static pressure and airflow, effectively cooling components in tight spaces.
- **Silent & Durable:** Features fluid dynamic bearings for quiet operation and an extended lifespan of 60,000 hours.
- **Vibrant Lighting:** Each fan hub is equipped with eight individually addressable RGB LEDs, shining through semi-translucent blades for personalized lighting effects.

SETUP AND INSTALLATION

This section guides you through the physical installation and initial connection of your NZXT F420 RGB Core fan unit.

Package Contents

- NZXT F420 RGB Core Single-Frame Fan Unit (3 x 140mm fans)
- Mounting Screws
- 5V aRGB Motherboard Splitter Cable

Physical Installation

The single-frame design simplifies mounting. Identify the desired mounting location within your PC case (e.g., front, top, or bottom radiator mounts). Ensure adequate clearance for the 420mm unit.

1. Align the fan unit with the mounting holes in your PC case.

2. Secure the unit using the provided mounting screws. Do not overtighten.

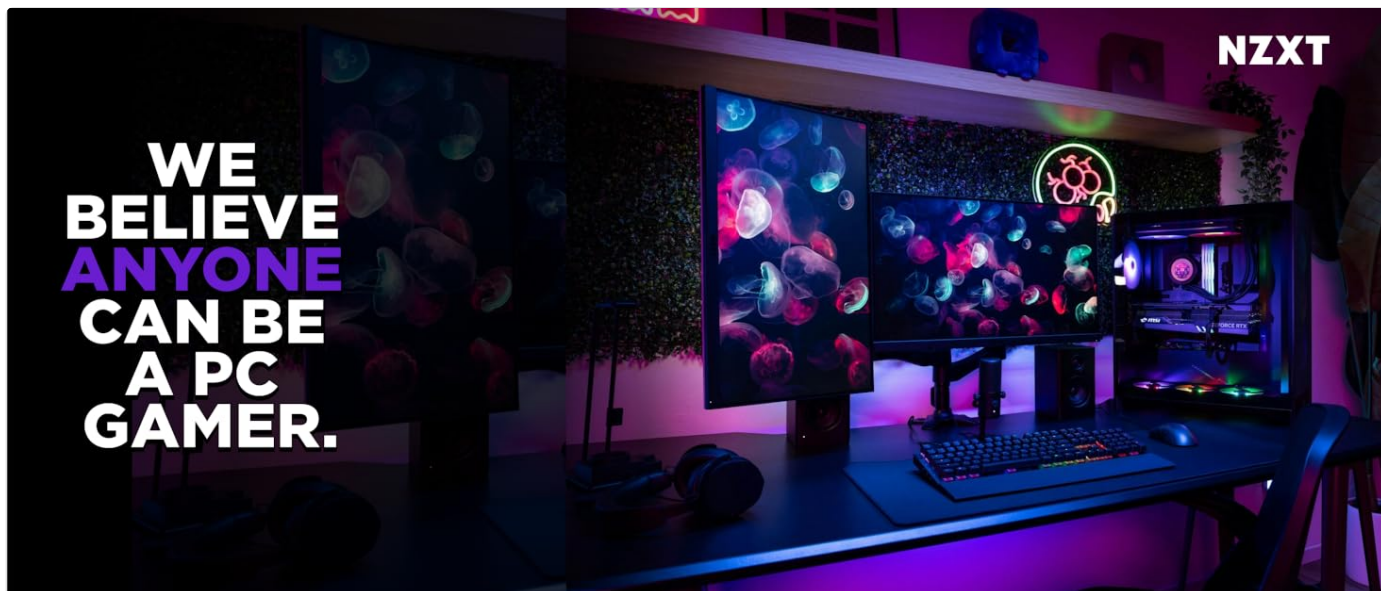


Figure 1: The NZXT F420 RGB Core fan unit showcasing its integrated, single-frame design for simplified installation.

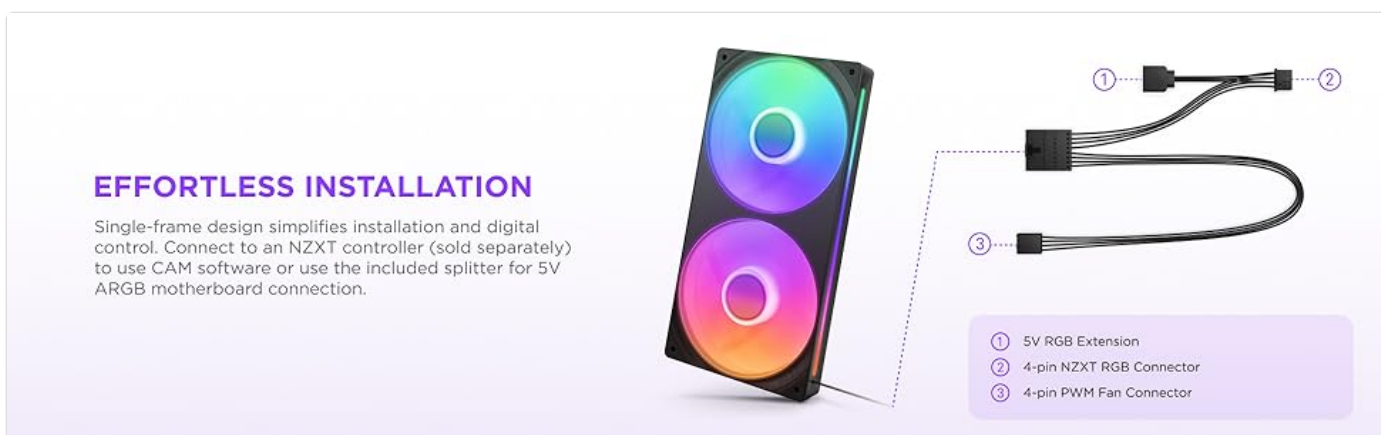


Figure 2: Visual guide demonstrating the straightforward installation process of the single-frame fan unit.

Electrical Connection

The F420 RGB Core offers flexible connectivity options for fan speed and RGB lighting control.

- **Option 1: NZXT Controller (Recommended for full control)**

Connect the fan unit's main cable to an NZXT RGB & Fan Controller (sold separately). This allows for comprehensive control over fan speeds and RGB lighting effects via the NZXT CAM software.

- **Option 2: Motherboard 5V aRGB Header**

Use the included splitter cable to connect the fan unit to a compatible 5V addressable RGB header on your motherboard. This enables basic RGB control through your motherboard's software. The fan power cable (4-pin) should be connected to a fan header on your motherboard.



Figure 3: The fan unit shown with its included splitter cable, facilitating connection to either an NZXT controller or a motherboard's aRGB header.

OPERATING INSTRUCTIONS

Once installed and connected, you can manage the performance and aesthetics of your F420 RGB Core fan unit.

Fan Speed Control (PWM)

The fans support Pulse Width Modulation (PWM) control, allowing for dynamic adjustment of fan speeds based on system temperatures. This optimizes cooling efficiency and minimizes noise.

- If connected to an NZXT controller, use the NZXT CAM software to set custom fan curves, select preset profiles, or enable Zero RPM Mode for silent operation under light loads.
- If connected directly to a motherboard fan header, fan speed control will be managed by your motherboard's BIOS/UEFI settings or its proprietary fan control software.



PWM CONTROL

Dynamically adjusts fan speeds based on PC temperatures for optimal efficiency*.

*Requires PWM connection to motherboard or controller (sold separately)

Figure 4: Illustration of PWM control, allowing fan speeds to adjust dynamically for optimal efficiency.



SILENT OPERATION

Anti-vibration rubber corners dampen noise and Zero RPM Mode* shuts fans off during light loads.

*Requires an NZXT controller or NZXT motherboard, each sold separately.

Figure 5: The fan unit highlighting its quiet operation, with anti-vibration rubber corners and Zero RPM Mode capability.

RGB Lighting Control

The F420 RGB Core features 8 individually addressable RGB LEDs per fan hub, offering extensive customization.

- **Using NZXT CAM Software:** If connected to an NZXT controller, the CAM software provides a wide array of lighting effects, color customization, and synchronization options with other NZXT RGB products.
- **Using Motherboard Software:** If connected to a 5V aRGB header, use your motherboard's RGB control software to manage lighting effects.

8 LEDs
per fan



RADIANT RGB LIGHTING

8 ARGB LEDs per fan hub shine through semi-translucent blades and frame side windows.

Figure 6: The fan unit showcasing its radiant RGB lighting with 8 individually addressable LEDs per fan hub.



POWERED BY
NZXTCAM

DO MORE WITH CAM

Control fan speeds, personalize lighting effects, and sync with other NZXT products*.

*Requires an NZXT controller or NZXT motherboard, each sold separately.

Figure 7: The NZXT CAM software interface, demonstrating its capabilities for controlling fan speeds and personalized lighting effects.

MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your fan unit.

- **Dust Removal:** Periodically clean the fan blades and frame to prevent dust buildup, which can impede airflow and increase noise. Use compressed air or a soft brush. Ensure the system is powered off before cleaning.
- **Bearing Longevity:** The fluid dynamic bearings are designed for a long lifespan (60,000 hours) and require no lubrication.

TROUBLESHOOTING

If you encounter issues with your NZXT F420 RGB Core fan unit, refer to the following common solutions.

- **Fans Not Spinning:**
 - Check all power connections to ensure they are securely seated.
 - Verify that the fan header on the motherboard or controller is supplying power.
 - If using NZXT CAM, ensure fan profiles are not set to Zero RPM Mode when cooling is expected.

- **RGB Lighting Not Working or Incorrect:**

- Ensure the RGB cable is correctly connected to either the NZXT controller or the motherboard's 5V aRGB header.
- Check the NZXT CAM software or your motherboard's RGB software for correct lighting settings and profiles.
- Confirm that the 5V aRGB header on your motherboard is enabled in the BIOS/UEFI.

- **Excessive Noise:**

- Inspect for any cables or obstructions touching the fan blades.
- Ensure mounting screws are tightened appropriately to prevent vibrations.
- Adjust fan speed profiles in NZXT CAM or motherboard software to reduce RPMs if noise is a concern and temperatures allow.

SPECIFICATIONS

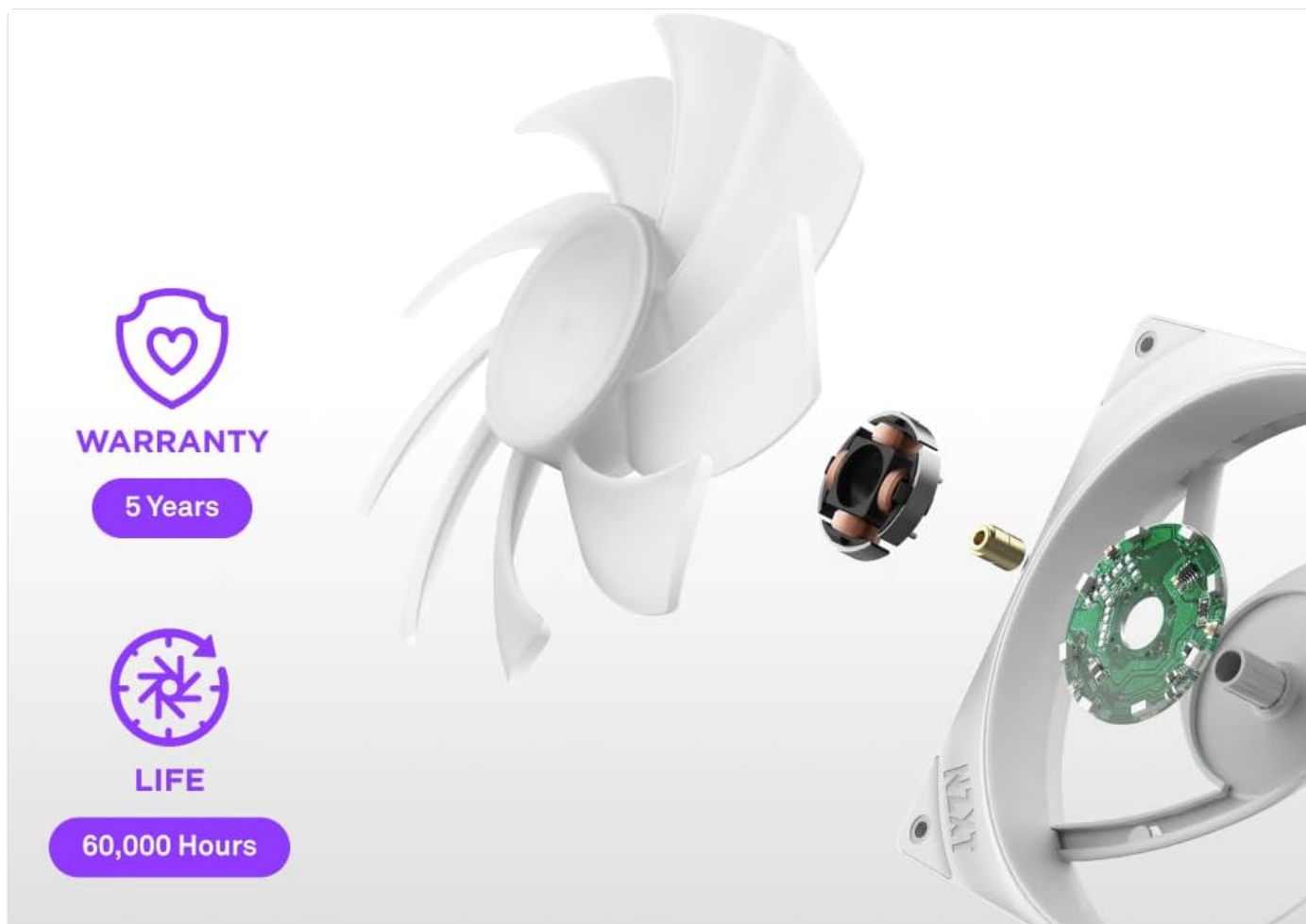
Feature	Detail
Model Number	RF-U42HF-W1
Fan Size	3 x 140mm (integrated in 420mm single-frame unit)
Dimensions (LxWxH)	16.54 x 5.51 x 1.02 inches
Weight	1.1 pounds
Rotational Speed	500 - 2000 ± 200 RPM
Airflow	Up to 98.61 CFM (per fan)
Static Pressure	Up to 3.2 mm H ₂ O (per fan)
Noise Level	Up to 34.5 dBA
Bearing Type	Fluid Dynamic Bearing (FDB)
Lifespan	60,000 hours
Power Connector	4-Pin PWM
RGB LEDs	8 per fan hub (individually addressable)
Voltage	11.99 Volts
Wattage	11.4 watts
UPC	810074844598



OPTIMAL PERFORMANCE

Blade design boosts static pressure to push air through tight spaces with superior airflow.

Figure 8: Visual representation of the fan unit's optimal performance metrics, including static pressure and airflow.



FLUID DYNAMIC BEARINGS

Ensures low noise, high rotational stability,
and a 60,000-hour fan lifespan.

Figure 9: Detailed view of the fluid dynamic bearings, emphasizing their role in ensuring quiet performance and extended durability.

WARRANTY INFORMATION

The NZXT F420 RGB Core fan unit comes with a **5-year warranty**, ensuring reliability and peace of mind. For detailed warranty terms and conditions, please refer to the official NZXT website or contact customer support.

SUPPORT AND CONTACT

For further assistance, technical support, or to explore other NZXT products, please visit the official NZXT website or contact their customer service.

- **NZXT Official Store:** [Visit the NZXT Store on Amazon](#)
- **NZXT Support:** Refer to the NZXT official website for support resources, FAQs, and contact information.

