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Fresh-Aire UV TUV-APCO-RT-DT2

Fresh-Aire UV APCO Compact In-Duct Air Purifier User Manual

Model: TUV-APCO-RT-DT2

Comprehensive guide for installation, operation, and maintenance of your Fresh-Aire UV APCO Compact In-Duct Air Purifier.

1. SAFETY INFORMATION

Please read all safety instructions carefully before installing or operating the Fresh-Aire UV APCO Compact In-Duct Air Purifier. Failure to follow these instructions may result in electric shock, fire, or other hazards.

- **UV Radiation Hazard:** This product uses UVC light. Direct exposure to UVC light can cause temporary or permanent eye and skin irritation. Always disconnect power before servicing.
- **Electrical Hazard:** Installation requires working with electrical wiring. Ensure power is disconnected at the circuit breaker before any installation or maintenance. It is recommended that installation be performed by a qualified HVAC technician.
- **Product Placement:** Position the unit so the UV light does not shine directly on non-UV resistant materials such as filters, humidifiers, or flexible ductwork, as this may cause degradation.
- **Ventilation:** Ensure adequate ventilation during operation.

2. PRODUCT OVERVIEW

The Fresh-Aire UV APCO Compact In-Duct Air Purifier is designed to improve indoor air quality by combining UVC light and activated carbon filtration. This system targets odors, bacteria, mold, and volatile organic compounds (VOCs) within your HVAC system.

Key Features:

- **Compact Design:** Ideal for smaller HVAC ducts and systems from 1-5 tons, requiring only 10 inches of clearance within the duct for installation.
- **Dual UVC Lamps:** Includes two UVC lamps with a 2-year lifespan for effective germicidal action.
- **Carbon Matrix Filter:** Features four activated carbon PCO cells that attract and hold odors and microbes, which are then catalyzed by UVC light. These cells are self-cleaning.
- **Remote Power Supply:** Equipped with a 120-277VAC external tethered power supply.

- **Continuous Operation:** Designed for 24/7 operation to maintain consistent air purification.



Figure 2.1: Overview of the Fresh-Aire UV APCO Compact In-Duct Air Purifier system, showing the main unit, remote power supply, and UVC lamp.

FRESH-AIRE[®] UV

The Indoor Air Quality Expert



Figure 2.2: Diagram illustrating key features such as UV-reactive carbon cells, VOC absorption, germicidal UVC (254 nm), 24/7 operation, inhibition of growth within the air system, and the 10-inch clearance requirement for installation.

3. SETUP AND INSTALLATION

Installation of the Fresh-Aire UV APCO Compact In-Duct Air Purifier is designed to be straightforward, but due to electrical connections and duct modifications, professional installation by a qualified HVAC technician is recommended.

Pre-Installation Checklist:

- Ensure the HVAC system is powered off at the circuit breaker.
- Verify sufficient clearance (minimum 10 inches) within the ductwork for the unit.
- Gather necessary tools: drill, hole saw (appropriate size for mounting plate), screwdriver, safety glasses, gloves.

Installation Steps:

1. **Select Installation Location:** The unit should be installed within the air handler or ductwork. For optimal results, orient the unit so that air flows past the UV light first, before the carbon matrix. Avoid direct UV

light exposure to non-UV resistant materials.

2. **Mark and Cut Duct Opening:** Use the provided template to mark the precise location for the opening in the supply duct. Carefully cut the opening. The return duct can also be used, but the supply duct is generally preferred.
3. **Mount the Unit:** Insert the supplied mounting plate into the cut opening. Secure it using screws for metal ducts or by bending the tabs for duct board types.
4. **Install UV Lamps:** Carefully insert the separately packaged UV lamps into the main unit. Connect the lamp plugs securely.
5. **Connect Power Supply:** Connect the unit to the 120-277VAC external tethered power supply. Ensure all electrical connections are secure and comply with local electrical codes.
6. **Secure Cover:** Fasten the cover over the main unit.
7. **Restore Power:** Once installation is complete and all connections are verified, restore power to the HVAC system at the circuit breaker.
8. **Verify Operation:** Check the viewing hole on the unit to confirm the UV lamps are illuminated, indicating proper operation.

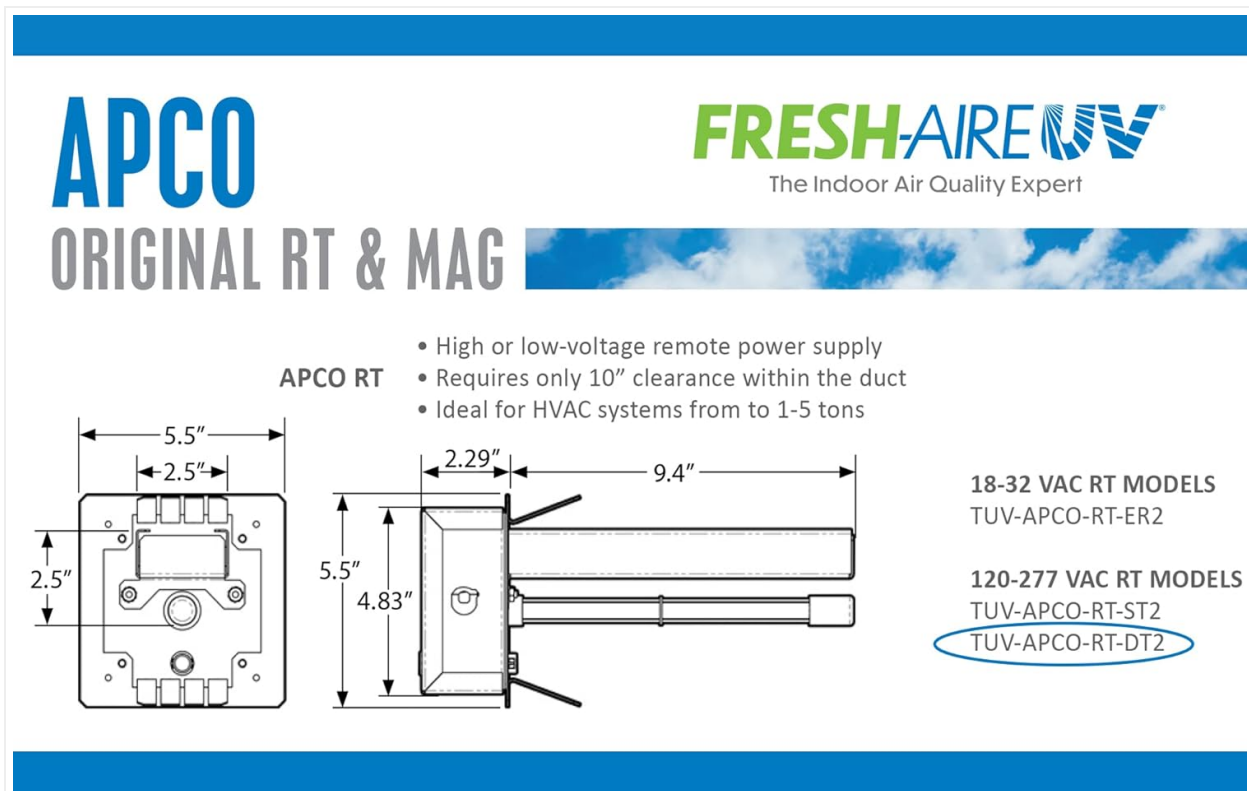


Figure 3.1: Illustrative view of the APCO RT unit installed within an HVAC duct, showing its placement relative to the coil.

FRESH-AIRE UV

The Indoor Air Quality Expert



APCO® cleans the air by combining UVC light and activated carbon; two technologies proven to be most effective at neutralizing germs, and removing odors and VOCs.

Ideal for up to 5 ton HVAC systems per unit.

Multiple or dual lamp units can be used for larger systems.



APCO® RT Similar to the Original APCO but smaller. APCO RT is designed for narrower ducts and limited-space installations.

Ideal for 1-5 ton HVAC systems.



APCO® MAG is designed for internal mounting using a magnet (or screws) and is available with either a 15" lamp (6 cells) or 11" lamp (4 cells). **Ideal for packaged units.**



Figure 3.2: Technical diagram providing dimensions for the APCO RT unit, essential for planning installation space.

4. OPERATING INSTRUCTIONS

The Fresh-Aire UV APCO Compact In-Duct Air Purifier is designed for continuous, 24/7 operation. Once properly installed and powered, the unit will automatically begin purifying the air circulating through your HVAC system.

- **Continuous Purification:** The UVC lamps and carbon matrix cells work continuously to reduce airborne contaminants.
- **Ozone Absorption:** The titanium dioxide infused carbon cells surrounding the UV lamps are designed to absorb any ozone emitted by the UVC lamps, ensuring no ozone is released into your indoor environment.
- **Visual Confirmation:** A small viewing port on the unit allows for visual confirmation that the UVC lamps are operational. A blue glow indicates the lamps are on.

APCO Carbon % Reduction of Common Indoor Air Contaminants Over 4 Hours

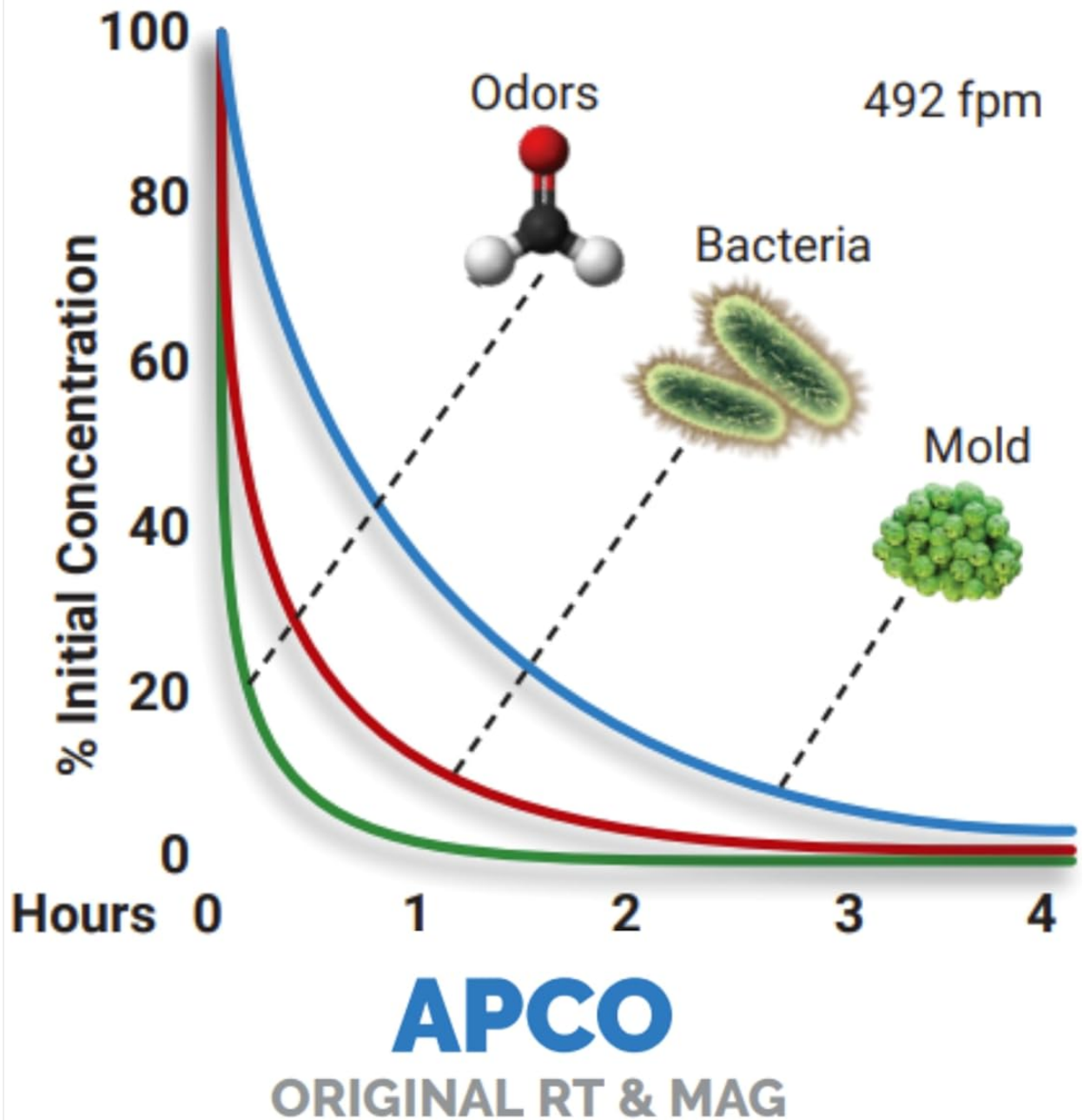


Figure 4.1: Graph illustrating the reduction percentage of common indoor air contaminants like odors, bacteria, and mold over a 4-hour period by the APCO system.

5. MAINTENANCE

The Fresh-Aire UV APCO system is designed for minimal maintenance. The carbon matrix cells are self-cleaning, and the UVC lamps have an extended lifespan.

- **UVC Lamp Replacement:** The included dual UVC lamps are rated for a 2-year lifespan. It is recommended to replace the lamps every two years to ensure optimal germicidal effectiveness.

- **Cleaning:** Periodically inspect the unit for any dust or debris accumulation. If necessary, gently wipe the exterior of the unit with a dry cloth after disconnecting power. Do not use liquid cleaners directly on the lamps or internal components.
- **Professional Inspection:** It is advisable to have your HVAC system, including the APCO unit, inspected by a qualified technician during routine HVAC maintenance.

6. TROUBLESHOOTING

If you experience issues with your Fresh-Aire UV APCO Compact In-Duct Air Purifier, refer to the following common troubleshooting steps:

- **Unit Not Illuminating:**
 - Check if the HVAC system has power.
 - Verify that the unit's power supply is securely connected.
 - Ensure the UVC lamps are properly seated and connected.
 - If lamps are older than 2 years, they may need replacement.
- **Reduced Air Quality Improvement:**
 - Ensure the HVAC system's air filter is clean and replaced regularly.
 - Confirm the UVC lamps are still operational (check viewing port).
 - Verify proper airflow through the ductwork.
- **Unusual Noises:**
 - Disconnect power and inspect the unit for any loose components or obstructions.
 - If the noise persists, contact a qualified technician.

For issues not resolved by these steps, please contact customer support or a qualified HVAC professional.

7. SPECIFICATIONS

Specification	Detail
Model Number	TUV-APCO-RT-DT2
Brand	Fresh-Aire UV
Product Dimensions (D x W x H)	21.53" x 8.37" x 8.5"
Weight	5.2 Pounds
Wattage	21 watts
Voltage	120-277 VAC
Lamp Type	Dual UVC (2-year lifespan)
Filter Type	Carbon Matrix Filter (PCO cells)
Clearance Required	10 inches within duct
Certification	UL Certified

Specification	Detail
Controller Type	Remote Control

8. WARRANTY INFORMATION

Specific warranty details for the Fresh-Aire UV APCO Compact In-Duct Air Purifier are typically provided at the point of purchase or included with the product packaging. Please refer to your purchase documentation for the most accurate and up-to-date warranty terms and conditions.

Generally, UVC lamps are considered consumable items and may have a separate warranty period or expected lifespan (e.g., 2 years for the lamps included with this model).

9. SUPPORT

For technical assistance, replacement parts, or further inquiries regarding your Fresh-Aire UV APCO Compact In-Duct Air Purifier, please contact Fresh-Aire UV customer support through their official website or the contact information provided in your product documentation.

When contacting support, please have your product model number (TUV-APCO-RT-DT2) and date of purchase readily available.