



# *AirRanger* **BIO IV** **Whole-House** **IAQ System**



## **Contaminant Control**

- Electronic Polarized-Media for control of ultrafine particles
- Activated Carbon Matrix for odor and gas phase contaminant control
- Series2™ Ultraviolet Germicidal System for control of airborne viruses, biologicals, germs and gases

## **Design Flexibility**

- 1400 CFM, Right Angle left or right
- Flow-thru side to side or top to bottom
- One model, easy field conversion
- Adjustable 24 gauge flanges for multiple duct sizes
- Knockouts for Model 407 high output UVC system
- Heavy Duty 16-20 gauge steel cabinet

Now there is one whole-house air cleaning system that addresses all three types of airborne contaminants – quietly and efficiently. The Clean Air Defense System RS-4 Whole House IAQ System applies the latest proven air purification technologies that work with the central heating and cooling system to provide clean, healthy air throughout the home.

### ★ **For Fine Particles - Polarized-Media Electronic Air Cleaner**

97% efficient at .3 microns and smaller, the Clean Air Defense System AirRanger Polarized-Media Electronic Air Cleaner provides ultra-efficient particulate removal. The Clean Air Defense System Polarized-Media Air Cleaner removes dangerous submicron particles and other contaminants that other filters miss, including bacteria, odors, and smoke.

### ★ **For Gas Phase Contaminants - Activated Carbon Matrix**

The Clean Air Defense System Activated Carbon Matrix (ACM) brings the power of industrial strength activated carbon to your home. The Clean Air Defense System ACM uses advanced composites and extrusion technologies to provide the effectiveness of an industrial-strength activated carbon system. Clean Air Defense System ACM is suitable for high airflow, high temperatures, and high humidity.

### ★ **For Germs and Viruses - Series2 UVC Germicidal Lamp**

UVC efficiency is a function of lamp microwatt output. The Clean Air Defense System 407H-16 and 407H-16-O3 (with activated Oxygen) Series2 UVC systems offer 180 microwatts and a dual lamp configuration for one of the highest output UVC systems available today.

## Standard Features

### SAFE & QUIET OPERATION

- Airflows in any direction with no moving parts to wear out.
- High-efficiency polarized-media air cleaner runs on 24-volts that feeds a high voltage power supply producing 7,000 volts of DC output current. A high internal impedance makes it very safe and virtually short-circuit proof.
- No arcing like other electronic air cleaners.
- Does not produce charged particles that collect on clothes, walls and furnishings.

### EASY TO MAINTAIN

- Convenient front access.
- No washing of components required.
- The Activated Carbon Matrix will generally last two to three years, depending on household conditions such as the presence of pets and/or smokers. Systems utilizing the AD-407H-16-O3 UV System with activated Oxygen can expect to extend carbon service life by up to 50%. Germicidal UV lamps are changed every two years (18000 hours). Media pads are generally changed every four (4) to eight (8) months, depending on household conditions.

### FLEXIBLE INSTALLATION

- Heavy 16-20 gauge galvanized steel, thermally-insulated cabinet.
- Block-off plates can be quickly repositioned for a fast install.
- Knock-outs for UV Air Purifier.
- Unsurpassed versatility with multiple configurations including right angle and flow through.
- Adjustable 1" flanged duct openings eliminate field transitions.
- Clean Air Defense System Series2 AD-407H-16 and AD-407H-16-O3 UV lamps, standard on some models, run on either 120VAC or 240VAC, 50/60 Hz.

### WARRANTY

- Limited Lifetime Warranty on electronic components.
- UVC lamps are warranted against defects for two (2) years.

## Electronic Air Cleaning Effectiveness

AirRanger Air Cleaners use electronic polarized-media technology to provide maximum ozone-free air cleaning. Active electronic, polarized-media air cleaners use a safe, 24 volt current to establish a polarized electric field. Airborne particles pass through the field and adhere to the media. The air cleaner's efficiency increases as it loads, providing exceptionally high efficiency with air resistance much lower than passive filters.

AirRanger Air Cleaners capture even the smallest sub-micron particles, in addition to airborne viruses, pathogens, and volatile organic compounds (VOCs). AirRanger Air Cleaners capture 97% of particles at .3 microns and continues trapping particles much smaller in size. These are the particles that are otherwise absorbed into our bloodstreams to trigger asthma attacks and allergy symptoms, in addition to more serious health issues.

Maintenance is a breeze. Each Air Ranger uses a disposable replacement media pad which can be replaced in just minutes to keep your air cleaner running at peak efficiency.



## Carbon Effectiveness

Carbon effectiveness and longevity are functions of weight and contact time. More weight means more capacity for odor removal and a longer service life. One gram of activated carbon has 10,000 square feet of internal surface area. One pound of activated carbon has a surface area equal to about 125 acres. Based on the contaminants of concern and their concentration levels, the media life for the Activated Carbon Matrix is predictable. In addition, the media can be engineered on a job-by-job basis to meet specific performance requirements such as static pressure drop, maximum face velocity and residence time. Common target contaminants include Hydrogen Sulfide, Chlorine, Sulfur Dioxide, Chlorine Dioxide and other acid gases and odors.



### Physical Properties

Density – 26.6 lb/ft<sup>3</sup>  
 Crush Strength – 300 psi minimum  
 Dust-free under normal operation

### Removal Capacity

Hydrogen Sulfide – 40% by weight  
 Sulfur Dioxide – 15% by weight  
 Xylene – 13% by weight  
 Toluene – 9% by weight

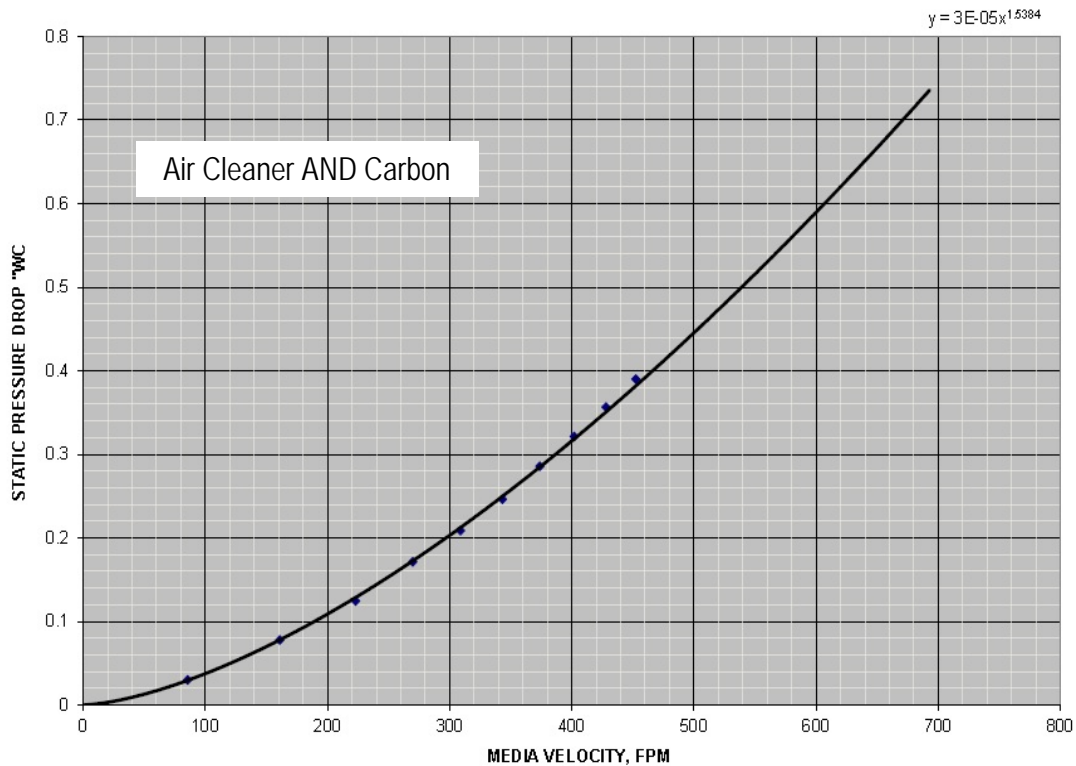
Air Velocity		Dwell Time (seconds)	Removal (%)
fpm	"w.g.		
78	0.040	0.090	99.9
99	0.050	0.070	99.5
113	0.055	0.062	99.0
207	0.110	0.034	90.0
276	0.160	0.025	80.0

*The chart above shows removal of Xylene which has similar representative characteristics of vehicle exhaust emissions and common VOCs. The Activated Carbon Matrix is engineered to deliver an 80.0% to 90.0% upstream/downstream removal.*



*AirRanger Polarized-Media Air Cleaner  
 with Activated Carbon Matrix*

## Pressure Drop



## Germicidal UVC Effectiveness

The Clean Air Defense System 407H-16 Series2™ Germicidal UV Air Purifier is a high output germicidal lamp that harnesses the energy of the sun's UVC rays to disrupt the DNA of living viruses, bacteria and other living airborne organisms so they can no longer reproduce. UVC is effective against viruses, bacteria, molds and mold spores, pollen, and other pathogens.

The Clean Air Defense System 407H-16-O3 Air Purifier uses dual wavelength UVC and UVV that also controls germs and gases. Germicidal UVV is effective against odors and gas phase contaminants and oxidizes contaminants to CO<sub>2</sub> and H<sub>2</sub>O.

The 407H Air Purifier mounts to the RS4 cabinet to provide maximum whole-house efficiency serving the entire living space.



## Part Numbers & Accessories

Description	Part No.
RS-4 IAQ System with EAC & ACM & UV	RS-4-ACM-407H-16
RS-4 IAQ System with EAC & ACM & UVO3	RS-4-ACM-407H-16-O3
RS-4 IAQ System with EAC + ACM	RS-4-ACM
RS-4 IAQ System with EAC + UV	RS-4-407H-16
RS-4 IAQ System with EAC + UVO3	RS-4-407H-16-O3
RS-4-IAQ System with EAC Only	RS-4-1400
UV: 36W H LAMP 110/220/240V 16" for RS4 UV	AD-407H-16
UV: 36W H LAMP 110/220/240V 16" for RS4 UVO3	AD-407H-16-O3
RS-4 ACM Carbon Inserts (2-4 Years)	RS-4-INSERTSET
RS-4 Media 4 Pack	C4P-RS4
UV: UVC16HC Replacement Lamp 2YR 16" UV	LSK-36-16
UV: UVC16HC Replacement Lamp 2YR 16" UVO3	LSK-36-16-O3
Plug-in Transformer 120VAC (for EAC)	A412402

## Optional Accessories & Features

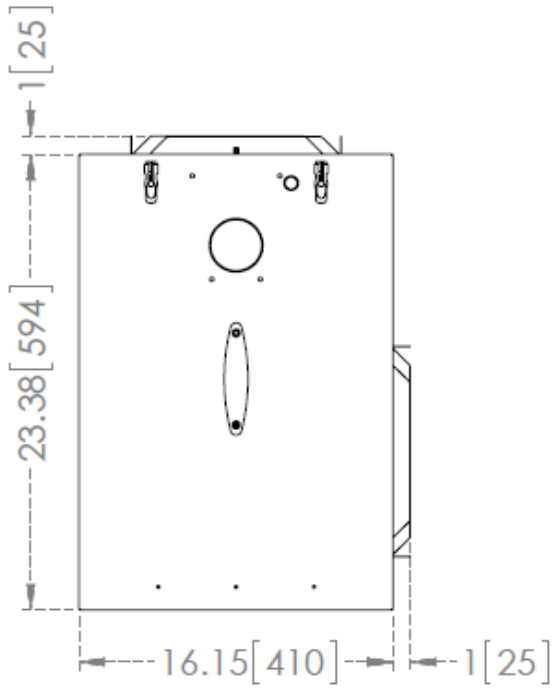
- 240V power cord (part no.PC-240).
- 110Volt step-down transformer allows the air cleaner to be plugged directly into any standard wall outlet (part no A412402).

## Electrical (Air Cleaner)

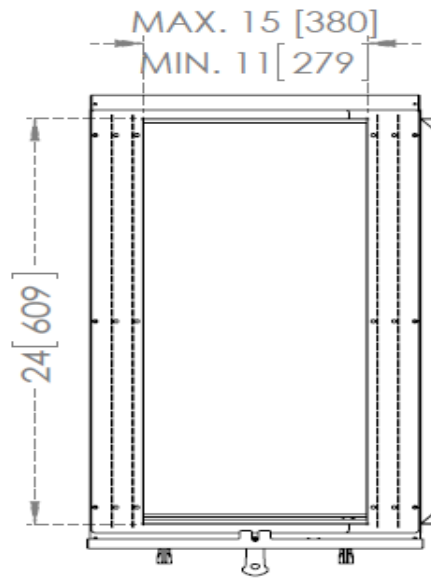
Electrical Input:	24 VAC
Powerhead Output Voltage:	7 kV (DC)
Power Consumption:	.95 Watts
Powerhead Volt/Amps Draw:	1.45 VA
Ozone Generation:	None

## Overall Dimensions

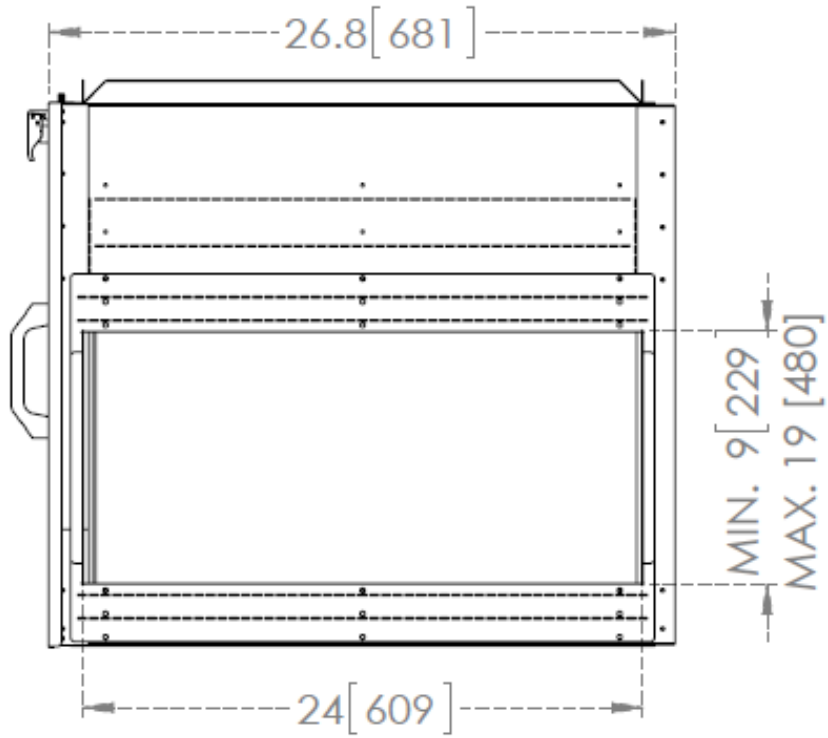
Unit Weight EAC only	14 lbs (6.35 kg)
Unit Weight EAC + Carbon	18 lbs (8.2 kg)
Cabinet Dimensions	16-1/4"W x 25"H x 27"D (41.3 cm x 63.5 cm x 68.6 cm)



Front View



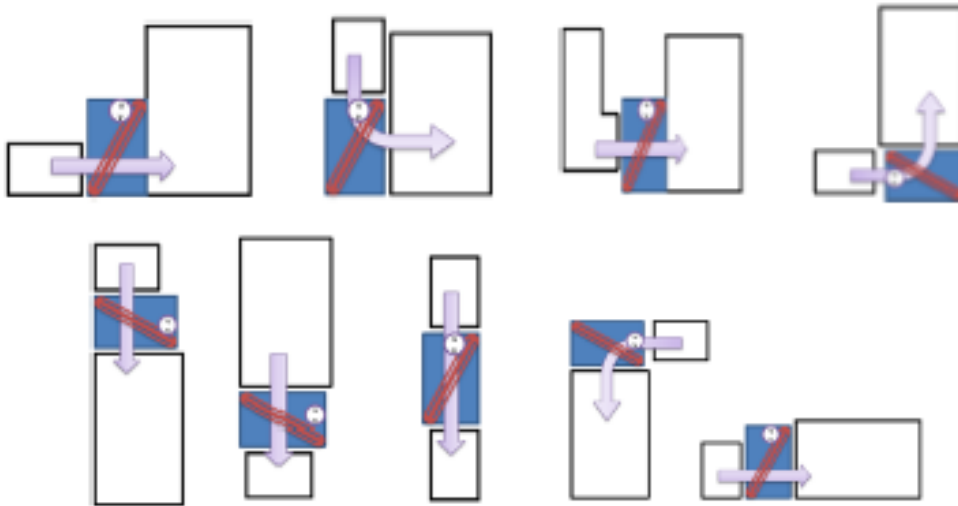
Top & Bottom View



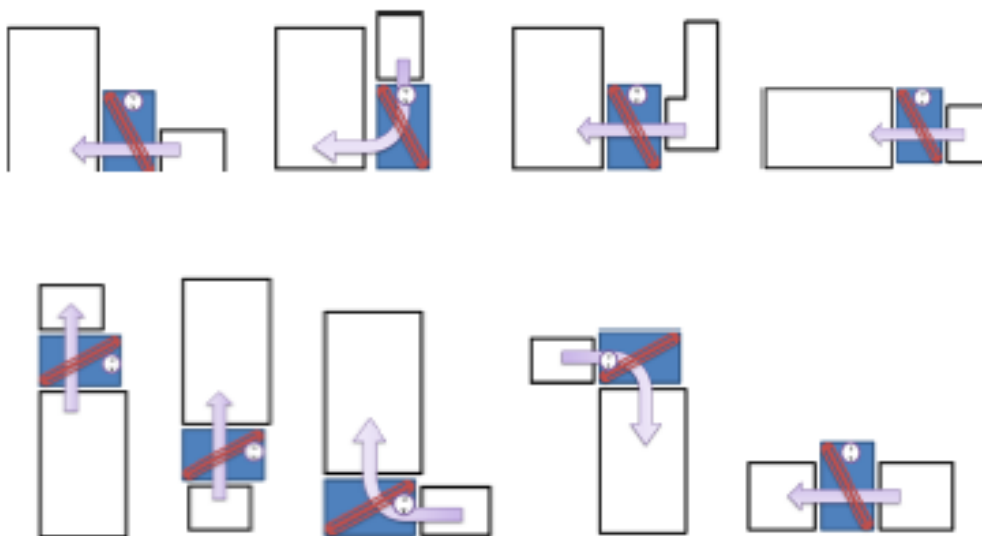
Side View

## Multiple Configurations for Installation Flexibility

RIGHT HAND



LEFT HAND



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