

AstroPure™



AstroPure™
500-IR



Portable Air Purification Systems

Portable Air Purification System

The AstroPure™ Air Purification System offers a portable, plug-and-play solution to improve indoor air quality in applications such as healthcare facilities, school classrooms, and commercial real estate.

Product Overview

- Available in multiple configurations for recirculation and exhaust applications in rooms of varying sizes:
 - AstroPure 500-IE & IR Models (0-500 CFM)
 - AstroPure 1000-IE & IR Models (500-1000 CFM)
- Equipped with high-efficiency two-stage filtration:
 - MEGAcel® I HEPA filter
 - VariCel® 2+ HC MERV 11 filter
- Advanced interface that delivers visualization of air cleanliness, noise level, airflow, and PM levels
- EC motor for optimum energy conservation
- Embedded PM & PD sensors
- IAQ on demand through set recurring schedule or on-demand scheduling before and after use of a space
- An easy-to-use, portable design with robust, lockable casters
- Third party electrical safety certification from ETL



AstroPure™
500-IR Portable Unit

Features and Benefits

MEGAcel® I HEPA Filter

- Lowest initial resistance – Up to 50% lower than glass media alternative
- Dual-layer membrane media reduces risk of media damage and degradation
- Delivers a minimum efficiency of 99.99% @ 0.3um

Variable Speed Fan

- Adjusts based on specific CFM requirements of each space
- EC motor for optimized energy consumption

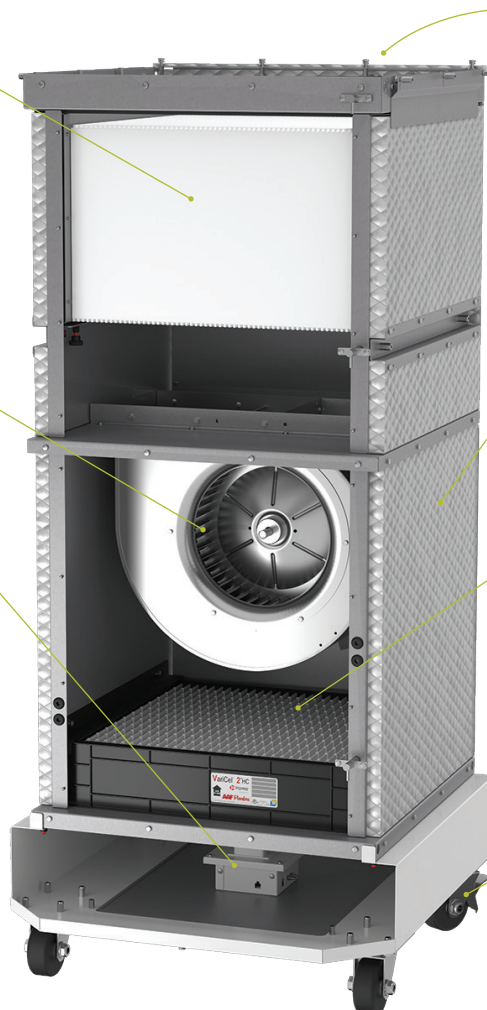
Integrated PM Sensor

- Allows the user to optimize the air cleanliness level requirements at any time of day while visually seeing the reduction of particulates in the space
- Uses PM0.5 (particles/cm3), PM1.0, PM2.5, and PM10 (micrograms/m3)



Certified Electrical Safety

- Meets or exceeds electrical safety standards for the U.S. and Canada as verified by ETL
- Means that you can trust that this product will operate safely in your workplace



Human-to-Machine Interface (HMI) Screen

- Offers an intuitive user interface for scheduling and status information
- Simplifies setup and ongoing operation

Premium Insulation Panels

- Sound absorbing panels reduce the noise level outside the system
- Quiet operation reduces distraction and disruptions

VariCel® 2+HC Filter

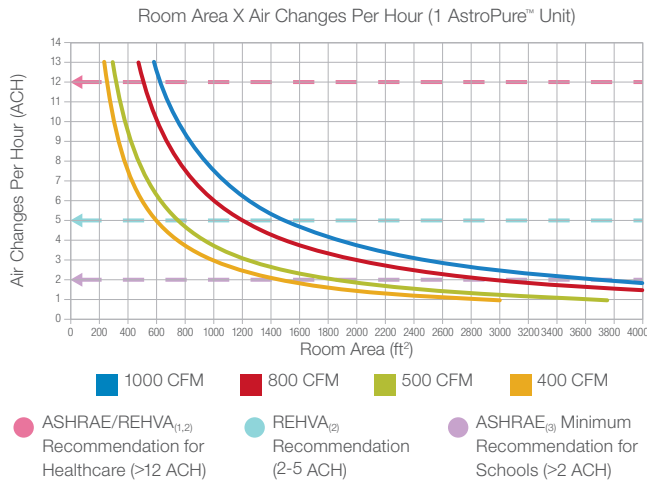
- Patented Impress® Technology provides mechanical strength and reinforced V-pleats that will not bunch
- MERV 11 particle efficiency protects the EC motor and MEGAcel I HEPA filter, extending the life of the unit
- Lower operating resistance reduces operating costs and saves energy

Swivel Casters

- Heavy-duty construction for longevity
- Two locking casters hold unit in place, providing stability and safety

Performance Data

Room Size Calculation (8ft Ceiling Height)

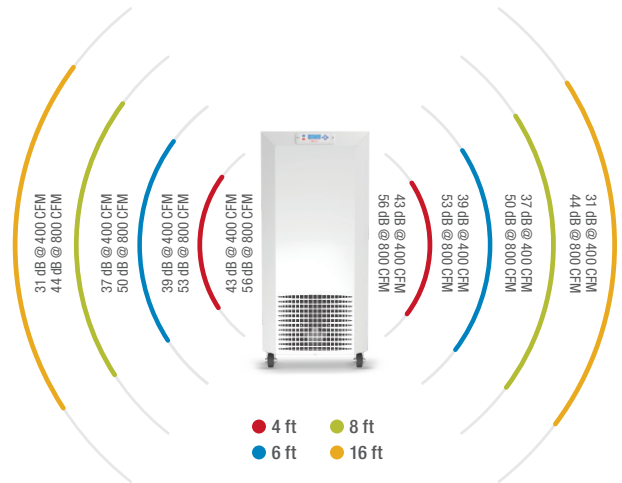


The above graph represents the room's area that one AstroPure™ 500 series unit can cover in relation to the number of room air changes per hour (ACH). The average ceiling height measured in this graph is 8 ft. The yellow curve represents the unit operating at the lowest noise level while the green curve represents the unit operating at the standard noise level for the 500 series. Therefore, a 600 ft² room, using a single AstroPure 500 series unit, can supply approximately 5 ACH operating at the lowest noise level. This graph can help determine the number of units needed to circulate the air faster, providing clean air to the occupied space.

This graph also indicates ACH mentioned in recommendations from ASHRAE and REHVA according to their latest publications related to COVID-19 prevention.

(1) ASHRAE Position Document on Infectious Aerosols, April 14, 2020
 (2) REHVA COVID-19 guidance document, August 3, 2020
 (3) ASHRAE EPIDEMIC TASK FORCE SCHOOLS & UNIVERSITIES | Updated 7-17-2020

Noise Level Comparison - Distance from AstroPure (Noise Source)



The above diagram represents the noise level perceived by the user in relation to their distance from the equipment. At 4 ft from the occupant, the noise curve is represented in red, the relative decibel level (dB) ranges from 43 dB to 56 dB depending on the airflow level. At 16 ft from the occupant, the noise curve is represented in yellow, the dB level ranges from 31 dB to 44 dB depending on the airflow level. This diagram can help define the minimum distance (ft) that the equipment should be installed from the occupant at a specific airflow rate (CFM) to achieve their expected noise level target.

The position of the AstroPure unit within a given space is of the utmost importance in optimizing the effectiveness of ventilation. Extensive CFD analysis can be provided to ensure best in class performance.

Technical Specifications

		Product Model			
		AstroPure 500-IR Internal portable unit - recirculation mode	AstroPure 500-IE Internal portable unit - exhaust air mode	AstroPure 1000-IR Internal portable unit - recirculation mode	AstroPure 1000-IE Internal portable unit - exhaust air mode
		Non-ducted	Ducted (12" collar)	Non-ducted	Ducted (12" collar)
Voltage	Hz	120V-60Hz	120V-60Hz	120V-60Hz	120V - 60Hz
Power	W	250W	250W	750W	750W
Max Airflow Rate	CFM	500	500	1000	1000
Operational Airflow Rate	CFM	400	400	800	800
Noise Level - Operational Point	Db(A)	<44	<44	<56	<56
Dimensions	HxWxD	51 3/8"x 22 7/8"x 24"	51 3/8"x 22 7/8"x 24"	51 3/8"x 22 7/8"x 24"	51 3/8"x 22 7/8"x 24"
Weight	Lbs	220	220	230	230
Pre Filter	MERV 11	16x16x4"	16x16x4"	16x16x4"	16x16x4"
HEPA Filter	99.99%	18x18x12"	18x18x12"	18x18x12"	18x18x12"
Motor Type	EC	Variable Speed - EC	Variable Speed - EC	Variable Speed - EC	Variable Speed - EC
Motor Power	HP	0.33	0.33	1	1
Max Current Draw	A	7	7	15	15
Blower Type	Impeller	Forward Curved Impeller	Forward Curved Impeller	Forward Curved Impeller	Forward Curved Impeller
Sensor Embedded		YES	YES	YES	YES
Control Interface		Programmable HMI	Programmable HMI	Programmable HMI	Programmable HMI
ETL Electrical Safety Certification		YES	YES	YES	YES

Performance Data

ASHRAE Standard 241 – 2023 Control of Infectious Aerosols

For air cleaners tested using AHAM Standard AC-1, the equivalent clean airflow rate shall be determined in accordance with **Equation 7-4**.

$$V_{ACS} = (W_s \times CADR_s) + (W_d \times CADR_d) + (W_p \times CADR_p) \quad \text{(Equation 7-4)}$$

where

V_{ACS} = air cleaning system equivalent clean airflow rate, cfm (L/s)

W_s = weighting factor for tobacco smoke, dimensionless

W_d = weighting factor for dust, dimensionless

W_p = weighting factor for pollen, dimensionless

$CADR_s$ = clean air delivery rate for tobacco smoke, cfm (L/s)

$CADR_d$ = clean air delivery rate for dust, cfm (L/s)

$CADR_p$ = clean air delivery rate for pollen, cfm (L/s)

The weighting factors for use in **Equation 7-4** shall be $W_s = 0.30$, $W_d = 0.30$, and $W_p = 0.40$.

AstroPure CADR Results of Performance Tests:

Model	Test Particulate	CADR (FT ³ /Min)	CADR (L/s)
AstroPure 500	Smoke	>600	>283.17
	Dust	>600	>283.17
	Pollen	>450	>212.38
	PM _{2.5}	>600	>283.17

Detailed performance test results are provided upon request.

*Per AHAM AC-1, the standard only applies to air cleaners with maximum CADR ratings of Dust: CADR = 600 cfm, Cigarette smoke: CADR = 600 cfm, and Pollen: CADR = 450 cfm.

The results reported are above the maximum limits of measurability of the ANSI/AHAM AC-1-2020 "Association of Home Appliance Manufacturers Method for Measuring Performance of Portable Household Electric Room Air Cleaners" Test Method. Also, this unit exceed the DOE Performance Criteria. PM2.5 CADR of unit tested >600 has potential to be considered commercial product.

New Contamination Simulation Software

Our **VisionAir IEQ** application software is designed to simulate the PM level reduction impact with and without an AstroPure air purifier. This software can be applied to almost any application but is primarily focused on commercial buildings, schools, and medical clinics to mitigate risks associated with viral load. In addition to optimizing air change rates and the clean air delivery rate (CADR) the user can also see the impact of increasing filter efficiency of the supply air to further reduce contamination and improve indoor air quality.

To Find out more information, **contact your local AAF sales representative for FREE site evaluation.**

Room's Design Options

Multiple Filter Options

Internal Contamination Sources

Two Scenarios Compared Simultaneously

Resultant Contamination Comparison

Available on the App Store

ANDROID APP ON Google Play

Mobile app available in your Apple App Store and Google Play Store.

Proven Expertise of AAF International

AAF offers the most comprehensive air filtration portfolio. Our product development and technical leadership in both filtration and equipment manufacturing gives us a unique advantage to understanding and delivering solutions to a wide range of applications. At AAF, our seamless integration ensures exceptionally high product quality and operational excellence to minimize your risk.

Contact your local AAF representative to help you determine the best air filtration solution for a safe and effective facility.

AstroPure@aafintl.com | aafintl.com

