

Mobile Air Cleaner

MAC-700



Clean • Innovative • Versatile



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The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) is the leading organization focused on researching and guiding proper HVAC system design and construction. The ASHRAE Position Document on Infectious Aerosols (COVID-19) recommends that existing spaces have high-efficiency particle filtration paired with UV-C Lights (Ultraviolet light) to capture and destroy biological aerosols. The easiest way to achieve this recommendation is through a mobile filter and UV-C system. The Nailor Mobile Air Cleaner - MAC-700, is the most advanced and economical mobile filtration unit with UV-C system on the market.

CHOOSE THE MAC-700

The MAC-700 provides continuous filtration of the space air to help reduce the risk of biological aerosol transmission without the requirement to involve your existing HVAC system. The MAC-700 is designed to pull air from all sides to increase its ability to collect biomass and dust from the floor. The air will travel through a MERV 8 pre-filter which captures large particles, HEPA filter, and UV-C light before recirculating

clean air up into the room. The final 6" (152 mm) HEPA filter provides filtration that is 99.99% effective in the removal of microbial content from the airflow.

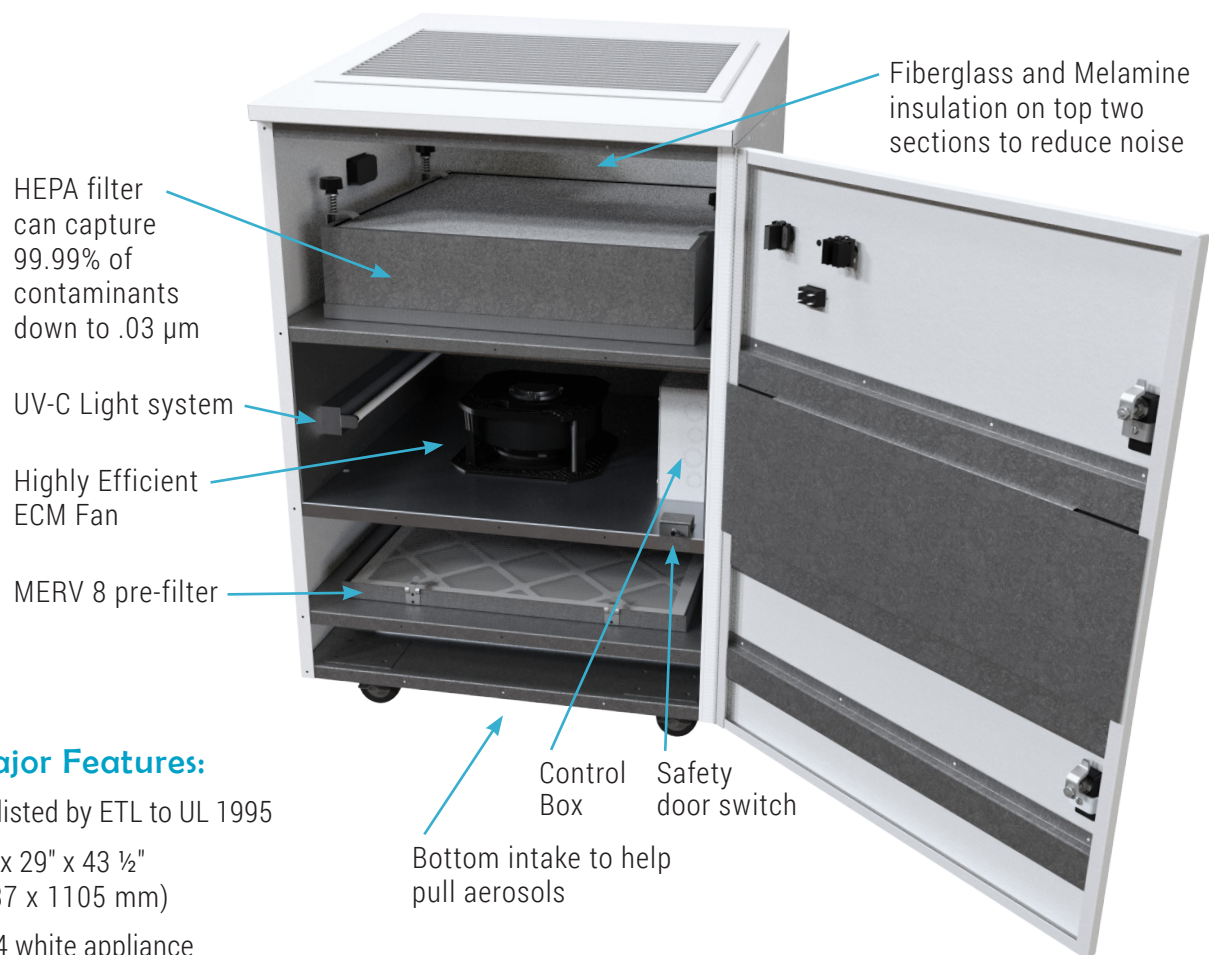
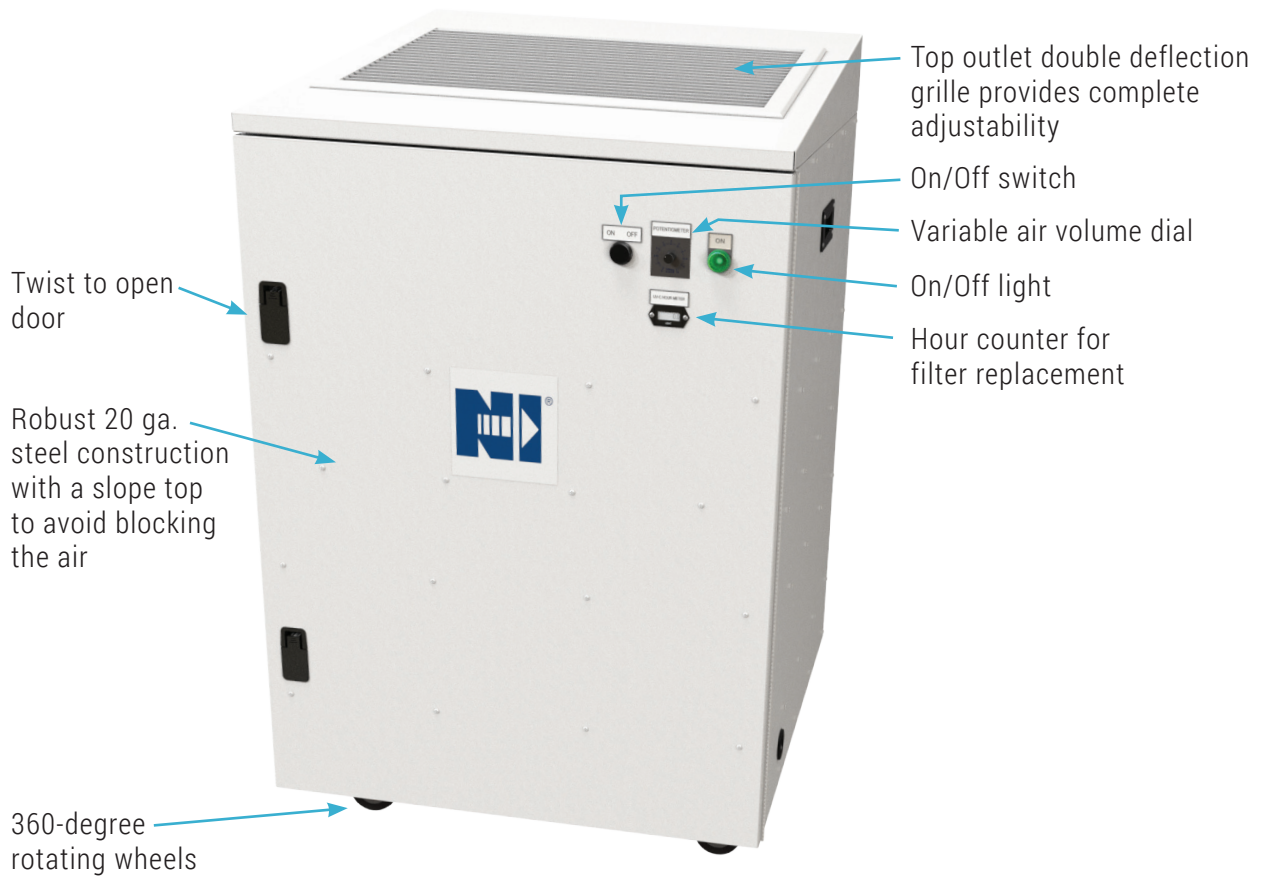
STANDOUT FEATURES

The MAC-700 has the UV-C light standard for this reason. The High Output UV-C Lamp was carefully selected to match the airflow provided by the fan and enable deactivation without the release of ozone. The combination of the highly efficient HEPA filter and UV-C light provides the most capable biological aerosol destruction and sequestration solution available.

Additionally, the unit is equipped with a modulating fan switch; that provides variable air volume control that enable the user to manipulate depending on the size, occupancy, and sound requirements of the space.

To increase the cleanliness of the air and reduce the risk of biological aerosols within your space, adding a Nailor MAC-700 system is the most advanced and quickest solution. The unit has an adjustable speed control ranging from 200 up to 700 CFM (ft³/min) of air which is perfect for offices, schools, restaurants and nursing homes.



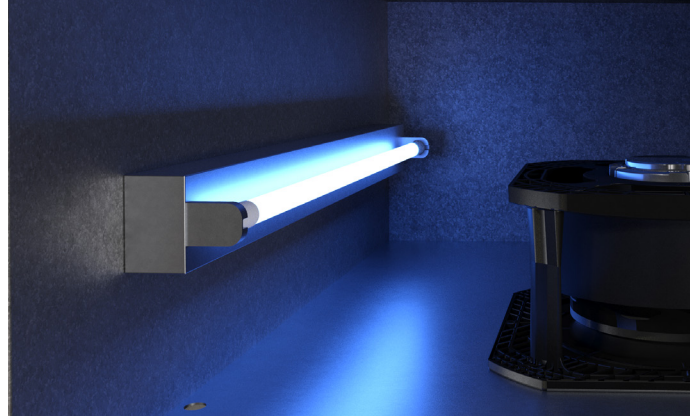


Other Major Features:

- Ratings: listed by ETL to UL 1995
- Size: 29" x 29" x 43 1/2" (737 x 737 x 1105 mm)
- Finish: #4 white appliance
- 120V power cord

UV-C LIGHT

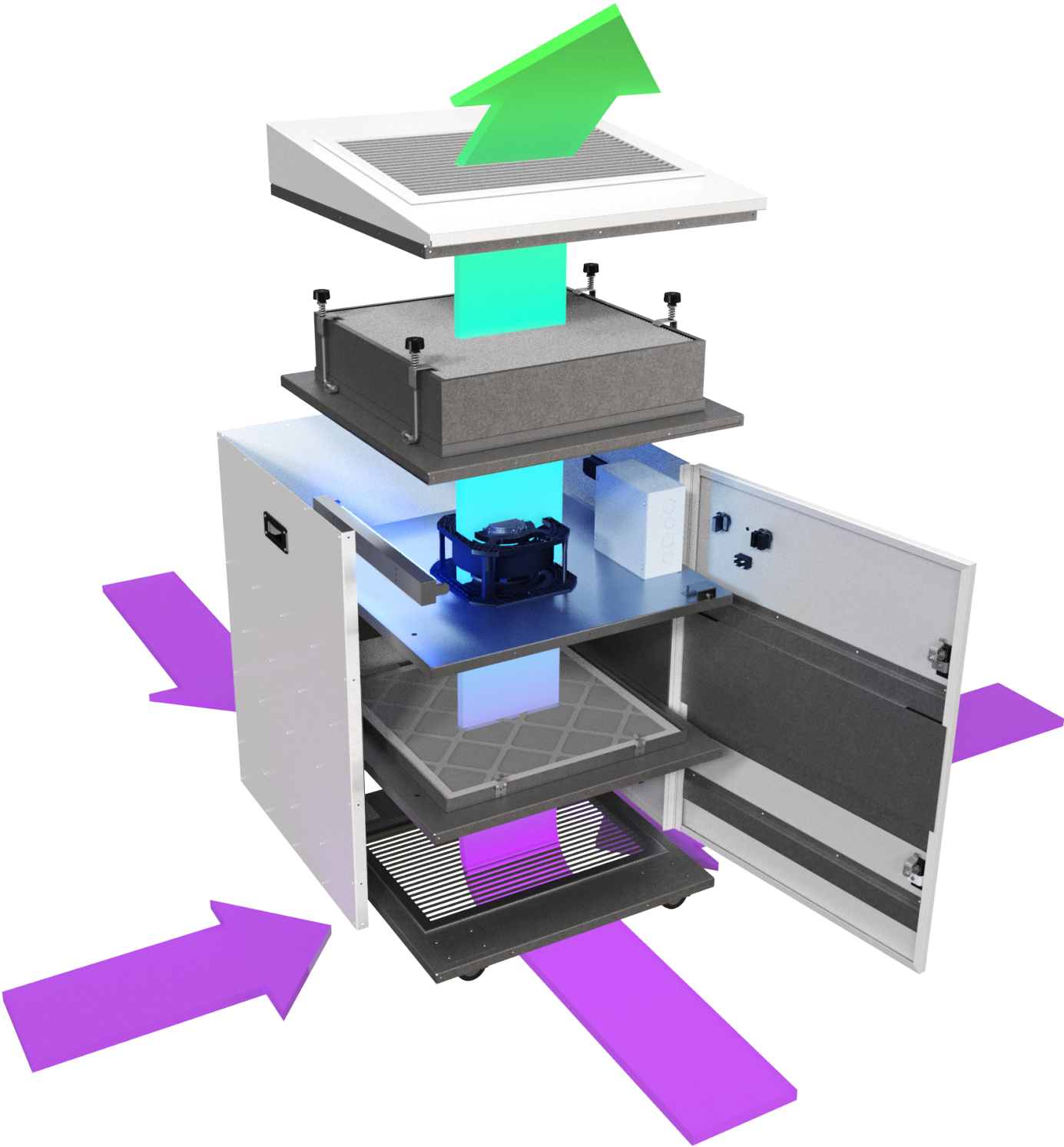
As the air is pulled through the fan, a UV-C light provides next level air cleaning. The UV-C light can destroy the biological aerosols before they reach the HEPA filter using ultraviolet light with a wavelength of 254 nm. The UV-C is long-lasting to reduce the maintenance cost and replacement. The UV-C light is safely placed behind installation and the door has a safety switch to turn off lamp if the door opens.



HEPA FILTER

After the air goes through the pre-filter and the UV-C light, it passes the HEPA grade air filters designed for high efficiency of 99.99% on a $0.03 \mu\text{m}$ particle. The filter has a galvanized metal frame with tight sealing gasket that fits in the unit perfectly. The Media produced from the glass microfibers is moisture resistant and will not support microbial growth.





FREQUENTLY ASKED QUESTIONS

Why does the MAC-700 pull from the bottom?

A recent article from the ASHRAE Journal states... "The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes..." The size of the virus attached to a droplet is larger than 5-10 µm. The virus is best collected as the water droplet dries on the ground, allowing the MAC-700 to easily pull the virus into the bottom without disturbing it up into the air.

What are the applications for a mobile unit?

The MAC-700 is great for any high-risk location, as well as any area that requires cleaner air. The mobile unit will collect dust and microbial air contaminants. Applications include offices, schools, restaurants, nursing homes, hospitals & doctor offices, salons and stores.

What is ASHRAE's stance?

The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) is the leading organization focused on researching and guiding proper HVAC system design and construction. The ASHRAE Position Document on Covid-19 recommends that existing spaces have high-efficiency particle filtration paired with UV-C Lights for the capture and destruction of biological aerosols.

Are there any safety concerns with UV-C?

The UV-C light used in this model is contained in a Quartz glass lamp that eliminates any ozone-producing light from exiting the lamp. The UV-C light contains a tiny trace of mercury inside the lamp. The lamp is no more dangerous than a fluoresce light that is used in most buildings. The biggest safety issue is looking into the light as it can cause damage to the eyes. For this reason, the light is completely encased within the unit and a door switch ensures it is turned off when the door is open.

Where is the air directed?

Filtered air will be released out the top after going through a pre-filter, UV-C lamp, and HEPA filter. Some competitive products blast the discharge air horizontally into the occupied space creating drafts that can affect occupant comfort.

Is the MAC-700 good for a classroom?

The MAC-700 has a slope on the top of the unit, so students do not leave books on top. The unit is equipped with braking locks, safety turn-offs, and can be placed in any location of a classroom. The average classroom in the US is 1,000 sq. ft; the MAC-700 will clean the air in the room over 4 times each hour. The MAC-700 does more than ASHRAE recommended by adding a pre-filter with a HEPA filter making it great for kids.

How quiet is the unit?

The inside of the unit is coated with two types of insulation. One insulation is around the UV light for extra lamp safety and noise reduction from the fan. The other insulation found within the unit is for quiet operation.

How does this differ from an air purifier I would buy at Home Improvement store?

The MAC-700 is able to clean more air than the smaller products offered at big box retailers. The filter is much larger and is able to filter at higher efficiencies for longer than the smaller units. Also, the commercial construction will increase the return on investment over the lifetime of the unit. The MAC-700 is able to clean more air than the smaller products offered at big box retailers. The filter is much larger and is able to filter at higher efficiencies for longer than the smaller units. Also, the commercial construction will increase the return on investment over the lifetime of the unit.

How often do I change the filter?

A good rule of thumb is that the HEPA filter should be replaced from 18 months to 2 years and the pre-filter every 60 to 90 days. ASHRAE article "HVAC and COVID-19" explains that "a MERV 10 pre-filter reduced the amount of deposited SARS-CoV-2 by approximately 70%..." Though the filters need to be changed, it is recommended to have filters to remove debris like dust mites and allergens.

What does it cost to operate?

To operate at max capacity for 10 hours a day for 210 day in a year (weekdays) it would cost \$47 to run.

$$224 \text{ Watts}/1000 \times .10 \text{ \$/hr.} \times 10 \text{ hr./day} \times 210$$

so at 10 hr./day for a year would be \$47.

Why can't I just add a HEPA filter to my current HVAC system?

HEPA filters require much higher pressures than the standard HVAC filters. Adding a HEPA filter to a current HVAC system would require thousands of dollars more than a portable unit worth to redesign. Just adding a HEPA filter without redesign would cause the system to underperform. The easiest course of action to create a cleaner room is to utilize a portable HEPA that can be turned off when the room is not occupied.