



MIDWEST MECHANICAL SOLUTIONS

www.mmsus.com | 952.525.2005

A photograph of an industrial facility, possibly a manufacturing plant or a large-scale HVAC system, with various pipes, ducts, and machinery. The image is overlaid with a solid blue color.

COVID-19 PRODUCTS

Midwest Mechanical Solutions is your partner in optimizing your building for a safe, healthy, and comfortable environment for all.

Contact your MMS Representative at any time, we are here to help.

Advanced HEPA Filtration Recirculation/Negative Pressure Units



AF400NP

1400 cubic foot room / 280 CFM

- Air Flow: Nominal 132 l/s / 280 CFM
- Voltage: 120V (2A) or 230V (1A)
- Dimensions: 21"H x 13"W x 16"D / 55cm x 33cm x 40cm
- Filtration: 2" Pre-filter MERV10 6" Medical grade HEPA filter 99.97% (to 0.3 micron)
- Optional: chemical filter
- Inlet: Bottom inlet
- Discharge: 4" Discharge collar
- Exhaust kit included
- Sound Level: Whisper quiet, 56 dBA
- Controls: Remote ON/OFF, communication capabilities, audible and visual alarms



AF1000NP

3000 cubic foot room / 600 CFM

- Air Flow: Nominal 283 l/s / 600 CFM
- Voltage: 120V (2A) or 230V (1A)
- Dimensions: 56"H x 16"W x 22"D / 132cm x 40cm x 56cm
- Filtration: 2" Pre-filter MERV10 12" High capacity pleated filter MERV12 6" Medical grade HEPA filter 99.97% (down to 0.3 micron)
- Optional: chemical filter (up to 50 lbs./23 kg)
- Inlet: Bottom inlet
- Discharge: 6" Discharge collar (4", 8" optional)
- Exhaust kit included
- Sound Level: Whisper quiet, 54 dBA Controls:
- Remote ON/OFF, communication capabilities, audible and visual alarms



AF2000NP

5000 cubic foot room / 1000 CFM

- Air Flow: Nominal 283 l/s / 600 CFM
- Voltage: 120V (2A) or 230V (1A)
- Dimensions: 56"H x 16"W x 22"D / 132cm x 40cm x 56cm
- Filtration: 2" Pre-filter MERV10 12" High capacity pleated filter MERV12 6" Medical grade HEPA filter 99.97% (down to 0.3 micron)
- Optional: chemical filter (up to 50 lbs./23 kg)
- Inlet: Bottom inlet
- Discharge: 6" Discharge collar (4", 8" optional)
- Exhaust kit included
- Sound Level: Whisper quiet, 54 dBA Controls:
- Remote ON/OFF, communication capabilities, audible and visual alarms



Specification Sheet

CT CleanAir Tower™ (Air Purification Unit)

Description

CT (CleanAir Tower) is a mobile air purification unit that utilizes optional Bi-Polar Ionization, UV Light and Air Filtration to help eliminate contaminants in the air.

- Bi-Polar Ionization creates a controlled amount of positive and negative ions, which attract and neutralize contaminants and particles. These ions are then dispersed into the area around the unit via the air flow outlet.
- The UV Light contained inside the unit uses 254nm wavelength ultraviolet light to neutralize airborne pathogens and microorganisms as they pass through.
- The Air Filter uses traditional filtration to catch larger particles as they enter the unit. The standard filter is available as MERV-4 through MERV-13; alternatively, an optional HEPA filter can be provided, which requires a slightly larger unit housing (specify on order).

Each of these individual purification processes can be used in any desired combination, or all together in conjunction to achieve maximum results.

An illuminated on/off switch and fan speed knob provide clear and easily accessible unit control. Power runs through a standard 120V (120/1/60) or 230V (230/1/60) female electrical plug. Multiple features are incorporated to ensure safe and maintenance-free operation, including a tip-over sensor switch and a circuit breaker to protect internal components.

The CleanAir Tower features all-steel construction with a durable factory applied powder coated finish, available in ten (10) standard colors; custom colors and finishes can be provided to match architectural design (specify on order). The grip handle provides convenient mobility along with the large soft rubber rolling casters, which are safe for use on a variety of floor surfaces such as carpet, wood, ceramic, VCT, and more.





Specification Sheet

CT CleanAir Tower™ (Air Purification Unit)

Features & Benefits

- Ships fully assembled, ready for immediate use
- Multiple options for air purification, which can be utilized simultaneously or in any desired combination
 - Bi-Polar Ionization attracts, neutralizes and safely disperses particles and contaminants
 - 254nm wavelength UV Light neutralizes airborne pathogens and microorganisms as they pass through
 - MERV-4 through MERV-13 Air Filtration traps larger particles that enter the unit (specify rating on order)
 - Optional HEPA Filter provides additional filtration (larger unit housing required)
- Optional Bi-Polar Ionization utilizes AtmosAir tube technology
 - Certified Ozone-Free Technology (UL 2998)
 - ASHRAE 62.1 Indoor Air Quality compliant
- Alternate option for Bi-Polar Ionization utilizes iWave-R Needlepoint technology
 - Certified ozone-free under UL 867
 - Self-cleaning design for maintenance-free operation
- Flexible design allows for alternative ionization and UV light capability provided by the customer (contact manufacturer for additional information)
- Fully designed for simple and convenient mobility
 - Accessible ergonomic handle grip
 - Soft rubber rolling casters protect even the most delicate flooring surfaces
- Illuminated on/off switch provides convenient control and power status indication
- Manual occupant air flow adjustment via easily accessible speed control dial
- All working parts are fully contained within the unit housing for safe, reliable operation
- Multiple features ensure safe unit operation with minimal maintenance
 - Circuit breaker for protection of internal components
 - Tip-over switch monitors and fully deactivates unit when an unsafe degree of tilt is detected
- Quiet operation for unintrusive use in occupied spaces such as offices, classrooms, etc.
- Long-lasting run time between service intervals; up to 18,000 hours continuous operation (subject to change based on selected filter options)



MIDWEST MECHANICAL SOLUTIONS IS A PROUD PARTNER OF ATMOSAIR SOLUTIONS

With over 7,500 installations across all industry sectors, AtmosAir Solutions is a premier provider of bi-polar ionization units. AtmosAir's technology has been certified by UL 2998 as ozone-free to safely sanitize indoor air more effectively than other leading competitors.

As workers return to the office and students return to schools, indoor air quality is a top of mind safety concern. AtmosAir eliminates VOCs, bacteria, dust particles, mold spores, odor and controls the spread of airborne viruses. As compared to a leading competitor, third-party independent testing done at real world ion count levels has proven AtmosAir's bi-polar ionization units reduce the presence of coronavirus by nearly an additional 10% (90% vs 99.92%) in half as long of exposure time (60 min vs 30 min).

Midwest Mechanical Solutions believes in the air purifying technology of AtmosAir's bi-polar ionization, we have installed it into our own homes and offices!

HOW IT WORKS

The AtmosAir system easily integrates into existing HVAC systems and ensures all airflow passes across its patented bipolar ionization tubes. Unlike competitors, AtmosAir™ doesn't wait for the pollutants to find their way into the filter within the air handler. Energized air fills the space with positive and negative ions to actively reduce VOCs, bacteria, dust particles, mold spores, and odors in the space where you breathe. AtmosAir affects COVID-19 on the spiked protein surface of the virus. By removing the hydrogen molecule, it destroys the surface of the virus and rendering it incapable to infect.



SOCIAL

- ⊙ Healthier People
- ⊙ Higher Productivity & Performance



ECONOMIC

- ⊙ Reduced Illness & Absenteeism
- ⊙ Increased Energy Savings



ENVIRONMENTAL

- ⊙ Less Energy Consumption
- ⊙ Reduced GHG Emissions

ANNOUNCED IN JUNE 2020

The presence of coronavirus was reduced by 99.92% within 30 minutes of exposure to AtmosAir's bi-polar ionization technology.

INTERESTED IN LEARNING MORE ABOUT THE POWER OF ATMOSAIR'S BI-POLAR IONIZATION UNITS?

When you choose AtmosAir™, you're supplying your building with an all-natural solution to purify your space. AtmosAir is suitable for commercial, industrial, and residential buildings across all industries. Contact your Midwest Mechanical Solutions Sales Representative to schedule a customized training to learn more!

HIGHLIGHTED INSTALLATIONS

Midwest Mechanical Solutions has installed AtmosAir systems in a variety of buildings.

- 510 Marquette
- Altec Industries
- Anderson Reda
- Bethel Residence Halls
- Breck School
- Children's Discovery Academy
- Federated Insurance
- General Mills
- Gensler
- Hennepin United Methodist
- KFI
- Lancaster Public Schools
- Legend Company
- Medtronic
- Minneapolis Golf Club
- Minot State University
- Nordic Mechanical Services
- Pace Dairy
- Rochester Lutheran Church
- Rochester Lutheran School
- St. Paul Academy
- University of Minnesota
- Villages on McKnight
- Widmer Roel
- Wunderlich Malec
- Zumbro Valley Health Center

SECTORS SERVED

AtmosAir is installed in a highly diverse portfolio, composed of expertise across all major construction market sectors. AtmosAir brings a niche expertise to a wide range of work, from traditional to newly emerging markets.

- Commercial Offices
- Healthcare
- Schools/Universities
- Hospitality
- Casinos
- Food Service
- Sports
- Airports
- Assisted Living

AtmosAir

Indoor Air Purification System

AtmosAware

Indoor Air Quality Monitoring System

AtmosSmart

Ionization Level Controller

AtmosCare

Managed Service (Maintenance)



Composite Tubes

- Composite Tubes allow us to meet the most stringent UL 2998 no ozone requirements
- Durable, shatterproof
- Withstands maximum airflow
- Withstand temperature swings
- Easy to handle and replace
- Two year lifespan

Simple Installation

- Simple installation takes less than 45 minutes
- Easy access to Ionization Tubes for cleaning or replacement
- Benefits to occupants is typically noticeable in less than 1 hour



Real-Time IAQ Monitoring & Ionization Control

The AtmosAware and AtmosSmart systems make clean air visible by using proprietary technology to ensure optimal air ion levels are maintained throughout your space. AtmosAware sensors measure different environmental conditions such as TVOC, Ozone, and Relative Humidity. The AtmosSmart logic-based controller interprets the data and automatically adjusts ion intensity to ensure optimal levels and air cleaning performance are maintained, 24/7.

Carson Solutions is so excited to announce the addition of AtmosAir's Bi-Polar Ionization (BPI) technology to the QLCI! The ASHRAE Epidemic Task Force recently released new recommendations for schools and universities and lists BPI as a filtration approach without the added pressure drop. Carson Solutions patent-pending application creates a healthier environment for all.

ABOUT DISPLACEMENT VENTILATION

Displacement ventilation is proven to remove space respiratory contaminants in occupied zones. The industry-renowned Harrick Lab at Purdue University has validated stratified air conditions in cooling and heating modes through CFD modeling. With proven year-round displacement ventilation, the QLCI doesn't just dilute spaces with air, it effectively purges contaminants out of the breathing zones.

ABOUT BI-POLAR IONIZATION

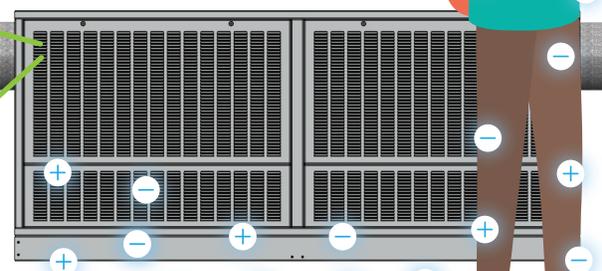
Bi-polar ionization (BPI) generates negatively and positively charged ions through an environmentally friendly process. These ions directly attack the DNA of bacteria and viruses, protecting your space's inhabitants from illness and disease. Per UL867, BPI emits no ozone and has no harmful byproducts. AtmosAir's bi-polar ionization has verified by a top lab to kill 99.92% of the Coronavirus (strain 229E) within 30 minutes of exposure.

DISPLACEMENT VENTILATION + BI-POLAR IONIZATION

Together, the displacement ventilation technology of the QLCI coupled with bi-polar ionization (BPI) makes for a healthier occupied space. The near-floor supply air outlet on the QLCI delivers active ion charges that directly attack the heavier droplets that have fallen or collected on lower surfaces. The strategic direct mounting of the AtmosAir BPI provides improved sanitation effect of viruses and bacteria versus the standard air handler. This proactive approach continuously flushes and attacks contaminants during occupied times. Both technologies are have been independently tested and proven to sanitize and purge contaminants for an improved indoor air quality (IAQ).

NEW CONSTRUCTIONS OR RETROFIT!

Implement QLCI + BPI for your next design project. Have the QLCI already installed? Integrate a retrofit kit for increased IAQ benefit.



CRITICAL ROOM CONTROL SOLUTIONS / PRODUCT OVERVIEW

OCTOBER 2012

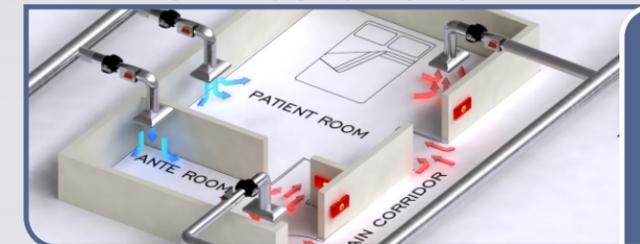


LAB SOLUTIONS



LAB SOLUTIONS

HEALTHCARE SOLUTIONS



HEALTHCARE SOLUTIONS

PRODUCTS



CRC PRODUCTS



ROOM PRESSURE MONITOR / CONTROLLER

CRC RPM / CRC RPC

Our Room Pressure Monitors are specifically designed to give personnel a clear, accurate, and unambiguous indication of the room's pressure environment and alarm status. Unlike other monitors that include LEDs or LCDs with cluttered graphics and confusing / hard to use interfaces, CRC uses clear to understand graphics with a bright vibrant color touch-screen that can be easily configured to meet an individual facility's needs.

From concept to completion of our designs, we continually seek feedback from the end user. We incorporate features that not only improve safety and efficiency, but also drive industry standards and best practices in systems that monitor and control critical spaces. This approach has made Critical Room Control the technology leader in critical environment applications.

AUTOMATED CLEARING / PURGING

A feature of the RPM/C is the ability to configure it with an automatic clearing time. When the device is switched from Isolation Mode to Non-Isolation Mode, the device will automatically maintain the pressurization of the room and display the clearing screen until the clearing time has expired.

A countdown timer is displayed on the main screen, giving minutes and seconds left in clearing mode.



"OCCUPIED - NO PRESSURE" MODE

To help facilities better utilize the rooms they have, the CRC-RPM/C offers a non-isolation occupied mode which will control the room's pressure to a non-isolation set point providing considerable energy savings.

ROOM CHANGE OVER AUTOMATION

To speed up room changeover and increase room utilization, the CRC-RPM/C offers a "TO BE CLEANED" mode. This mode can be remotely communicated to housekeeping / cleaning personnel.

After the room is cleaned, personnel only need to touch the "CLEANED" button to switch the CRC-RPM/C to "VACANT" Mode.



"VACANT" MODE

The CRC-RPM/C "VACANT" Mode gives a clear indication that the room is available for occupancy. While in this mode, the CRC-RPM/C is conserving energy by controlling the room's pressurization to a non-isolation set point.

EASILY HIDE / SHOW DIFFERENTIAL PRESSURE

CUSTOMIZABLE ROOM NAMES

CUSTOMIZABLE MODE LABELS

ROOM PRECAUTIONS (optional)

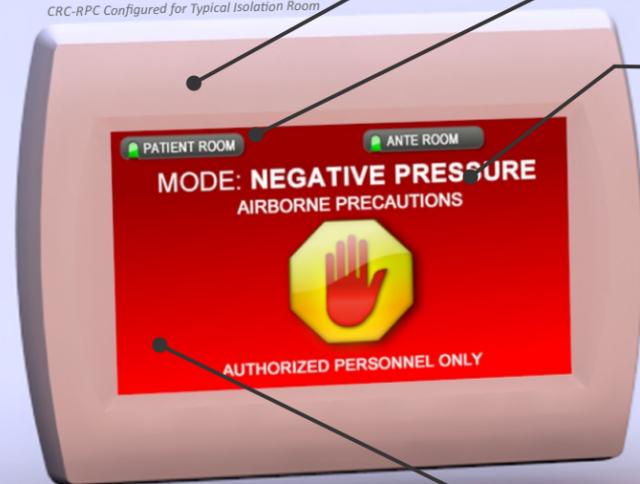
Safeguarding the lives of staff and visitors should be paramount when selecting the proper isolation room monitor / controller. Infectious control is especially important with Negative Isolation Rooms. That is why our monitors display precaution information prominently on the main screen. CRC is the ONLY monitor on the market today that offers this important feature.

Available Precautions:

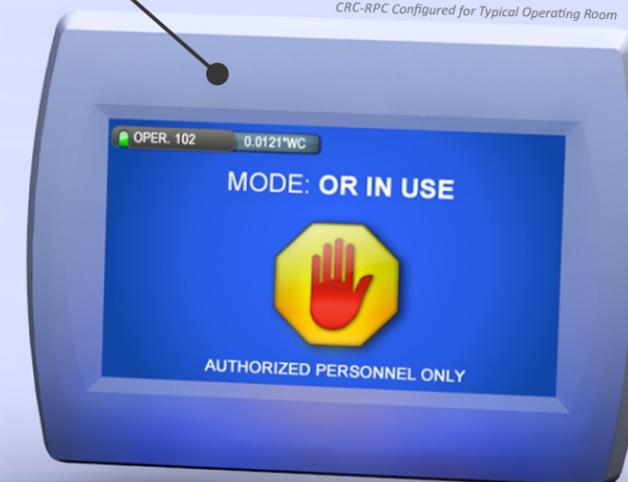
- Airborne Precautions
- Droplet Precautions
- Contact Precautions
- Standard Precautions
- None

CUSTOMIZABLE BACKGROUND COLORS

CRC-RPC Configured for Typical Isolation Room



CRC-RPC Configured for Typical Operating Room

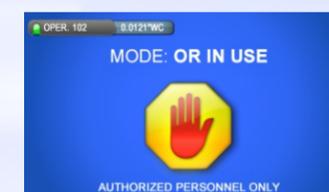


PRESSURE ALARM SEQUENCE OF EVENTS:

"MORE INFO" SCREEN

A powerful feature of the CRC - RPM / RPC is the MORE INFO screen that allows staff to access additional environmental information, check alarms, and make set point changes.

Up to 8 additional points can be independently configured to show current values and set points, audible and visual alarms, and allow set point changes.



When a drop in pressure occurs, the RPM/C will display "Loss Of Pressure - Check Door" text by Room Label.

When the audible alarm delay expires (configurable) the unit will go into audible alarm and change the screen to red.

MULTIVIEW MONITOR

CRC MV

The MultiVIEW is an advanced 7" LCD touchscreen display that is designed to be configured for any monitoring or sequencing application. Its core function is to give local access to critical information in an easy to read display. It's versatile design allows any of its on-board analog, digital inputs, or network connections to drive the information being displayed on the screen. Additionally, any of the on-board analog outputs or relays can be setup to drive a signal out to a BAS or peripheral device such as a valve or VFD. The MultiVIEW supports up to six (6) fully configurable graphical icons. The six graphical icons allow the facility user to view and/or make changes to point values, modes, status, set points, and alarms.

The icons can be independently configured to retrieve their value from an analog input (0-5v, 0-10v, 4-20mA), digital input, or network communication.

To support virtually any sequencing scenario, the four on-board analog outputs and relays can also be configured to be driven by a point's alarm status, audible alarm status, current value, or set point value.

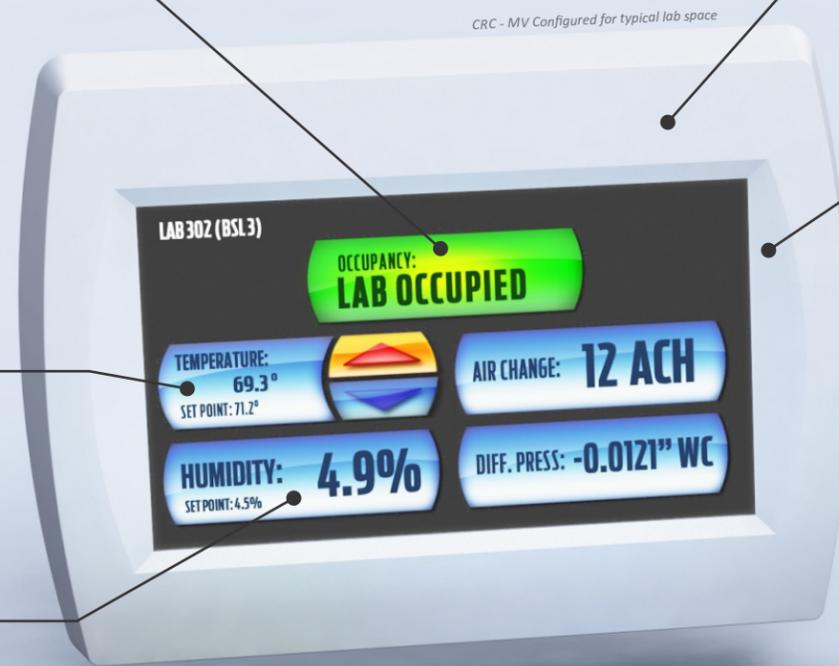
UP TO 6 FULLY CUSTOMIZABLE ICONS

Customization options include:

- Default background color
- Show / hide set point
- Allow set point change
- Engineering units
- Number of decimal places to display
- Background color per list item
- Individual audible alarm delays

EASY TO ADJUST SET POINT

EASY TO READ VALUES AND STATUS

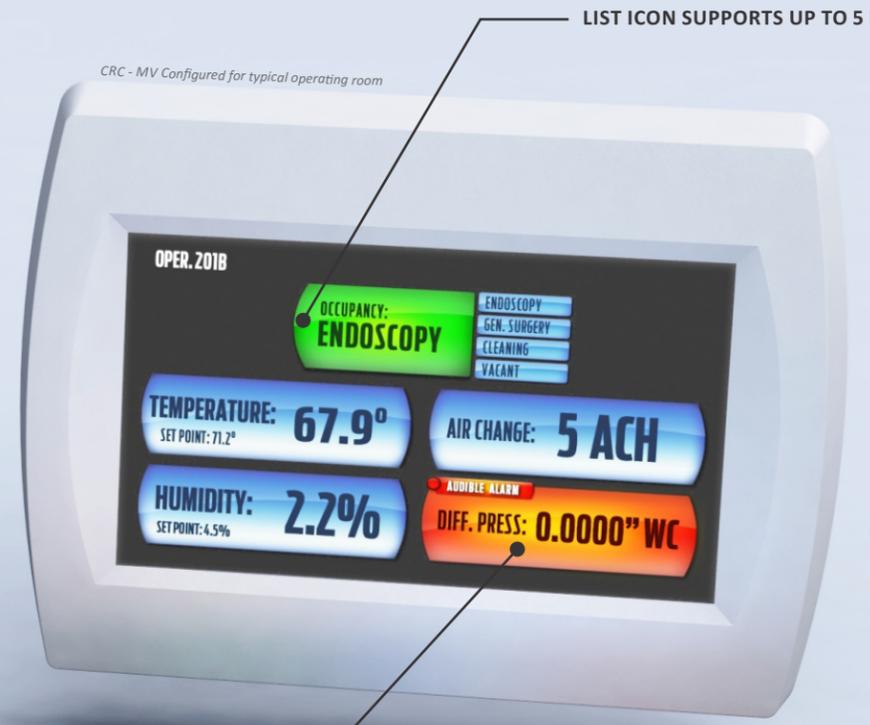


CRC - MV Configured for typical lab space

BRIGHT / SUNLIGHT READABLE 7" LCD TOUCH SCREEN

FULLY CUSTOMIZABLE LAYOUT

5 Icon layouts, plus the ability to hide a specific icon



CRC - MV Configured for typical operating room

LIST ICON SUPPORTS UP TO 5 LIST VALUES

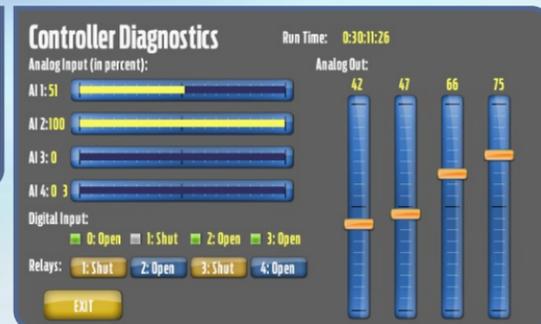
EASY TO SEE VISUAL AND AUDIBLE ALARMS

3 Alarm States:

- Alarm
- Audible Alarm
- Alarm - Muted

I/O DIAGNOSTIC SCREEN

Installers can easily troubleshoot hardwire connections to the MultiVIEW Monitor. This screen visually shows the incoming signal for all analog and digital inputs, and allows the user to set individual analog outputs or relays. **This feature is available on ALL of CRC's monitors.**



INTEGRATED I/O CAN BE CUSTOMIZED TO SUPPORT ANY HARDWIRE SEQUENCING NEEDS

4 Analog Inputs

Can be configured to:

- Drive current value
- Drive list value

4 Analog Outputs

Can be configured to:

- Hardwire current set point value
- Mirror any analog input
- Output a constant voltage signal for each list item

4 Digital Inputs

Can be configured to:

- Drive binary list value (i.e. On / Off, Open / Closed, etc.)

4 Relays

Can be configured to:

- Mirror DI
- Communicate point's alarm status
- Communicate point's audible alarm status
- Open / close based on list item selected

USING HUMIDIFICATION TO REDUCE THE TRANSMISSION OF VIRUSES

EXECUTIVE SUMMARY

Healthy levels of humidification can help to reduce the spread of viruses that includes those that infect our respiratory tract like COVID-19 (SARS- CoV-2) and Influenza A in the built environment.

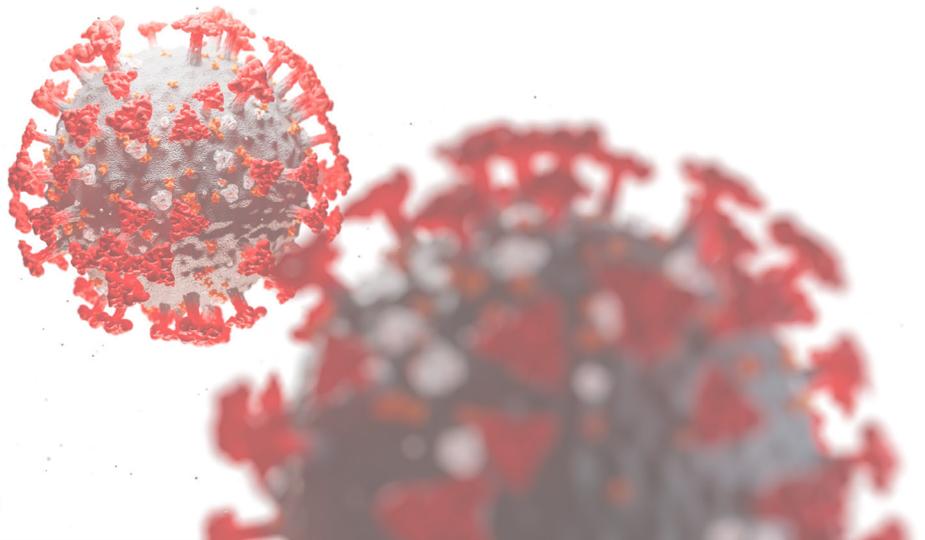
While this applies to all buildings – hospitals, clinics, senior living communities, and schools are among those that may benefit the most from the implementation of optimal humidity levels. The World Health Organization has called for non-pharmaceutical approaches to mitigate the transmission of COVID-19, and the addition of humidity is a safe, efficient and easy way to protect staff, patients, residents, teachers, and students.

It is well known that too much water vapor within the building envelope can cause problems such as mold and fungus growth, but it is important to understand the benefits that precisely controlled humidification can add to all indoor environments.

The goal of this white paper is to improve the understanding of the role of humidification in reducing the transmission, infectivity and severity of COVID-19 and other viruses, review current industry standards, and present strategies for implementing this non-pharmaceutical approach to a healthy indoor environment.

To read the full white paper, visit the MMS website.

[Read More](#)



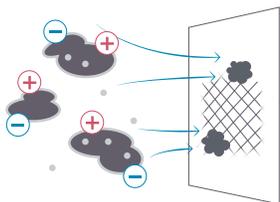
The Bipolar Ionizer cleans the air by introducing positive and negative ions into the space through the fan coil airflow. It is safe, ozone free, easy-to-install and low maintenance.

Partnered with a MERV 8 filter, the bipolar ionizer is a highly effective neutralizer.

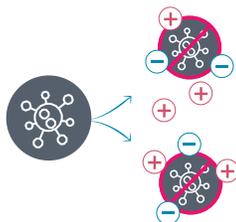


How It Works

The needlepoint brush-type ionizer produces a high concentration of positive and negative ions, delivering them to the space through the air stream. Within the air stream, ions attach to particles, causing the particles to become larger and more easily filtered from the air. When ions encounter pathogens, they disrupt the pathogens' surface proteins, rendering them inactive.



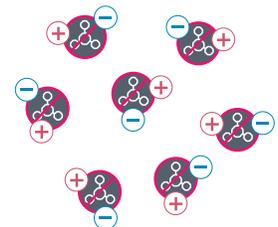
Airborne particles are charged by the ions causing them to cluster and be caught in filters



As they divide to reproduce, bacteria and virus cells bond with oxygen ions and are destroyed/neutralized



Odorous gases and aerosols oxidize on contact with oxygen ions and are neutralized



Oxygen ions cause a chemical reaction with VOCs breaking down their molecular structure

Market Applications



Higher
Education



K-12
Education



Hospitality



Multi-family
Residential



Office



Healthcare

Bipolar Ionizer

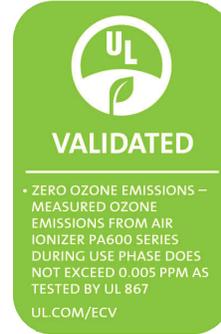
The needlepoint brush-type ionizer producing an equal amount of positive and negative ions neutralizing harmful pollutants and odors. The unit is installed at the fan inlet of fan coil units and is self-contained in a potted ABS box with a molded flange and mounting holes. The 602 model accepts 24V AC without the use of an external power supply device. The unit is protected with an inline 500mA glass cartridge fuse. Each ionization unit is capable of ionizing a supply airflow of 2,400 CFM.

Product Availability

The Bipolar Ionizer is available for the following IEC product families:

- Horizontal Ceiling
- Horizontal & Vertical Hi-Performance
- Vertical Floor*
- Vertical Stack (Mod)*
- Direct Drive Blower Coil
- Belt Drive Blower Coil

*not available for Stud (STW, STY) and Vertical Stack Ditto MAY/MBY units



PART NUMBERS

G100-71542101
Bipolar Ionizer

F158-90031539
Mounting Bracket

Contact Aftermarket Parts Department to verify proper wiring and control sequence if Bipolar Ionizer is not ordered with a unit. Additional parts may be required for proper function.

SPECIFICATIONS:

Airflow Capacity:	2,400 CFM
Pressure Drop:	Less than 0.01 In. WG
Housing Material:	ABS
Weight:	0.2 lbs.
Maximum Operating Temperature:	200° F (93°C)
Electrical:	
Voltage:	24V AC (602)
Power Consumption:	Less than 1 watt
Frequency:	50/60 hertz
Over Current Protection:	500mA Glass Cartridge Fuse
Lead Wires	50"(L)

Ionization Output:

Mode of Operation	Needlepoint Type
Needle Configuration:	Brush Type

DIMENSIONS: See Figure 1

APPROVALS:

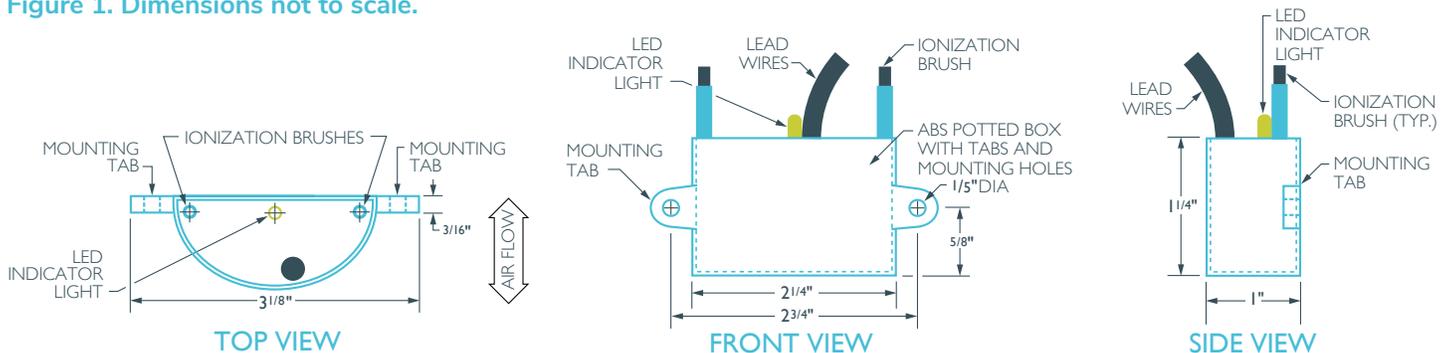
Intertek/ETL tested in accordance with:

- UL 867: Electrostatic Air Cleaners
- UL 2043: Fire Test for Heat and Visible Smoke

UL Validated:

- 2998: Zero Ozone Emissions

Figure 1. Dimensions not to scale.



IEC Part Number: I100-90034480
FL-420 (11/2020)

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UVC SterilVentilation

Decontamination of recirculated air for highly occupied space



The LTG UVC *SterilVentilation* helps to reduce the risk of contracting airborne (aerosol) viruses (e.g. Covid-19 and influenza). Ideal for retrofitting in any room irrespective of any existing HVAC system.

steril
ventilation



				
self-sterilizing no filters to change	UV-C Protection	low noise & 24 hr. operation	room recirculation	trusted German know how & engineering

- The high-efficiency low pressure UV-C emitter and airflow recirculation rate within the LTG unit has been specifically engineered to work in a matter of seconds against the Covid-19 pathogen SARS-CoV-2 to achieve a **disinfection rate of 99,99 % (log 4)** (as tested in accredited S3-laboratory, Goethe University Frankfurt)
- **Fast & reliable, ozone and chemical free disinfection** of the recirculated ambient room air (patent pending)
- **Silent and effective room diffusion** with proven LTG tangential airflow technology for up to 140 cfm per unit
- **Simple protection of people** through verified filterless recirculation of room air past the lamp emitter which is shielded to prevent UV-C light spill into the room.
- **Independent of existing HVAC system**, just need a power supply and an on/off switch, **simple installation** into T-bar ceilings with suspension brackets

LTG Aktiengesellschaft, a pioneer in air and climate technology, is always one step ahead with trend-setting innovations for more than 95 years and has won the Innovation Award of the State of Baden-Wuerttemberg in 2017.

It is well known that the risk of infection by viruses, bacteria and mold spores increases if the spaces are inadequately ventilated with fresh (outside) air. The problem increases exponentially in highly occupied areas (e.g. office and meeting rooms, waiting rooms, K thru 12 classroom, restaurants, and fitness / sports facilities etc.) where there is poor or inadequate ventilation. The LTG UVC SterilVentilation was developed for these commonly used spaces, an innovative, patent pending device that reliably sterilizes airborne pathogens such as COVID-19, which might otherwise remain contained in the room air and passed from person to person.

Operating mode

The UVC SterilVentilation is a maintenance free and ready to plug in sterilization unit for recirculated air. A quiet 2-speed LTG tangential fan pulls air from the room into the shielded housing. Inside the housing a high-performance UV-C low pressure emitter will sterilize up to 99.99 % of germs such as SARS-CoV-2, influenza etc. .

Each UV-C-tight enclosure is tested and measured in certified laboratory, ensuring a hazard-free operation. The filterless design minimizes maintenance and could allow for 16,000 hours of non-stop operation (this also removes the potential risk of having to periodically replace potentially COVID laden filters).

In contrast to comparable solutions, the proven LTG air flow technology provides effective room distribution and as a result, the entire room recirculated air is reliably disinfected.



Effective room perfusion guarantees max. decontamination of aerosol attached viruses

Technical Data

	UVC SterilVentilation
Length x width x height	22 x 22 x 8 inches (to suit 24"x24" T-bar ceilings)
Air volume (max.)	140 cfm
Noise level NR *	NR 36 max mode (140 cfm)
Power consumption	50 W
Voltage	115 V (277 V fitted transformer available)
IP protection class	20
Weight	25 lb
Durability lamp	16 000 hours

*at 10 dB room absorption

Features

- Ozone and chemical free – invisible, natural, odorless radiation from high powered UV-C low pressure emitters (wavelength 254 nm)
- Germany engineering – proven high quality comfort air and UV-C components & measured recirculation volume based on disinfectant rates measure within S3 laboratory
- Low maintenance non-stop operation, unit is 'filterless' as this avoids the risk of having to swap out, and dispose of, potentially COVID laden contaminated filters
- Simple installation, no special knowledge required (plug and play)
- Power isolation of lamp ensured by design for maintenance replacement
- Certified shielding of the UV-C emitter according to DIN EN ISO 15858 ensures hazard-free operation in the presence of humans
- 2-speed operating mode (Silent-/Max-Mode), selectable depending on the application
- LED display for optical function monitoring

Suggested number of UVC units (high flow) *

Room Type	Office (open Plan)	Meeting Room	Waiting Room
Space per person	100 SF	50 SF	36 SF
Residence time	6 hours	90 mins	30 mins

Room Area [SF]	Number of Units								
	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	1
150	1	1	1	1	1	1	1	1	1
250	1	1	1	1	1	1	1	1	1
350	1	1	1	1	1	2	1	1	1
450	1	1	2	2	2	2	1	1	2
550	1	2	2	2	2	2	1	1	2
650	2	2	2	2	2	3	1	2	2
750	2	2	3	2	3	3	2	2	2
850	2	3	3	3	3	3	2	2	2

HVAC with fresh air supply
Ventilation by Windows
Recirculation Heating/cooling only, No ventilation

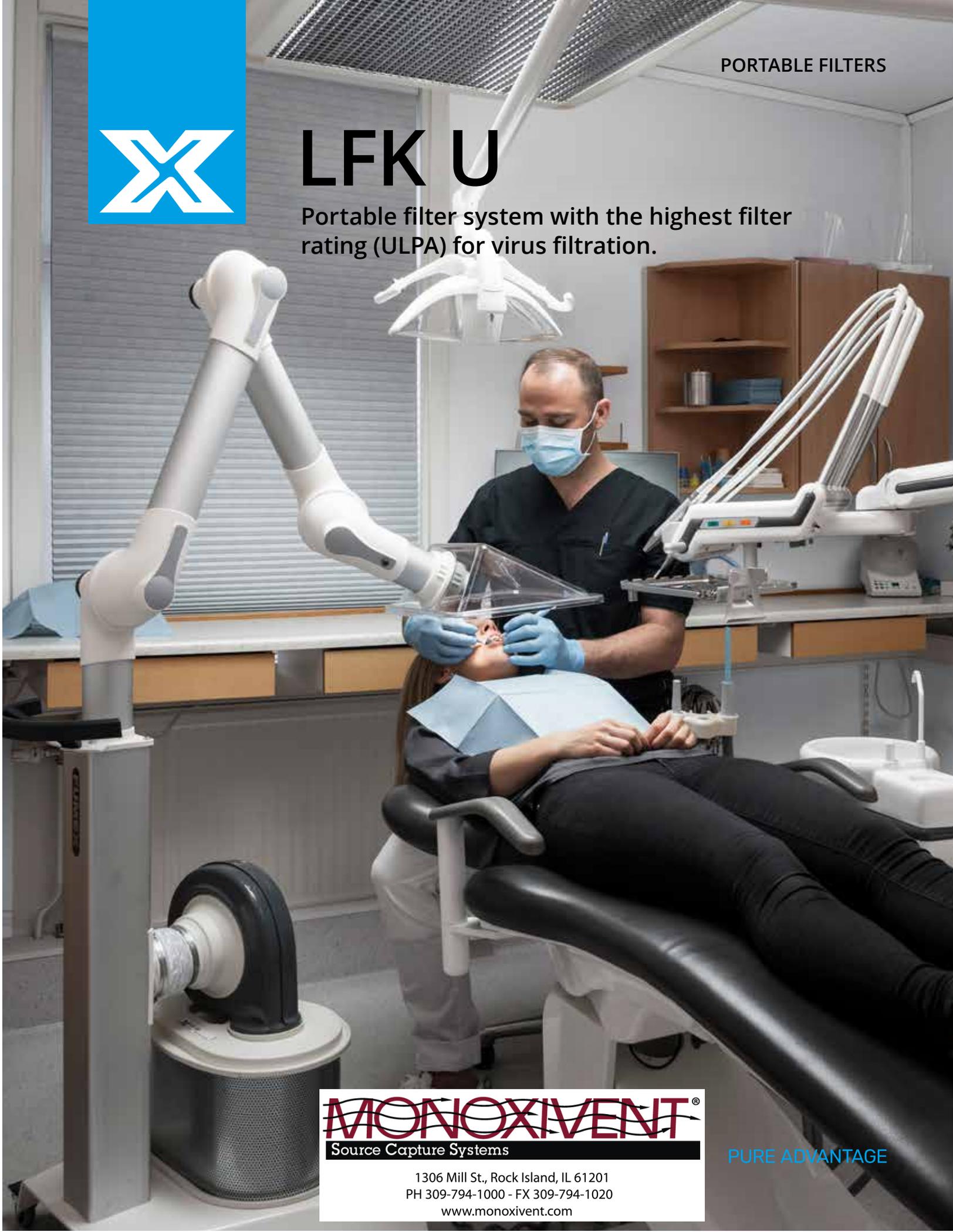
* based on model by RWTH Aachen University, Germany, 2020

PORTABLE FILTERS



LFK U

Portable filter system with the highest filter rating (ULPA) for virus filtration.



MONOXIVENT®

Source Capture Systems

1306 Mill St., Rock Island, IL 61201
PH 309-794-1000 - FX 309-794-1020
www.monoxivent.com

PURE ADVANTAGE

LFK U

- Filter FPU 50
- Fan FF 100
- Hose SL-100LF
- Flexible table bracket MBF
- Extractor arm MEB 1300-50/75
- Suction Nozzle MES 300-50/75

LFK U on LF TR

- Filter FPU 50
- Fan FF 100
- Hose SL-100LF
- Portable Trolley LF TR
- Extractor arm MEB 1300-50/75
- Suction Nozzle MES 300-50/75



Portable filter system for environments where protection against viruses is essential, e.g. dental clinics, healthcare facilities and laboratories.

MNX LFK U is an effective and flexible solution consisting of a fan, filter and fume extractor in a single unit. It is highly suitable for use in healthcare environments where exhaled air, which could potentially contain viruses or residues from inhaled medicines, can be problematic.

MNX LFK U is available in two versions: **LFK 150U** with a Ø2" extractor arm, and **LFK 175U** with a Ø3" extractor arm. LFK U works according to the low-vacuum principle, which entails a very low risk of filter failure, produces little noise and has low power requirements.

For maximum efficiency, MNX LFK U is equipped with a highly efficient filter (ULPA 15 rating), an optimised fan with a reliable EC motor with speed control and a

flexible ME extractor arm, which features the lowest pressure drop on the market.

Among the accessories is the **LF TR**, a portable trolley on lockable wheels with bracket for the ME extractor arm. **LF TR** is compact and easily blends into the work environment.

The fan and filter can be combined with other extractors available in MNX range of products.

AURA HEPA + UV

High capacity and high efficiency airborne infection air filtration units

Portable all aluminum stand alone or ducted, 120/1/60 plug in power connection

Variable speed control of up to 2000 CFM of air handling for high air change recirculation or negative pressure isolation rooms.



Mission Critical Healthcare environment protection!

Multistack® Aura HEPA+UV Units are specially designed to ensure the containment of hazardous airborne infection contaminants for mission critical applications such as:

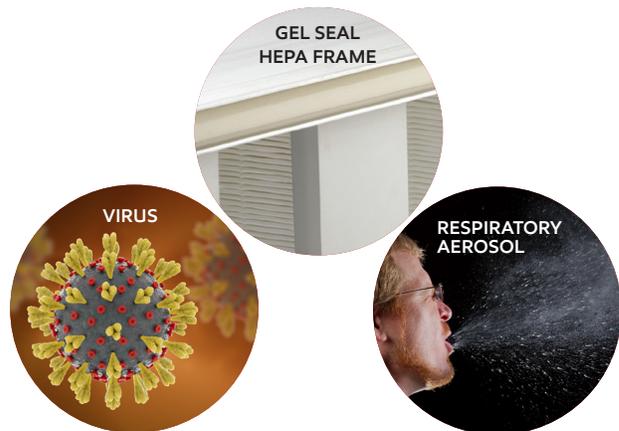
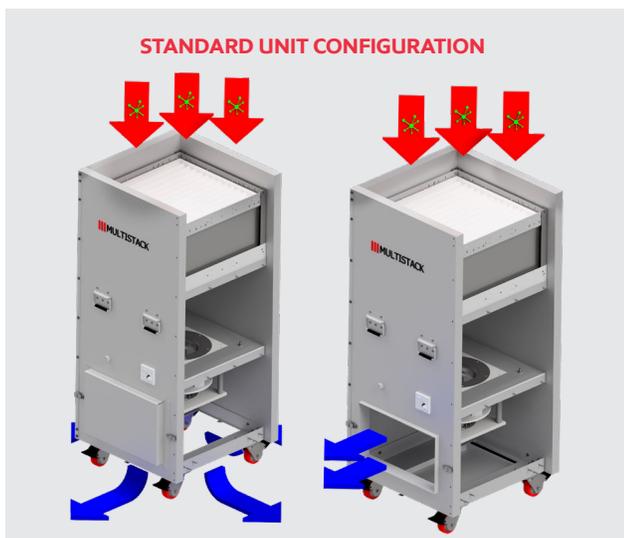
- Negative Pressure Isolation Chambers
- Healthcare Areas requiring Airborne Infection Filtration
- Medical Center Reception Areas
- Nursing Care Homes
- Assisted Living Facilities
- Daycare Centers and Preschools
- Correctional Facilities
- Military Facilities
- Workplace Cafeterias

Any other areas requiring protection from airborne pathogens that can be spread via respiratory aerosol.

Designed for zero leakage, the Multistack® Aura HEPA+UV Air Filtration units are specially engineered to allow for the flexibility of : Free flow, or multi breathing zone contaminated air capture connections, as well for free flow floor or ducted clean air exhaust connection for Negative Pressure Isolation Rooms.

Compact narrow and tall design of the system allows the contaminated respiratory exhaled air to be captured near the source of the contaminant.

Built on easy to move lockable casters the Aura HEPA+UV Filtration unit is designed to easily maneuver through limited-access elevators, staircases, hallways, and doors.



AURA HEPA + UV

High capacity and high efficiency airborne infection air filtration units.

Portable all aluminum stand alone or ducted, 120/1/60 plug in power connection.

Variable speed control of up to 2000 CFM of air handling for high air change recirculation or negative pressure isolation rooms.

The bolt-based technology using membrane tape, and compression plate of the All Aluminum unit enclosure assures zero leakage around the HEPA filter housing as well as offer complete unit sealing integrity.

The enhanced 2 inch double-wall with non-fibrous close cell foam injected enclosure is packaged with the latest advances in HVAC technology including; fully modulating ultra-quiet ECM fans, long service life V-bank HEPA filters rated at 99.99% @ 0.30 microns with Gel Seal frame.

Plus optional UV filtration in either post-HEPA filter virus deactivation or pre-HEPA filter surface UV irradiation for longer term virus deactivation.

To guard the safety of your healthcare facilities, provide comfort to the health care providers and other occupants of your mission critical operations:

Choose Multistack®!



SPECIFICATIONS

Height (inches)	66
Width (inches)	29
Depth (inches)	29
Weight (pounds) including filters	310

ELECTRICAL DATA 120/1/60

Full Load AMPS	HEPA	HEPA + UV
	4.60	4.82
MCA AMPS	6.0	
MOP AMPS	15	

BASIC STANDARD UNIT

- Free flow top air inlet and field switchable free flow floor or ducted clean air exhaust connection for negative pressure applications
- Up to 2000 CFM
- Fully modulating ECM fan
- MERV 8 pre-filter
- High capacity, long service life V-bank Gel Seal frame HEPA filters rated at 99.99% @ 0.30 microns
- Easy to maneuver lockable casters
- 15 feet cord with plug

OPTIONS

- UV filtration in either post-HEPA filter virus deactivation or pre-HEPA filter surface UV irradiation for longer term virus deactivation.

**Pre-HEPA
High Intensity
UV Option**



**Post-HEPA
High Intensity
UV Option**



**Free flow
floor level**



**Duct
connection
for Negative
pressure**



**POWERED
AIRE Inc.** 
AIRE CURTAINS

THE

UVCAire™

BY POWERED AIRE



**New from
Powered Aire**

Clean Air. Sanitized Air. Powered Aire

UV-C Light-based germ deactivation tucked inside a stainless-steel Air Curtain offering unparalleled environmental separation and air purification that can kill up to 99.9% of Coronavirus (COVID-19)

WHY INCORPORATE UV-C LIGHT INTO AN AIR CURTAIN?

Today, more than ever, there exists the need to reduce germs within environments within public areas. The COVID-19 Pandemic has forever changed the way we live, work, shop and play. Powered Aire air curtains are excellent tools for separating environments and improving the level of comfort by preventing the entrance of unconditioned air, smoke, fumes, insects and other unwanted elements.

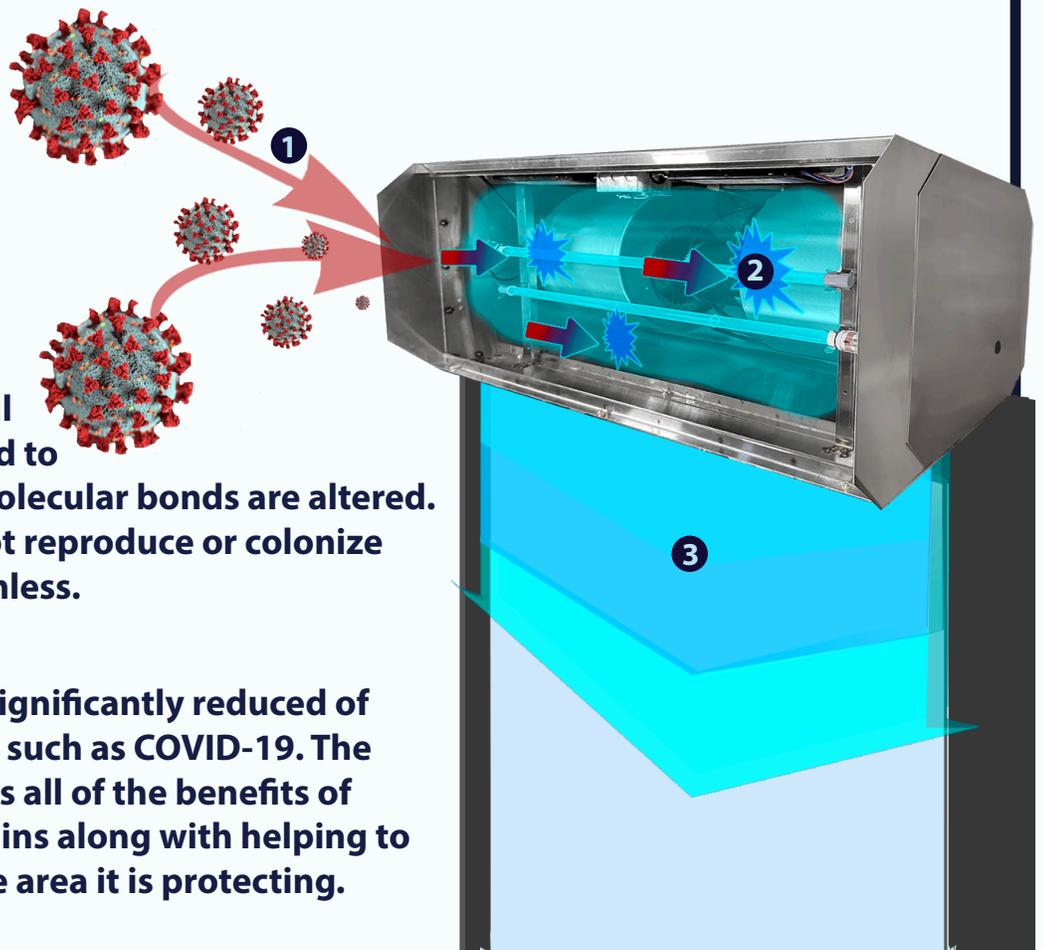
With the addition of UV-C light to our air curtains, we can now improve safety by helping to eliminate the spread of airborne bacteria and viruses. These devices are capable of removing up to 99.9 percent of the airborne Coronavirus/COVID-19 pathogens passing through the air curtain and most units will boost inactivation percentage rates in the mid- to high-90s depending on speed and number of emitters.

Powered Aire's UVC-Aire is available in a stand-alone unit or as a retrofit extension for pre-installed units. The UVC-Aire is also effective against airborne pathogens, bacteria, and other forms of the SARS virus, as well as MRSA.

Of further benefit, the higher the volume of air recirculated through the air curtain, the cleaner it becomes. Multiple passes mean a greater reduction of germs!

HOW IT WORKS

- 1 Germs, viruses and bacteria are pulled into the intake screen of the air curtain.**
- 2 Upon passing through the screen, the harmful pathogens are exposed to UV-C light and their molecular bonds are altered. Ultimately, they cannot reproduce or colonize and are rendered harmless.**
- 3 The discharged air is significantly reduced of dangerous pathogens such as COVID-19. The circulating air provides all of the benefits of Powered Aire air curtains along with helping to clean and disinfect the area it is protecting.**





Standalone air curtain with:

UVC-Aire –Powered Aire’s air sanitation system proven to eliminate COVID-19 and other viruses from the air.

Up to 99.9% airborne kill-rate effectiveness on Low Speed and up to 95.7 on High Speed.

99.99% surface kill rate for self-cleaning inside unit.

Unit runs continuously on low speed when the door is closed, to purify the air.

Unit will ramp up to potentiometer-set speed when the door opens.

Adjustable speed, ¾ HP ECM Motors offer up to 72% energy savings over PSC motors.

Fully-assembled and available in full foot increments from 36” up to 168” (emitters installed in the field).

Includes unit mounted cleanable filter and disconnect switch for safe and secure maintenance and emitter replacement.



Extension of the air curtain case for retrofit of previously installed air curtains:

UVC-Aire –Powered Aire’s air sanitation system proven to inactivate Coronavirus and other viruses from the air at up to a 99.9% effectiveness rate.

Designed to retrofit on most existing unheated or electrically heated commercial or low-profile units.

Quick and easy installation – easily extend the case depth with emitters and new filter.

Plug-and-Play with 120 Volt Power Supply–Emitters will continuously operate independent of air curtain operation.

Simply apply new (supplied) filter and intake screen to front of extension.

Extension adds 4” of depth to each unit.

UV-C resistant silicone supplied to further secure and block UV-C light from escaping unit.

To Request a webinar/lunch-and-learn of the UVC-Aire or other Powered Aire products, email us here:

Info@PoweredAire.com

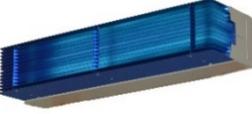


**To learn more about the UVC-Aire, visit:
www.PoweredAire.com/UVCAire**

www.PoweredAire.com • info@PoweredAire.com • 888-321-AIRE (2473)





PRODUCT (Click Link)	OUTDOOR OR INDOOR	AIRBORNE AND SURFACE DISINFECTION	LAMP LENGTHS	INTERNAL OR EXTERNAL MOUNT	NOTES
RLM Xtreme 	INDOOR or OUTDOOR (NEMA 3R)	AIRBORNE & SURFACE	33" & 61" HIGH OUTPUT	INTERNAL	<ul style="list-style-type: none"> Utilizes high-output lamps to disinfect airstreams, cooling coils and drain pans Easily mounts to our field supplied vertical supports Typical install provides 360° UV-C distribution 120-277Vac power supply Premium FEP-sleeved lamps standard 5-year ballast warranty; UL, CUL listed components; ETL Pending Learn More
SLX 	INDOOR	AIRBORNE & SURFACE	16", 24", 31", 36", 40" & 48" HIGH OUTPUT	EXTERNAL	<ul style="list-style-type: none"> Utilizes high-output lamps to disinfect airstreams and cooling coils Easily mounts to exterior of AHU, supply, return or exhaust plenums or ducts; Mounts from top or side Premium FEP-sleeved lamps standard Typical install provides 360° UV-C distribution 120-240Vac power supply 3-year fixture warranty; UL, CUL listed Learn More
GLO UPPER-ROOM 3 models 	INDOOR	AIRBORNE	150 (~12") 225 (~22") 310 (~34")	WALL-MOUNTED >7FT	<ul style="list-style-type: none"> Safe for occupants Creates columnated beam of UV-C in the upper portion of the room Inactivates airborne viruses and bacteria Exceeds U.S. HHS and CDC guidelines for hospital applications Exclusive, high spectral parabolic reflector boosts output as much as 350% compared to conventional designs 3-year fixture warranty; ETL (pending) Electrical Safety Tested and UL 2998 compliant Learn More
X-PLUS 	OUTDOOR	SURFACE	17", 22", 23", 33", 36", 45" & 60"	EXTERNAL	<ul style="list-style-type: none"> NEMA 4X outdoor rated Ideal for rooftop, through-the-wall, split or packaged system 17" to 60" Lamp options Typical install provides 360° UV-C distribution Mounts from top or side of RTU or duct; No need to open or access HVAC equipment 120-240Vac power supply 3-year fixture warranty; UL, CUL listed Learn More

PRODUCT (Click Link)	OUTDOOR OR INDOOR	AIRBORNE AND SURFACE DISINFECTION	LAMP LENGTHS	INTERNAL OR EXTERNAL MOUNT	NOTES
DOUBLE-ENDED FIXTURE (DEF) 	INDOOR	AIRBORNE & SURFACE	22" & 34" HIGH OUTPUT	INTERNAL	<ul style="list-style-type: none"> • DEF HO utilizes high output lamps to disinfects airstreams, cooling coils and drain pans. DEF SO disinfects coils and drain pans. • Water-proof ballast/components • Fixture-to-fixture Plug-n-Play • Typical install provides 270° UV-C distribution • 120-277Vac power supply • 3-year fixture warranty; UL, CUL listed • Learn More
RLM-SS 	INDOOR	SURFACE	12", 17", 22" & 33"	INTERNAL	<ul style="list-style-type: none"> • Disinfect coil/surface microbial growth • Ideal for fan coil units, PTAC units and heat pump systems • Typical install provides 360° UV-C distribution • 120-277Vac power supply • 3-year fixture warranty; UL, CUL listed components • Learn More
HORNET 	INDOOR	SURFACE	12" & 17"	EXTERNAL	<ul style="list-style-type: none"> • Perfect for residential air conditioning systems • Single ended UV-C lamp • Low voltage 24V wall plug adapter (provided) that can be plugged into a standard wall outlet. • 1-year fixture warranty • Learn More
STINGER 	INDOOR	SURFACE	6.5"	EXTERNAL	<ul style="list-style-type: none"> • Compact 18W Quad Lamp • Fan coil units, heat pumps, unit ventilators, terminal units, and individual duct runs • Ideal for above ceiling fan coils or VAV boxes • <5-ton units • Extends 7" into the airstream • 24V Low voltage power • 1-year fixture warranty • Learn More
ENCAPSULAMP 	---	---	All Linear Lamps	---	<ul style="list-style-type: none"> • Available on all linear lamps • Clear FEP sleeve allows transmission of UV-C energy, while containing glass and mercury should accidental breakage occur • Learn More

INTRODUCING: THE NEW MODEL DSI WITH EXTENDED HOUSING

WE ARE HERE FOR YOU.



Twin City Fan is proudly responding to the quickly rising need for healthcare customers' fan orders in COVID-19 projects. Our product development team has recently designed a new Model DSI, Size 140X, with extended housing to better support those needs. The fan

housing can hold a 24"x24"x11.5"

HEPA filter and a pre-filter to provide

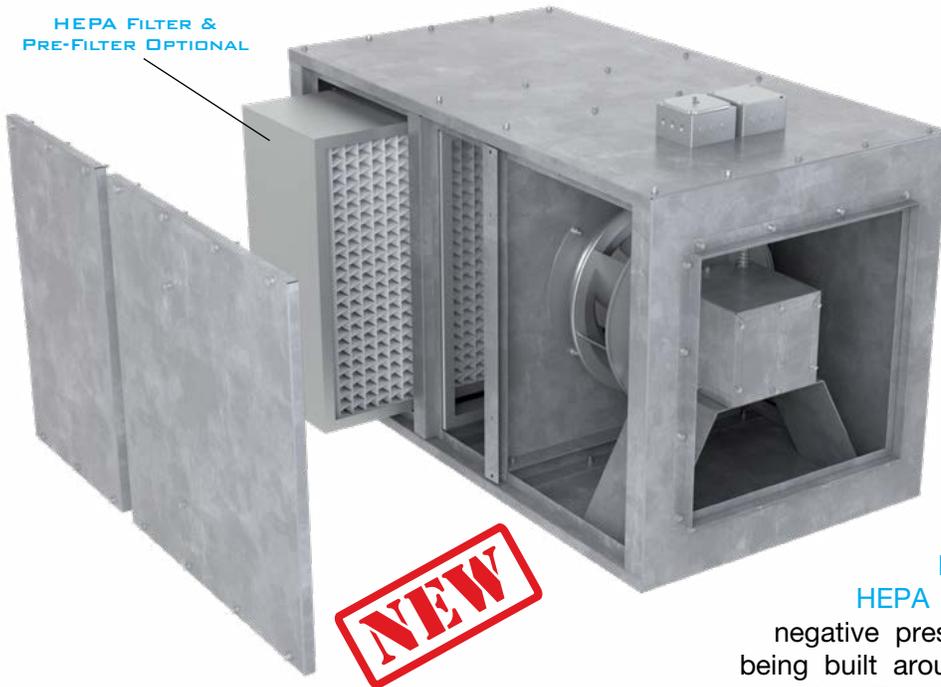
negative pressure to rooms in overflow hospitals being built around the country. The fan utilizes our new $\frac{3}{4}$ HP, 1800 RPM EC motor with GridPoint motor controller. The controller allows customers to set specific operating speeds, the max speed of the motor and change from a 0-10 VDC signal to a set operating point. One controller, which is a plug and play unit, is being sent with every ten fans and can be used on any number of fan units.

Due to the extremely efficient impeller, the fan can function with a $\frac{3}{4}$ HP motor instead of the 1 HP motor that standard impeller types would require. This is important because standard 20A circuits can only handle a single 1 HP motor, but you can install two of the $\frac{3}{4}$ HP motors on that same 20A circuit. The new fan has airflow capabilities up to 2000 CFM and static pressure capabilities over 2".

PRODUCT FEATURES

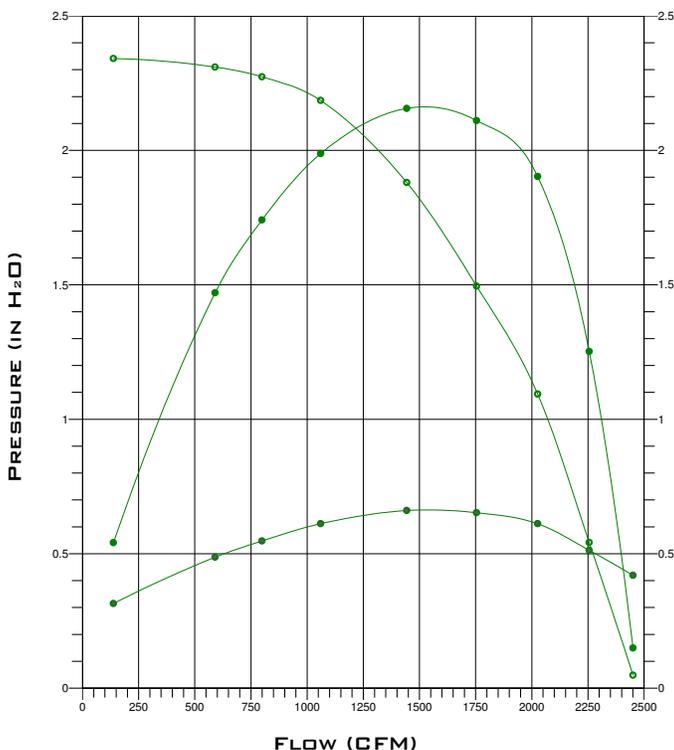
- Aluminum Inlet and Outlet Guard (optional)
- 0-10 VDC Lead, Factory Installed
- Extended Filter Section (HEPA filter optional)
- MEV 8 and 13 Pre-Filters (optional)
- EC-ODP Motor: $\frac{3}{4}$ HP, 1750 RPM, 115V/230V, Single Phase, 60Hz and 50Hz
- NEMA 1 Disconnect Switch
- GridPoint Motor Controller (See GridPoint Manual)

HEPA FILTER &
PRE-FILTER OPTIONAL



NEW

MODEL DSI, SIZE 140X
PERFORMANCE CURVE



Industry's Highest Ultraviolet Dose:

The powerful **GLO** Series Upper-Room Germicidal Fixtures provide the industry's greatest amount of Ultraviolet-C energy fluence, or dosage, to inactivate airborne viruses and bacteria, making them the best choice for airborne infection mitigation.

The wall-mounted GLO fixtures exceed the performance guidelines from the U.S. Centers for Disease Control and Prevention (CDC) for hospital and healthcare applications.¹

Inactivate Airborne Viruses:

The ultraviolet germicidal (UVGI) energy "kills" all known microorganisms, including bacteria, viruses, molds and other pathogens. Operating 24/7/365, or during business operating hours, the high-output upper-air fixtures inactivates microbes when exposed to UV-C energy, including measles, mumps, TB and viruses.²

COVID-19:

As part of its COVID-19 guidance to building owners, the CDC states, "Consider using ultraviolet germicidal irradiation (UVGI) as a supplement to help inactivate the virus."³

Best-In-Class Design:

- Exclusive, high spectral parabolic reflector boosts output as much as 35% compared to conventional designs
- Proven technology effective in killing all airborne microorganisms
- Efficient, low cost, microbial risk reduction for any setting
- Patent-pending design installs quickly and easily



¹ <https://www.cdc.gov/niosh/docs/2009-105/pdfs/2009-105.pdf>

² In accordance with the U.S. EPA's Office of Enforcement and Compliance Assurance, UV Resources does not make any claims regarding inactivating COVID-19 or SARS-CoV-2 as a Pesticide-Producing or Device-Producing Establishment.

³ [cdc.gov/coronavirus/2019-ncov/community/office-buildings.html](https://www.cdc.gov/coronavirus/2019-ncov/community/office-buildings.html)

HEALTHCARE:



- ER Waiting Rooms
- Intensive Care Units
- Operating Rooms
- Urgent Care Clinics
- Doctor and Dental Offices
- Nursing Homes/ Extended Care Facilities

MANUFACTURING



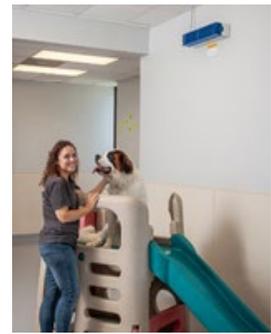
- Clean Rooms
- Pharmaceutical Labs
- Bakeries/ Food Manufacturing
- Meat/Dairy Processing

INSTITUTION:



- Schools /Universities
- Sports Arenas
- Laboratories
- Prisons/Jails
- Emergency Shelters

BUSINESS:



- Meeting/Conference Rooms
- Cafeterias
- Break Rooms
- Lobbies
- Daycare
- Veterinary/ Kennels
- Food courts

PRODUCT	GLO™ 150	GLO™ 225	GLO™ 310
Model	GLO-150-120-277	GLO-225-120-277	GLO-310-120-277
Part Number	P/N 41824001	P/N 41824000	P/N 41824002
Electrical	120-277V 50/60Hz	120-277V 50/60Hz	120-277V 50/60Hz
Lamp Watts	8 Lamp Watts	25 Lamp Watts	36 Lamp Watts
Germicidal Output	125 µW/cm² @ 1M	407 µW/cm² @ 1M	505 µW/cm² @ 1M
Coverage	±150 sq. ft. (~10ft. out & ~7.5ft. across either side of the fixture)	±225 sq. ft. (~15ft. out & ~7.5ft. across either side of fixture)	±310 sq. ft. (~18ft. out & ~8.5ft. across either side of the fixture)
Dimensions	14.25"(W) x 6.4"(H) x 4.4"(D)	23.25"(W) x 6.4"(H) x 4.4"(D)	35"(W) x 6.4"(H) x 4.4"(D)

Rev. C 7/20

The Leader in UV-C Disinfection and HVAC Efficiency

PORTABLE HEPA FILTRATION SYSTEM

Ventilation Products

Product Description

The VAW Systems Portable HEPA Filtration System (PHFS) is a lightweight portable unit, that proves to be a quiet compact air cleaning solution. This system is designed to filter 0.3 micron contaminants regardless of the room volume, as well as create a negative airflow. The resulting airflow and pressure will limit the spread of airborne contaminants into surrounding areas. In addition to negative airflow applications, the PHFS can be used in open spaces as an effective air scrubber. The unit will pull air in, removing many contaminants, and discharging cleaner air back into the room.

Applications

Typical applications that will benefit with the PHFS:

- Dental and Medical Offices
- Hospitals
- Classrooms
- Restaurants
- Salons/Spas
- Places of Worship
- Open Offices and Staff Cafeterias

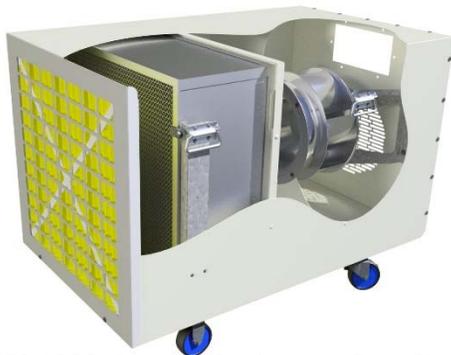
PHFS Models

PHFS-500:

- Up to 500 CFM air volume (approx. 20 air changes per hour in a typical office space)
- Unit Dimensions: 30 x 19 x 40in., 150 lbs

PHFS-1200:

- Up to 1,200 CFM air volume (approx. 10 air changes per hour in a large meeting room or seating area)
- UV light for extra protection
- Unit Dimensions: 26 x 26 x 44in., 200 lbs



PHFS-1200: Durable Design and Easy Filter Access



PHFS-500: Portable HEPA Filtration System

Product Highlights

- 100% positive air seal with HEPA filter; rated efficiency of 99.97% at 0.3 microns
- Standard MERV 7 or higher pre-filter
- Galvanized casing with exterior powder coat finish
- QPS Certified
- Variable airflow control (low/high)
- Filter change indicator light
- 115 VAC powered c/w 10ft power cord
- Castors shipped loose to be installed onsite to allow for easy movement of unit
- One (1) year warranty



MIDWEST MECHANICAL SOLUTIONS

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